8.3 RRC connection mobility procedure

8.3.1 Cell Update

8.3.1.1 Cell Update: cell reselection in CELL_FACH

8.3.1.1.1 Definition

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8.3.1.1.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

…

1> RLC unrecoverable error:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

…

When initiating cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

…

…

1> move to CELL_FACH state, if not already in that state;

1> if the UE performs cell re-selection:

2> clear the variable C_RNTI; and

2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

…

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

1> set the IE "Cell update cause" corresponding to the cause specified in TS 25.331 subclause 8.3.1.2 that is valid when the CELL UPDATE message is submitted to lower layers for transmission;

NOTE: During the time period starting from when a cell update procedure is initiated by the UE until when the procedure ends, additional CELL UPDATE messages may be transmitted by the UE with different causes.

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

1> if the value of the variable PROTOCOL_ERROR_INDICATOR is TRUE:

…

1> if the value of the variable FAILURE_INDICATOR is TRUE:

…

…

When the UE receives a CELL UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1> stop timer T302;

1> in case of a cell update procedure and the CELL UPDATE CONFIRM message:

2> includes "RB information elements"; and/or

2> includes "Transport channel information elements"; and/or

2> includes "Physical channel information elements"; and

2> if the variable ORDERED_RECONFIGURATION is set to FALSE:

3> set the variable ORDERED_RECONFIGURATION to TRUE.

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following:

…

…

1> enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

…

If the UE after state transition remains in CELL_FACH state, it shall

1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select PRACH according to TS 25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

1> not prohibit periodical status transmission in RLC;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> ignore that IE and stop using DRX.

If the UE after the state transition remains in CELL_FACH state; and

- a C-RNTI is stored in the variable C_RNTI;

…

the UE shall:

…

1> in case of a cell update procedure:

2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry.

…

1> transmit a response message as specified in TS 25.331 subclause 8.3.1.7;

…

If the CELL UPDATE CONFIRM message:

- includes the IE "RB information to release list":

the UE shall:

1> transmit a RADIO BEARER RELEASE COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list"; and

- includes the IE "RB information to reconfigure list"; or

- includes the IE "RB information to be affected list":

the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and

- includes "Transport channel information elements":

the UE shall:

1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- includes "Physical channel information elements":

the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI":

the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New C-RNTI"; and
- does not include the IE "New U-RNTI":

the UE shall:

1> transmit no response message.

If the new state is CELL_FACH, the response message shall be transmitted using the new configuration after the state transition., and the UE shall:

…

1> if the variable PDCP_SN_INFO is empty:

…

2> if the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message did not contain the IE "Ciphering mode info":

3> when RLC has been requested to transmit the response message,

4> continue with the remainder of the procedure.

…

If any or several of the following conditions are true:

…;

- reselection to another UTRA cell (including the previously serving cell) before completion of the cell update or URA update procedure;

the UE shall:

1> stop T302 if it is running;

…

1> check whether it is still in "in service area";

…

1> in case of a cell update procedure:

2> clear any entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.

If the UE detects "in service area" if it has not entered idle mode, and:

1> if V302 is equal to or smaller than N302, the UE shall:

2> if the UE performed cell re-selection:

3> delete its C-RNTI.

2> in case of a cell update procedure:

3> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the CELL UPDATE message for transmission on the uplink CCCH.

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302, the UE shall:

…

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.1.3 Test purpose

1. To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell.

2. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection.

8.3.1.1.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-69	-69	-60
P-CCPCH RSCP (TDD)	dBm	-60	-69	-69	-60

Table 8.3.1.1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions. SS switches the power settings repeatedly between columns "T1" and "T0", whenever the description below specifies that the transmission power settings for cell 1 and cell 2 be reversed.

The UE is in the CELL_FACH state, camping onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. The UE shall find cell 2 to be more suitable for service and hence perform a cell reselection. After the completion of cell reselection, the UE shall transmits a CELL UPDATE message to the SS on the uplink CCCH of cell 2 and set IE "Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_FACH", to the UE on the downlink DCCH. UE shall verify that IE "New C-RNTI" is not included in the downlink message and shall send a CELL UPDATE message to SS again. SS shall then send a CELL UPDATE CONFIRM message which includes a valid IE "New C-RNTI". SS verifies that the UE send UTRAN MOBILITY INFORMATION CONFIRM message.. UE shall stay in CELL_FACH state. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with CELL UPDATE CONFIRM message and allocates new C-RNTI and U-RNTI identities to the UE. The IE "RRC State Indicator" is set to "CELL_FACH" in this message. The UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. Following this, SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. The UE shall initiate a cell update procedure by transmitting a CELL UPDATE message and stating the cause as 'cell re-selection'. SS replies with a CELL UPDATE CONFIRM message which contains IE "Physical channel information elements" and IE "RRC State Indicator" is set to "CELL_DCH". The UE shall move to CELL_DCH state and send PHSICAL CHANNEL RECONFIGURATION COMPLETE message. The SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message, asking the UE to move to CELL_FACH state. The UE shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after transiting to CELL_FACH state. Then, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains IE "Transport channel information elements" and IE "RRC State Indicator" is set to "CELL_DCH". The UE shall move to CELL_DCH state and send TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. The SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message, asking the UE to move to CELL_FACH state. The UE shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after transiting to CELL_FACH state. Following this, SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 2. SS replies with a CELL UPDATE CONFIRM message which contains IE "RB information to be affected list". The UE shall send RADIO BEARER RECONFIGURATION COMPLETE message. Then, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains IE "RB information to release list". The UE shall send RADIO BEARER RELEASE COMPLETE message. Finally, SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 2. SS shall not respond to this message but SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1. UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS shall then send CELL UPDATE CONFIRM message to UE. UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state in cell 1
2			Void	SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.1. The UE shall find that the cell 2 is better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
3	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
4	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH".
4a	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
4b	←		CELL UPDATE CONFIRM	See message content.
5	→		UTRAN MOBILITY INFORMATION CONFIRM	
6				SS reverses the transmission power level of cell 1 and cell 2.
7	→		CELL UPDATE	
8	←		CELL UPDATE CONFIRM	New C-RNTI and U-RNTI identities are assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH".
9	→		UTRAN MOBILITY INFORMATION CONFIRM	
10				SS reverses the transmission power level of cell 1 and cell 2.
11	→		CELL UPDATE	
12	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_DCH". IE "Physical channel information elements" is included in this message
12a	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
13	←		PHYSICAL CHANNEL RECONFIGURATION	The UE is in CELL_DCH now. The SS shall send PHYSICAL CHANNEL RECONFIGURATION message to the UE asking the UE to transit to CELL_FACH state.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
15				The SS reverses the transmission power level of cell 1 and cell 2.
16	→		CELL UPDATE	

Step	Direction		Message	Comment
	UE	SS		
17	←		CELL UPDATE CONFIRM	IE "Physical channel information elements" is included in this message, and IE "RRC State Indicator" is set to "CELL_DCH". IE "Transport channel information elements" is included in this message
18	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
19	←		PHYSICAL CHANNEL RECONFIGURATION	The UE is in CELL_DCH now. The SS shall send PHYSICAL CHANNEL RECONFIGURATION message to the UE asking the UE to transit to CELL_FACH state.
20	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
21				The SS reverses the transmission power level of cell 1 and cell 2.
22	→		CELL UPDATE	
23	←		CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH". IE "RB information to reconfigure list" and IE "RB information to be affected list" is included in this message.
24	→		RADIO BEARER RECONFIGURATION COMPLETE	
25				The SS reverses the transmission power level of cell 1 and cell 2.
26	→		CELL UPDATE	
27	←		CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH". IE "RB information to release list" is included in this message
28	→		RADIO BEARER RELEASE COMPLETE	
29				SS reverses the transmission power level of cell 1 and cell 2.
30	→		CELL UPDATE	
31				SS reverses the transmission power level of cell 1 and cell 2.
32	→		CELL UPDATE	
33	←		CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE.
34	→		UTRAN MOBILITY INFORMATION CONFIRM	
35	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

CELL UPDATE (Step 3, 4a, 7,, 11, 16, 22, 30 and 32)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to '0000 0000 0001' In step 3, 4a and 7 check to see if set to '0000 0000 0000 0000 0001'. In step 11, 16, 22, 26, 30 and 32, check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in previous assignment Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108, clause 9.

CELL UPDATE CONFIRM (Step 4b)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI RRC transaction identifier	'1010 1010 1010 1010' Selects an arbitrary integer between 0 and 3, but is different from that used in step 4.

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI New C-RNTI	 '0000 0000 0001' An arbitrary 20-bits string which is different from original S-RNTI '0000 0000 0000 1111'

CELL UPDATE CONFIRM (Step 12)

Use the same message sub-type found in step 8 and k=0, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement Uplink DPCH info Downlink information common for all radio links Downlink information per radio link list	 Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS) Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS) Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 12a)

Use the same message sub-type found in [9] TS 34.108 clause 9.

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_DCH in PS":

CELL UPDATE CONFIRM (Step 17)

Use the same message sub-type found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
UL Transport channel information for all transport channels	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Added or Reconfigured uplink TrCH information	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
DL Transport channel information for all transport channels	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Added or Reconfigured downlink TrCH information	Same as RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
CHOICE channel requirement	
Uplink DPCH info	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information common for all radio links	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information per radio link list	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 14)

Use the same message sub-type found in [9] TS 34.108 clause 9.

PHYSICAL CHANNEL RECONFIGURATION (Step 19)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_DCH in PS", with following exception.

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 1111'

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 20)

Use the same message sub-type found in [9] TS 34.108 clause 9.

CELL UPDATE CONFIRM (Step 23)

Use the same message sub-type found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
RB information to be reconfigure	
New C-RNTI - RB identity - PDCP info - PDCP SN info - RLC info - RB Information Release List - RB Information Reconfiguration List	'1010 1010 1010 1010' 20 Not Present Not Present Not Present Not Present Present
- RB Information Affected List	Present

CELL UPDATE CONFIRM (Step 27)

Use the same message sub-type found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 1111'
RB information to release -RB identity	 4

CELL UPDATE CONFIRM (Step 33)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

8.3.1.1.5 Test requirement

At step 3 the UE shall reselect to cell 2 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE "Cell update cause".

At step 4a the UE shall transmit CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause".

At step 4b, the SS shall send a CELL UPDATE CONFIRM.

At step 5, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

At step 7 the UE shall sent a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 9, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

At step 11 the UE shall sent a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 12, the SS shall send a CELL UPDATE CONFIRM taking the UE into CELL_DCH state. In addition, it also specifies the IE “Physical Channel Information elements”.

At step 12a, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the new physical channel assigned.

At step 13 and 14, the SS uses PHYSICAL CHANNEL RECONFIGURATION to take the UE into CELL_FACH state.

At step 15, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 16 the UE shall sent a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 17, the SS shall send a CELL UPDATE CONFIRM and take the UE into CELL_DCH state. In addition, it also specifies the IE “Physical Channel Information elements” and “Transport Channel Information elements”.

At step 18, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE.

At step 19 and 20, the SS uses PHYSICAL CHANNEL RECONFIGURATION to take the UE into CELL_FACH state.

At step 21, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 22, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 23, the SS shall send a CELL UPDATE CONFIRM taking the UE into CELL_FACH state. In addition, it also specifies "RB Information Reconfigure List and RB Information Affected List Information".

At step 24, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE.

At step 25, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 26, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 27, the SS shall send a CELL UPDATE CONFIRM taking the UE into CELL_FACH state. In addition, it also specifies the IE "RB Information to release list".

At step 28, the UE shall transmit a RADIO BEARER RELEASE COMPLETE.

At step 29, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 30, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 31, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 32, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 33, the SS shall send a CELL UPDATE CONFIRM

At step 34, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message

8.3.1.1a Cell Update: cell reselection in CELL_FACH (Cells belong to different frequency bands)

8.3.1.1a.1 Definition

This test case is identical to test case 8.3.1.1 except that the cells belong to different frequency bands.

Note: The test case 8.3.1.1 is an intra frequency test.

8.3.1.1a.2 Conformance requirement

Same conformance requirement as clause 8.3.1.1.2

8.3.1.1a.3 Test purpose

1. To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell in different frequency band.
2. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection

8.3.1.1a.4 Method of test

Initial Condition

Same initial conditions as clause 8.3.1.1.4 except,

Cell 2 is mapped to cell 4 (inter frequency) of 34.108 clause 6.1 and both cells belong to different frequency bands.

Following updated System information is transmitted in both cells after UE is brought to initial state of PS-DCCH+DTCH_FACH (state 6-11) in cell 1.

MASTER INFORMATION BLOCK

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	Set to (Current MIB value tag + 1)
SIB 4 Cell Value tag	Set to (Current SIB4 value tag + 1)
SB 1 Cell Value tag	Set to (Current SIB4 value tag + 1)

SCHEDULING BLOCK 1

Information Element	Value/remark
SIB 11 Cell Value Tag	Set to (Current SIB 11 value tag + 1)

System Information Block type 4

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/Remarks
-Qualmin	-16dB

System Information Block type 11

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present

SYSTEM INFORMATION CHANGE INDICATION

Information Element	Value/remark
Message Type	
BCCH modification info	
MIB Value tag	Set equal to Value tag sent in modified MIB

Related ICS/IXIT statement(s)

- UE supports multiple bands simultaneously yes/no

Test Procedure

Same test procedure as clause 8.3.1.1.4 with the following exception

After step 30, SS shall send CELL UPDATE CONFIRM message to the UE. UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message.

Note: If the UE supports more than 2 frequency bands, the test may be executed for various band combinations.

Expected sequence

Same expected sequence as clause 8.3.1.1.4 with the following additional test steps:

Step	Direction		Message	Comment
	UE	SS		
30a	←		CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE.
30b	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

Same specific message contents as clause 8.3.1.1.4. The message content for the additional test steps are given below.

CELL UPDATE CONFIRM (Step 30a)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'0000000000000001'

8.3.1.1a.5 Test requirement

Same test requirements as clause 8.3.1.1.5 with the following additional test requirements:

At step 30a, the SS shall send a CELL UPDATE CONFIRM

At step 30b, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message

8.3.1.1b Cell Update: cell reselection in CELL_FACH(TDD)

8.3.1.1b.1 Definition

All UEs which support TDD

8.3.1.1b.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

…

1> RLC unrecoverable error:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

…

When initiating cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

…

…

1> move to CELL_FACH state, if not already in that state;

1> if the UE performs cell re-selection:

2> clear the variable C_RNTI; and

2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

…

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

1> set the IE "Cell update cause" corresponding to the cause specified in TS 25.331 subclause 8.3.1.2 that is valid when the CELL UPDATE message is submitted to lower layers for transmission;

NOTE: During the time period starting from when a cell update procedure is initiated by the UE until when the procedure ends, additional CELL UPDATE messages may be transmitted by the UE with different causes.

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

1> if the value of the variable PROTOCOL_ERROR_INDICATOR is TRUE:

…

1> if the value of the variable FAILURE_INDICATOR is TRUE:

…

…

When the UE receives a CELL UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1> stop timer T302;

1> in case of a cell update procedure and the CELL UPDATE CONFIRM message:

2> includes "RB information elements"; and/or

2> includes "Transport channel information elements"; and/or

2> includes "Physical channel information elements"; and

2> if the variable ORDERED_RECONFIGURATION is set to FALSE:

3> set the variable ORDERED_RECONFIGURATION to TRUE.

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following:

…

…

1> enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

…

If the UE after state transition remains in CELL_FACH state, it shall

1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select PRACH according to TS 25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

1> not prohibit periodical status transmission in RLC;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> ignore that IE and stop using DRX.

If the UE after the state transition remains in CELL_FACH state; and

- a C-RNTI is stored in the variable C_RNTI;

…

the UE shall:

…

1> in case of a cell update procedure:

2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry.

…

1> transmit a response message as specified in TS 25.331 subclause 8.3.1.7;

…

If the CELL UPDATE CONFIRM message:

- includes the IE "RB information to release list":

the UE shall:

1> transmit a RADIO BEARER RELEASE COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list"; and
- includes the IE "RB information to reconfigure list"; or
- includes the IE "RB information to be affected list":

the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- includes "Transport channel information elements":

the UE shall:

1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- includes "Physical channel information elements":

the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI":

the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and

- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New C-RNTI"; and
- does not include the IE "New U-RNTI":

the UE shall:

1> transmit no response message.

If the new state is CELL_FACH, the response message shall be transmitted using the new configuration after the state transition., and the UE shall:

…

1> if the variable PDCP_SN_INFO is empty:

…

2> if the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message did not contain the IE "Ciphering mode info":

3> when RLC has been requested to transmit the response message,

4> continue with the remainder of the procedure.

…

If any or several of the following conditions are true:

…;

- reselection to another UTRA cell (including the previously serving cell) before completion of the cell update or URA update procedure;

the UE shall:

1> stop T302 if it is running;

…

1> check whether it is still in "in service area";

…

1> in case of a cell update procedure:

2> clear any entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.

If the UE detects "in service area" if it has not entered idle mode, and:

1> if V302 is equal to or smaller than N302, the UE shall:

2> if the UE performed cell re-selection:

3> delete its C-RNTI.

2> in case of a cell update procedure:

3> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the CELL UPDATE message for transmission on the uplink CCCH.

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302, the UE shall:

…

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.1b.3 Test purpose

1. To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell.
2. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection.

8.3.1.1b.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active. Each cell configure 3 carriers, one is the primary carrier, the other two are secondary carrier.

Detail in the table follows:

Parameter	Cell 1	Cell 2
UTRA RF Channel Number1	Ch. 1	Ch. 2
UTRA RF Channel Number1	Ch. 2	Ch.3
UTRA RF Channel Number1	Ch.3	Ch.1

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.1b

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
P-CCPCH RSCP (TDD)	dBm	-60	-69	-69	-60

Table 8.3.1.1b illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions. SS switches the power settings repeatedly between columns "T1" and "T0", whenever the description below specifies that the transmission power settings for cell 1 and cell 2 be reversed.

The UE is in the CELL_FACH state, camping onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1b. The UE shall find cell 2 to be more suitable for service and hence perform a cell reselection. After the completion of cell reselection, the UE shall transmits a CELL UPDATE message to the SS on the uplink CCCH of cell 2 and set IE "Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_FACH", to the UE on the downlink DCCH. UE shall verify that IE "New C-RNTI" is not included in the downlink message and shall send a CELL UPDATE message to SS again. SS shall then send a CELL UPDATE CONFIRM message which includes a valid IE "New C-RNTI". SS verifies that the UE send UTRAN MOBILITY INFORMATION CONFIRM message.. UE shall stay in CELL_FACH state. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1b. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with CELL UPDATE CONFIRM message and allocates new C-RNTI and U-RNTI identities to the UE. The IE "RRC State Indicator" is set to "CELL_FACH" in this message. The UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. Following this, SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1b. The UE shall initiate a cell update procedure by transmitting a CELL UPDATE message and stating the cause as 'cell re-selection'. SS replies with a CELL UPDATE CONFIRM message which contains IE "Physical channel information elements" and IE "RRC State Indicator" is set to "CELL_DCH". The UE shall move to CELL_DCH state and send PHSICAL CHANNEL RECONFIGURATION COMPLETE message. The SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message, asking the UE to move to CELL_FACH state. The UE shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after transiting to CELL_FACH state. Then, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1b. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains IE "Transport channel information elements" and IE "RRC State Indicator" is set to "CELL_DCH". The UE shall move to CELL_DCH state and send TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. The SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message, asking the UE to move to CELL_FACH state. The UE shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after transiting to CELL_FACH state. Following this, SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1b. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 2. SS replies with a CELL UPDATE CONFIRM message which contains IE "RB information to be affected list". The UE shall send RADIO BEARER RECONFIGURATION COMPLETE message. Then, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1b. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains IE "RB information to release list". The UE shall send RADIO BEARER RELEASE COMPLETE message. Finally, SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1b. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 2. SS shall not respond to this message but SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1b. UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS shall then send CELL UPDATE CONFIRM message to UE. UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state in cell 1
2			Void	SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.1b. The UE shall find that the cell 2 is better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
3	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
4	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH".
4a	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
4b	←		CELL UPDATE CONFIRM	See message content.
5	→		UTRAN MOBILITY INFORMATION CONFIRM	
6				SS reverses the transmission power level of cell 1 and cell 2.
7	→		CELL UPDATE	
8	←		CELL UPDATE CONFIRM	New C-RNTI and U-RNTI identities are assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH".
9	→		UTRAN MOBILITY INFORMATION CONFIRM	
10				SS reverses the transmission power level of cell 1 and cell 2.
11	→		CELL UPDATE	
12	→		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_DCH". IE "Physical channel information elements" is included in this message
12a	←		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
13	→		PHYSICAL CHANNEL RECONFIGURATION	The UE is in CELL_DCH now. The SS shall send PHYSICAL CHANNEL RECONFIGURATION message to the UE asking the UE to transit to CELL_FACH state.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
15				The SS reverses the transmission power level of cell 1 and cell 2.
16	→		CELL UPDATE	

Step	Direction		Message	Comment
	UE	SS		
17	←		CELL UPDATE CONFIRM	IE "Physical channel information elements" is included in this message, and IE "RRC State Indicator" is set to "CELL_DCH". IE "Transport channel information elements" is included in this message
18	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
19	←		PHYSICAL CHANNEL RECONFIGURATION	The UE is in CELL_DCH now. The SS shall send PHYSICAL CHANNEL RECONFIGURATION message to the UE asking the UE to transit to CELL_FACH state.
20	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
21				The SS reverses the transmission power level of cell 1 and cell 2.
22	→		CELL UPDATE	
23	←		CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH". IE "RB information to reconfigure list" and IE "RB information to be affected list" is included in this message.
24	→		RADIO BEARER RECONFIGURATION COMPLETE	
25				The SS reverses the transmission power level of cell 1 and cell 2.
26	→		CELL UPDATE	
27	←		CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH". IE "RB information to release list" is included in this message
28	→		RADIO BEARER RELEASE COMPLETE	
29				SS reverses the transmission power level of cell 1 and cell 2.
30	→		CELL UPDATE	
31				SS reverses the transmission power level of cell 1 and cell 2.
32	→		CELL UPDATE	
33	←		CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE.
34	→		UTRAN MOBILITY INFORMATION CONFIRM	
35				SS reverses the transmission power level of cell 1 and cell 2
36	→		CELL UPDATE	

Step	Direction		Message	Comment
	UE	SS		
37	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_DCH". IE " Physical channel information elements" and "Freq Info" is included in this message and is indicated on the secondary carrier.
38	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE response the message on the DPCH of the secondary carrier.
39	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1

Use the same message found in TS 34.108 , with the exceptions of the following IEs :

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

CELL UPDATE (Step 3, 4a, 7, 11, 16, 22, 30 and 32)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	In step 3, 4a and 7 check to see if set to '0000 0000 0000 0000 0001'. In step 11, 16, 22, 26, 30 and 32, check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in previous assignment
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108, clause 9.

CELL UPDATE CONFIRM (Step 4b)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'
RRC transaction identifier	Selects an arbitrary integer between 0 and 3, but is different from that used in step 4.

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	An arbitrary 20-bits string which is different from original S-RNTI
New C-RNTI	'0000 0000 0000 1111'

CELL UPDATE CONFIRM (Step 12)

Use the same message sub-type found in step 8 and k=0, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	
Uplink DPCH info	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information common for all radio links	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information per radio link list	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 12a)

Use the same message sub-type found in [9] TS 34.108 clause 9.

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_DCH in PS":

CELL UPDATE CONFIRM (Step 17)

Use the same message sub-type found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
UL Transport channel information for all transport channels	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Added or Reconfigured uplink TrCH information	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
DL Transport channel information for all transport channels	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Added or Reconfigured downlink TrCH information	Same as RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
CHOICE channel requirement	
Uplink DPCH info	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information common for all radio links	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information per radio link list	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 14)

Use the same message sub-type found in [9] TS 34.108 clause 9.

PHYSICAL CHANNEL RECONFIGURATION (Step 19)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_DCH in PS", with following exception.

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 1111'

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 20)

Use the same message sub-type found in [9] TS 34.108 clause 9.

CELL UPDATE CONFIRM (Step 23)

Use the same message sub-type found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
RB information to be reconfigure	
New C-RNTI - RB identity - PDCP info - PDCP SN info - RLC info - RB Information Release List - RB Information Reconfiguration List	'1010 1010 1010 1010' 20 Not Present Not Present Not Present Not Present Present
- RB Information Affected List	Present

CELL UPDATE CONFIRM (Step 27)

Use the same message sub-type found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 1111'
RB information to release -RB identity	 4

CELL UPDATE CONFIRM (Step 33)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

CELL UPDATE CONFIRM (Step 36)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
CellUpdateConfirm-CCCH-r4-TDD128-add-ext-IEs	
frequencyInfo	The secondary carrier frequency of cell 2

Contents of System Information Block type 3

Use the same message found in TS 34.108, with the following exceptions,

Information Element	Value/remark
Qrxlevmin	−81dBm
Sintrasearch	21db
Sintersearch	21db
-v4b0NonCriticalExtensions	
-sysInfoType3-v4b0ext	
- mapping-LCR	0

8.3.1.1b.5 Test requirement

At step 3 the UE shall reselect to cell 2 and then it shall transmit a CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause".

At step 4a the UE shall transmit CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause".

At step 4b, the SS shall send a CELL UPDATE CONFIRM.

At step 5, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

At step 7 the UE shall sent a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 9, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

At step 11 the UE shall sent a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 12, the SS shall send a CELL UPDATE CONFIRM taking the UE into CELL_DCH state. In addition, it also specifies the IE "Physical Channel Information elements".

At step 12a, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the new physical channel assigned.

At step 13 and 14, the SS uses PHYSICAL CHANNEL RECONFIGURATION to take the UE into CELL_FACH state.

At step 15, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 16 the UE shall sent a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 17, the SS shall send a CELL UPDATE CONFIRM and take the UE into CELL_DCH state. In addition, it also specifies the IE "Physical Channel Information elements" and "Transport Channel Information elements".

At step 18, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE.

At step 19 and 20, the SS uses PHYSICAL CHANNEL RECONFIGURATION to take the UE into CELL_FACH state.

At step 21, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 22, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 23, the SS shall send a CELL UPDATE CONFIRM taking the UE into CELL_FACH state. In addition, it also specifies "RB Information Reconfigure List and RB Information Affected List Information".

At step 24, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE.

At step 25, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 26, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 27, the SS shall send a CELL UPDATE CONFIRM taking the UE into CELL_FACH state. In addition, it also specifies the IE "RB Information to release list".

At step 28, the UE shall transmit a RADIO BEARER RELEASE COMPLETE.

At step 29, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 30, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 31, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 32, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 33, the SS shall send a CELL UPDATE CONFIRM.

At step 34, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

At step 38, the UE shall transmit a "PHYSICAL CHANNEL RECONFIGURATION COMPLETE" on the secondary carrier.

8.3.1.1c Cell Update: cell reselection in CELL_FACH (Cells belong to different frequency bands for LCR TDD)

8.3.1.1c.1 Definition

This test case is identical to test case 8.3.1.1b except that the cells belong to different frequency bands.

NOTE: The test case 8.3.1.1b is an intra frequency test.

8.3.1.1c.2 Conformance requirement

Same conformance requirement as clause 8.3.1.1b.2

8.3.1.1c.3 Test purpose

1. To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell in different frequency band.

2. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection

8.3.1.1c.4 Method of test

Initial Condition

Same initial conditions as clause 8.3.1.1b.4 except,

Cell 2 is mapped to cell 4 (inter frequency) of 34.108 clause 6.1 and both cells belong to different frequency bands.

Following updated System information is transmitted in both cells after UE is brought to initial state of PS-DCCH+DTCH_FACH (state 6-11) in cell 1.

MASTER INFORMATION BLOCK

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	Set to (Current MIB value tag + 1)
SIB 4 Cell Value tag	Set to (Current SIB4 value tag + 1)
SB 1 Cell Value tag	Set to (Current SIB4 value tag + 1)

SCHEDULING BLOCK 1

Information Element	Value/remark
SIB 11 Cell Value Tag	Set to (Current SIB 11 value tag + 1)

System Information Block type 4

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/Remarks
-Qrxlevmin	-115dBm

System Information Block type 11

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD 3.84Mcps measurement indicator	FALSE
- Inter-frequency TDD 1.28Mcps measurement indicator	TRUE
- Inter-RAT measurement indicators	Not Present

SYSTEM INFORMATION CHANGE INDICATION

Information Element	Value/remark
Message Type	
BCCH modification info	
MIB Value tag	Set equal to Value tag sent in modified MIB

Related ICS/IXIT statement(s)

- UE supports multiple bands simultaneously: yes/no

Test Procedure

Same test procedure as clause 8.3.1.1b.4 with the following exception

After step 30, SS shall send CELL UPDATE CONFIRM message to the UE. UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message.

NOTE: If the UE supports more than 2 frequency bands, the test may be executed for various band combinations.

Expected sequence

Same expected sequence as clause 8.3.1.1b.4 with the following additional test steps:

Step	Direction		Message	Comment
	UE	SS		
30a	←		CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE.
30b	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

Same specific message contents as clause 8.3.1.1b.4. The message content for the additional test steps are given below.

CELL UPDATE CONFIRM (Step 30a)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'0000000000000001'

8.3.1.1c.5 Test requirement

Same test requirements as clause 8.3.1.1b.5 with the following additional test requirements:

At step 30a, the SS shall send a CELL UPDATE CONFIRM

At step 30b, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message

8.3.1.2 Cell Update: cell reselection in CELL_PCH

8.3.1.2.1 Definition

8.3.1.2.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

…

1> RLC unrecoverable error:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

When initiating cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

…

…

1> move to CELL_FACH state, if not already in that state;

1> if the UE performs cell re-selection:

2> clear the variable C_RNTI; and

2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

…

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

1> set the IE "Cell update cause" corresponding to the cause specified in TS 25.331 subclause 8.3.1.2 that is valid when the CELL UPDATE message is submitted to lower layers for transmission;

NOTE: During the time period starting from when a cell update procedure is initiated by the UE until when the procedure ends, additional CELL UPDATE messages may be transmitted by the UE with different causes.

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

1> if the value of the variable PROTOCOL_ERROR_INDICATOR is TRUE:

…

1> if the value of the variable FAILURE_INDICATOR is TRUE:

…

…

When the UE receives a CELL UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1> stop timer T302;

1> in case of a cell update procedure and the CELL UPDATE CONFIRM message:

…

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following:

…

…

1> enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

…

If the UE after state transition enters CELL_PCH state, it shall:

…

1> start the timer T305 using its initial value if timer T305 is not running and periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging Occasion and PICH Monitoring Occasion as specified in TS 25.331 subclause 8.6.3.2 in CELL_PCH state.

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> set the variable INVALID_CONFIGURATION to TRUE.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New C-RNTI"; and
- does not include the IE "New U-RNTI":

the UE shall:

1> transmit no response message.

Reference

3GPP TS 25.331 clause 8.3.1.

8.3.1.2.3 Test purpose

1. To confirm that the UE, in CELL_PCH state, executes a cell update procedure after the successful reselection of another UTRA cell.

8.3.1.2.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 2 are active.

UE: CELL_PCH (state 6-12) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is brought to CELL_PCH state and is camped onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. When the UE detects the presence of cell 2, it moves to CELL_FACH state and transmits a CELL UPDATE message on the uplink CCCH. The value "cell reselection" shall be set in IE "Cell update cause" in CELL UPDATE message. Upon reception of CELL_UPDATE message, SS replies with a CELL UPDATE CONFIRM message with the IE "RRC State Indicator" set to "CELL_PCH". After receiving this message, the UE returns to CELL_PCH state without transmitting any uplink message. SS calls for generic procedure C.4 to check that UE is in CELL_PCH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_PCH state in cell 1
2				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.1. The UE shall find that the cell 2 is better and attempt to perform a cell reselection.
3	→		CELL UPDATE	The UE moves to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection"
4	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_PCH".
5				The UE is in CELL_PCH state.
6	←→		CALL C.4	If the test result of C.4 indicates that UE is in CELL_PCH state, the test passes, otherwise it fails.

Specific Message Contents

CELL UPDATE (Steps 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

8.3.1.2.5 Test requirement

After step 2 the UE shall reselect to cell 2 and transmit a CELL UPDATE message, containing the IE "Cell update cause" set to "cell reselection".

After step 4, the UE shall enter CELL_PCH state.

8.3.1.3 Cell Update: periodical cell update in CELL_FACH

8.3.1.3.1 Definition

8.3.1.3.2 Conformance requirement

UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

…

1> RLC unrecoverable error:

…

1> Cell reselection:

…

1> Periodical cell update:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_FACH or CELL_PCH state; and

2> if the timer T305 expires; and

2> if the criteria for "in service area" as specified in TS 25.331 subclause 8.5.5.2 is fulfilled; and

2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":

3> perform cell update using the cause "periodical cell update".

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

…

1> move to CELL_FACH state, if not already in that state;

…

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

1> set the IE "Cell update cause" corresponding to the cause specified in TS 25.331 subclause 8.3.1.2 that is valid when the CELL UPDATE message is submitted to lower layers for transmission;

NOTE: During the time period starting from when a cell update procedure is initiated by the UE until when the procedure ends, additional CELL UPDATE messages may be transmitted by the UE with different causes.

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

…

When the UE receives a CELL UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1> stop timer T302;

…

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following:

1> enter a state according to TS 25.331 subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

If the UE after state transition remains in CELL_FACH state, it shall

1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select PRACH according to TS 25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

1> not prohibit periodical status transmission in RLC;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> ignore that IE and stop using DRX.

If the UE after the state transition remains in CELL_FACH state; and

- a C-RNTI is stored in the variable C_RNTI;

or

- the UE after the state transition moves to another state than the CELL_FACH state:

the UE shall:

1> in case of a cell update procedure:

2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry.

1> transmit a response message as specified in TS 25.331 subclause 8.3.1.7;

1> in case of a cell update procedure:

2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

1> set the variable CELL_UPDATE_STARTED to FALSE;

1> clear the variable SECURITY_MODIFICATION.

…

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI":

the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New C-RNTI"; and
- does not include the IE "New U-RNTI":

the UE shall:

1> transmit no response message.

…

When the UE receives a UTRAN MOBILITY INFORMATION message, it shall:

1> act on received information elements as specified in TS 25.331 subclause 8.6;

1> if the IE "UE Timers and constants in connected mode" is present:

2> store the values of the IE "UE Timers and constants in connected mode" in the variable TIMERS_AND_CONSTANTS, replacing any previously stored value for each timer and constant; and

2> for each updated timer value:

3> start using the new value next time the timer is started;

2> for each updated constant value:

3> start using the new value directly;

1> set the IE "RRC transaction identifier" in the UTRAN MOBILITY INFORMATION CONFIRM message to the value of "RRC transaction identifier" in the entry for the UTRAN MOBILITY INFORMATION message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC;

…

Reference

3GPP TS 25.331 clause 8.3.1, 8.3.3.3.

8.3.1.3.3 Test purpose

1. To confirm that the UE executes a periodical cell update procedure following the expiry of timer T305.

8.3.1.3.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 2 are active.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.3

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-69	-69	-60
P-CCPCH RSCP (TDD)	dBm	-60	-69	-69	-60

Table 8.3.1.3 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE is in CELL_FACH state. When the UE detects the expiry of timer T305 according to the settings in system information, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH with a cause indicating periodical cell updating. SS replies with a CELL UPDATE CONFIRM message, and IE "RRC State Indicator" is set to "CELL_FACH". SS verifies that the UE does not transmit any uplink message. SS then waits for T305 to expire again. The UE shall send another CELL UPDATE message to report periodic cell updating. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes the IEs "new C-RNTI", "new U-RNTI" to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. Next, SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to "infinity", to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.3, causing the UE to enter CELL_FACH state in cell 2 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. SS then monitors the uplink CCCH for a period of 60 minutes (ideally the SS should monitor this up to the maximum possible value for timer T305 (720 minutes), but for practical reasons 60 minutes (twice default timer of 30 minutes) is regarded as being sufficient) and verifies that no CELL_UPDATE message is received. After this, the SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to '5', to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.3, causing the UE to enter CELL_FACH state in cell 1 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. UE shall resume periodic cell updating procedure and transmit CELL_UPDATE message after T305 (5 minutes) expires.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state. SS waits until T305 has expired.
2	→		CELL UPDATE	IE "Cell update cause" shall be set to "periodical cell updating"
3	←		CELL UPDATE CONFIRM	No RNTI identities are given. No information on PRACH and S-CCPCH are provided.
4				SS verifies that no uplink message is received from UE. SS waits for another period to allow T305 to expire.
5	→		CELL UPDATE	Set to "periodical cell update" in IE "Cell update cause" upon the expiry of timer T305.
6	←		CELL UPDATE CONFIRM	Including IEs "new C-RNTI", "new U-RNTI" and IE "RRC State Indicator" is set to "CELL_FACH"
7	→		UTRAN MOBILITY INFORMATION CONFIRM	
8	←		UTRAN MOBILITY INFORMATION	IE "T305" is set to Infinity.
9	→		UTRAN MOBILITY INFORMATION CONFIRM	
10				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.3
11	→		CELL UPDATE	IE "Cell update cause" shall be set to "cell reselection".
12	←		CELL UPDATE CONFIRM	
12a	→		UTRAN MOBILITY INFORMATION CONFIRM	
13				SS waits for 60 minutes and checks that no CELL UPDATE message is transmitted on uplink PRACH channel.
14	←		UTRAN MOBILITY INFORMATION	IE "T305" is set to '5.
15	→		UTRAN MOBILITY INFORMATION CONFIRM	
16				SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.3
17	→		CELL UPDATE	IE "Cell update cause" shall be set to "cell reselection".
18	←		CELL UPDATE CONFIRM	
18a	→		UTRAN MOBILITY INFORMATION CONFIRM	
19	→		CELL UPDATE	UE shall transmit this message with "cell update cause" set to "periodical cell updating" after T305 expires.
20	←		CELL UPDATE CONFIRM	
21	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

CELL UPDATE (Step 2 and 5)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'periodical cell updating'

CELL UPDATE (Step 11 and 17)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to same bit string as in IE "S-RNTI" in IE "U-RNTI" of the CELL UPDATE CONFIRM message sent in step 6.
Cell Update Cause	Check to see if set to "cell reselection"

CELL UPDATE CONFIRM (Step 3 and 20)

Use the same message sub-type found in TS 34.108, clause 9.

CELL UPDATE CONFIRM (Step 6, 12 and 18)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	Set to '0000 0000 0001'
- S-RNTI	Set to an arbitrary string different from '0000 0000 0000 0000 0001'
New C-RNTI	'1010 1010 1010 1010'

CELL UPDATE (Step 19)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to same bit string as in IE "S-RNTI" in IE "U-RNTI" of the CELL UPDATE CONFIRM message sent in step 6.
Cell Update Cause	Check to see if set to 'periodical cell updating'

UTRAN MOBILITY INFORMATION (Step 8)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	
- T305	infinity

UTRAN MOBILITY INFORMATION (Step 14)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode - T305	 5

8.3.1.3.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305 and then transmits a CELL UPDATE message setting value "periodical cell update" into IE "Cell update cause".

After step 3 the UE shall not send any uplink message as a response to CELL UPDATE CONFIRM message sent in step 3.

After step 4 the UE shall send a CELL UPDATE message, specifying the cell updating cause to be "periodical cell update".

After step 6 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

After step 8, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 10, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 12, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

Between step 12a and 14, the UE shall not transmit any CELL UPDATE message.

After step 14, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 16, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 18, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 18a, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "periodical cell update" on the uplink CCCH.

8.3.1.3a Cell Update: periodical cell update in CELL_FACH (1.28 Mcps TDD Only)

8.3.1.3a.1 Definition

8.3.1.3a.2 Conformance requirement

UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

…

1> RLC unrecoverable error:

…

1> Cell reselection:

…

1> Periodical cell update:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_FACH or CELL_PCH state; and

2> if the timer T305 expires; and

2> if the criteria for "in service area" as specified in TS 25.331 subclause 8.5.5.2 is fulfilled; and

2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":

3> perform cell update using the cause "periodical cell update".

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

…

1> move to CELL_FACH state, if not already in that state;

…

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3a;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

1> set the IE "Cell update cause" corresponding to the cause specified in TS 25.331 subclause 8.3.1.2 that is valid when the CELL UPDATE message is submitted to lower layers for transmission;

NOTE: During the time period starting from when a cell update procedure is initiated by the UE until when the procedure ends, additional CELL UPDATE messages may be transmitted by the UE with different causes.

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

…

When the UE receives a CELL UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or

- if the message is received on DCCH:

the UE shall:

1> stop timer T302;

…

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following:

1> enter a state according to TS 25.331 subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

If the UE after state transition remains in CELL_FACH state, it shall

1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select PRACH according to TS 25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

1> not prohibit periodical status transmission in RLC;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> ignore that IE and stop using DRX.

If the UE after the state transition remains in CELL_FACH state; and

- a C-RNTI is stored in the variable C_RNTI;

or

- the UE after the state transition moves to another state than the CELL_FACH state:

the UE shall:

1> in case of a cell update procedure:

2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry.

1> transmit a response message as specified in TS 25.331 subclause 8.3.1.7;

1> in case of a cell update procedure:

2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

1> set the variable CELL_UPDATE_STARTED to FALSE;

1> clear the variable SECURITY_MODIFICATION.

…

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and

- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI":

the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New C-RNTI"; and
- does not include the IE "New U-RNTI":

the UE shall:

1> transmit no response message.

…

When the UE receives a UTRAN MOBILITY INFORMATION message, it shall:

1> act on received information elements as specified in TS 25.331 subclause 8.6;

1> if the IE "UE Timers and constants in connected mode" is present:

2> store the values of the IE "UE Timers and constants in connected mode" in the variable TIMERS_AND_CONSTANTS, replacing any previously stored value for each timer and constant; and

2> for each updated timer value:

3> start using the new value next time the timer is started;

2> for each updated constant value:

3> start using the new value directly;

1> set the IE "RRC transaction identifier" in the UTRAN MOBILITY INFORMATION CONFIRM message to the value of "RRC transaction identifier" in the entry for the UTRAN MOBILITY INFORMATION message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC;

…

Reference

3GPP TS 25.331 clause 8.3.1, 8.3.3.3.

8.3.1.3a.3 Test purpose

1. To confirm that the UE executes a periodical cell update procedure following the expiry of timer T305.

2. To confirm that the UE can indicate the UpPCH shifting position according to a CELL UPDATE CONFIRM message received from the SS and complete the process.

8.3.1.3a.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 2 are active.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.3a

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-69	-69	-60
P-CCPCH RSCP (TDD)	dBm	-60	-69	-69	-60

Table 8.3.1.3a illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE is in CELL_FACH state. When the UE detects the expiry of timer T305 according to the settings in system information, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH with a cause indicating periodical cell updating. SS replies with a CELL UPDATE CONFIRM message, and IE "RRC State Indicator" is set to "CELL_FACH". SS verifies that the UE does not transmit any uplink message. SS then waits for T305 to expire again. The UE shall send another CELL UPDATE message to report periodic cell updating. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes the IEs "new C-RNTI", "new U-RNTI" to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. Next, SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to "infinity", to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.3a, causing the UE to enter CELL_FACH state in cell 2 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. SS then monitors the uplink CCCH for a period of 60 minutes (ideally the SS should monitor this up to the maximum possible value for timer T305 (720 minutes), but for practical reasons 60 minutes (twice default timer of 30 minutes) is regarded as being sufficient) and verifies that no CELL_UPDATE message is received. After this, the SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to '5', to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.3a, causing the UE to enter CELL_FACH state in cell 1 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. UE shall resume periodic cell updating procedure and transmit CELL_UPDATE message after T305 (5 minutes) expires. SS should transmit CELL UPDATE CONFIRM. If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails. After T305 (5 minutes) expires, UE transmits CELL UPDATE at CELL1. SS indicates that UE is in CELL_DCH state and changes the carrier and UpPCH shifting position. UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state. SS waits until T305 has expired.
2	→		CELL UPDATE	IE "Cell update cause" shall be set to "periodical cell updating"
3	←		CELL UPDATE CONFIRM	No RNTI identities are given. No information on PRACH and S-CCPCH are provided.
4				SS verifies that no uplink message is received from UE. SS waits for another period to allow T305 to expire.
5	→		CELL UPDATE	Set to "periodical cell update" in IE "Cell update cause" upon the expiry of timer T305.
6	←		CELL UPDATE CONFIRM	Including IEs "new C-RNTI", "new U-RNTI" and IE "RRC State Indicator" is set to "CELL_FACH"
7	→		UTRAN MOBILITY INFORMATION CONFIRM	
8	←		UTRAN MOBILITY INFORMATION	IE "T305" is set to Infinity.
9	→		UTRAN MOBILITY INFORMATION CONFIRM	
10				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.3a
11	→		CELL UPDATE	IE "Cell update cause" shall be set to "cell reselection".
12	←		CELL UPDATE CONFIRM	
12a	→		UTRAN MOBILITY INFORMATION CONFIRM	
13				SS waits for 60 minutes and checks that no CELL UPDATE message is transmitted on uplink PRACH channel.
14	←		UTRAN MOBILITY INFORMATION	IE "T305" is set to '5.
15	→		UTRAN MOBILITY INFORMATION CONFIRM	
16				SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.3a
17	→		CELL UPDATE	IE "Cell update cause" shall be set to "cell reselection".
18	←		CELL UPDATE CONFIRM	
18a	→		UTRAN MOBILITY INFORMATION CONFIRM	
19	→		CELL UPDATE	UE shall transmit this message with "cell update cause" set to "periodical cell updating" after T305 expires.
20	←		CELL UPDATE CONFIRM	
21			Void	
22	→		CELL UPDATE	IE "Cell update cause" shall be set to "periodical cell updating"
23	←		CELL UPDATE CONFIRM	UE is in CELL_DCCH state at cell1 and specify the frequency info and UpPCH shifting position.

24	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE transmits the message on DPCH channel .
25	←→	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 3(TDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Qrxlevmin	- 81dBm
Sintrasearch	21db
Sintersearch	21db
-v4b0NonCriticalExtensions	
-sysInfoType3-v4b0ext	
- mapping-LCR	
- MappingFunctionParameterList	
- MappingFunctionParameter	
- mapParameter1	22

CELL UPDATE (Step 2 and 5)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001' Check to see if set to 'periodical cell updating'

CELL UPDATE (Step 11 and 17)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to '0000 0000 0001' Check to see if set to same bit string as in IE "S-RNTI" in IE "U-RNTI" of the CELL UPDATE CONFIRM message sent in step 6. Check to see if set to "cell reselection"

CELL UPDATE CONFIRM (Step 3 and 20)

Use the same message sub-type found in TS 34.108, clause 9.

CELL UPDATE CONFIRM (Step 6, 12 and 18)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	Set to '0000 0000 0001'
- S-RNTI	Set to an arbitrary string different from '0000 0000 0000 0000 0001'
New C-RNTI	'1010 1010 1010 1010'

CELL UPDATE (Step 19)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to same bit string as in IE "S-RNTI" in IE "U-RNTI" of the CELL UPDATE CONFIRM message sent in step 6.
Cell Update Cause	Check to see if set to 'periodical cell updating'

UTRAN MOBILITY INFORMATION (Step 8)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	
- T305	infinity

UTRAN MOBILITY INFORMATION (Step 14)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	
- T305	5

CELL UPDATE CONFIRM (Step23)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
PhysicalChannelReconfigurationn-r4-TDD128-add-ext-IEs	
PhysicalChannelReconfiguration -r4-TDD128-add-ext	
UpPCHpositionInfo	22

8.3.1.3a.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305 and then transmits a CELL UPDATE message setting value "periodical cell update" into IE "Cell update cause".

After step 3 the UE shall not send any uplink message as a response to CELL UPDATE CONFIRM message sent in step 3.

After step 4 the UE shall send a CELL UPDATE message, specifying the cell updating cause to be "periodical cell update".

After step 6 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

After step 8, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 10, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 12, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

Between step 12a and 14, the UE shall not transmit any CELL UPDATE message.

After step 14, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 16, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 18, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 18a, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "periodical cell update" on the uplink CCCH.

8.3.1.4 Cell Update: periodical cell update in CELL_PCH

8.3.1.4.1 Definition

8.3.1.4.2 Conformance requirement

UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

…

1> RLC unrecoverable error:

…

1> Cell reselection:

…

1> Periodical cell update:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_FACH or CELL_PCH state; and

2> if the timer T305 expires; and

2> if the criteria for "in service area" as specified in TS 25.331 subclause 8.5.5.2 is fulfilled; and

2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":

3> perform cell update using the cause "periodical cell update".

When the UE receives a UTRAN MOBILITY INFORMATION message, it shall:

1> act on received information elements as specified in TS 25.331 subclause 8.6;

1> if the IE "UE Timers and constants in connected mode" is present:

2> store the values of the IE "UE Timers and constants in connected mode" in the variable TIMERS_AND_CONSTANTS, replacing any previously stored value for each timer and constant; and

2> for each updated timer value:

3> start using the new value next time the timer is started;

2> for each updated constant value:

3> start using the new value directly;

1> set the IE "RRC transaction identifier" in the UTRAN MOBILITY INFORMATION CONFIRM message to the value of "RRC transaction identifier" in the entry for the UTRAN MOBILITY INFORMATION message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC;

…

Reference

3GPP TS 25.331 clause 8.3.1, 8.3.3.3.

8.3.1.4.3 Test purpose

1. To confirm that the UE, in CELL_PCH state, executes a cell update procedure after the expiry of timer T305.

8.3.1.4.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 2 are active.

UE: CELL_PCH (state 6-12) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.4

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-69	-69	-60
P-CCPCH RSCP (TDD)	dBm	-60	-69	-69	-60

Table 8.3.1.4 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE starts from CELL_PCH state. When the UE detects the expiry of periodic cell updating timer T305 according to the system information, the UE moves to CELL_FACH state. It shall transmit a CELL UPDATE message on the uplink CCCH and set the value "periodical cell update" into IE "Cell update cause". SS answers with a CELL UPDATE CONFIRM message on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to "infinity", to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.4, causing the UE to enter CELL_FACH state in cell 2 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM with IE "RRC state indicator" set to "CELL_PCH" on the downlink CCCH. Then UE shall enter CELL_PCH state. SS then monitors the uplink CCCH for a period of 60 minutes (ideally the SS should monitor this up to the maximum possible value for timer T305 (720 minutes), but for practical reasons 60 minutes (twice default timer of 30 minutes) is regarded as being sufficient) and verifies that no CELL_UPDATE message is received. SS then configures its downlink transmission power settings according to columns "T0" in table 8.3.1.4, causing the UE to enter CELL_FACH state in cell 1 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. Next, SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to "5", to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.4, causing the UE to enter CELL_FACH state in cell 2 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM with IE "RRC state indicator" set to "CELL_PCH" on the downlink CCCH. Then UE shall enter CELL_PCH state. After T305 expires, UE shall transmit CELL UPDATE message with IE "cell update cause" set to "periodical cell update". SS shall transmit CELL UPDATE CONFIRM message on the downlink CCCH to end the procedure.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_PCH state. SS waits until T305 has expired. Wait for CELL UPDATE message and then verify that the time of arrival of this message is in the range of T305 value +/- 10 % after it entered CELL_PCH state
2	→		CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "periodical cell update".
3	←		CELL UPDATE CONFIRM	
3a	→		UTRAN MOBILITY INFORMATION CONFIRM	
4	←		UTRAN MOBILITY INFORMATION	IE "T305" is set to 'infinity'.
5	→		UTRAN MOBILITY INFORMATION CONFIRM	
6				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.4.
7	→		CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection".
8	←		CELL UPDATE CONFIRM	UE enters CELL_PCH state after receiving this message.

Step	Direction		Message	Comment
	UE	SS		
9				SS waits for 60 minutes and checks that no CELL UPDATE message is transmitted on uplink PRACH channel.
10				SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.4.
11	→		CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection".
12	←		CELL UPDATE CONFIRM	
12a	→		UTRAN MOBILITY INFORMATION CONFIRM	
13	←		UTRAN MOBILITY INFORMATION	IE "T305" is set to '5'.
14	→		UTRAN MOBILITY INFORMATION CONFIRM	
15				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.4.
16	→		CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection".
17	←		CELL UPDATE CONFIRM	UE enters CELL_PCH state after receiving this message.
18				SS wait for T305 timer to expire
19	→		CELL UPDATE	IE "Cell update cause" shall be set to "periodical cell update".
20	←		CELL UPDATE CONFIRM	
21	←→		CALL C.4	If the test result of C.4 indicates that UE is in CELL_PCH state, the test passes, otherwise it fails.

Specific Message Contents

CELL UPDATE (Step 2 and 19)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'periodical cell update'

CELL UPDATE (Step 7, 11 and 16)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to "cell reselection"

CELL UPDATE CONFIRM (Step 3 and 12)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

CELL UPDATE CONFIRM (Step 8, 17 and 20)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC state indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

UTRAN MOBILITY INFORMATION (Step 4 and 13)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	
- T305	Set to 'infinity' in step 4 and '5' in step 13

8.3.1.4.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, it shall then move to CELL_FACH state and transmits a CELL UPDATE message with the IE "Cell update cause" set to "periodical cell update".

After step 3, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 4, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 6, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 8 and before step 10, the UE shall not transmit any CELL UPDATE messages.

After step 10, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 12, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 13, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 15, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 18 the UE shall transmit a CELL UPDATE message stating the cell update cause to be periodic updating.

8.3.1.5 Cell Update: UL data transmission in URA_PCH

8.3.1.5.1 Definition

8.3.1.5.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit :

3> perform cell update using the cause "uplink data transmission".

…

Reference

3GPP TS 25.331 clause 8.3.1 and 8.1.2

8.3.1.5.3 Test purpose

1. To confirm that the UE executes a cell update procedure when the UE transmits uplink data if the UE is in URA_PCH state.

8.3.1.5.4 Method of test

Initial Condition

System Simulator: 1cell

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

The UE has been registered in both CS and PS domains.

Test Procedure

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message with IE "RRC State Indicator" set to "URA_PCH". The UE shall reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and move to URA_PCH state. The SS transmits a PAGING TYPE 1 message which includes a matched U-RNTI and the optional IE "CN originated page to connected mode UE". The UE then moves to CELL_FACH state and transmits a CELL UPDATE message to the SS on the uplink CCCH, with the IE "Cell update cause" set to value "uplink data transmission". After receiving such a message, SS transmits CELL UPDATE CONFIRM message on downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. The UE shall stay in CELL_FACH state and transmit an INITIAL DIRECT TRANSFER message using AM RLC on DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state.
2			Void	
3			Void	
4	←		PHYSICAL CHANNEL RECONFIGURATION	IE "RRC State Indicator" set to "URA_PCH"
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE moves to URA_PCH state.
5a	←		PAGING TYPE 1	Includes Matched identifier and optional IE “CN originated page to connected mode UE"
6	→		CELL UPDATE	The UE shall move to CELL FACH state with the message set to "uplink data transmission" in IE "Cell update cause".
7	←		CELL UPDATE CONFIRM	See message content.
7a	→		UTRAN MOBILITY INFORMATION CONFIRM	
8	→		INITIAL DIRECT TRANSFER	Response to the paging message sent in step 5a
9	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_FACH in PS", with the following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator URA identity UTRAN DRX cycle length coefficient	URA_PCH 0000 0000 0000 0001B 3

PAGING TYPE 1 (Step 5a)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to the previously assigned SRNC identity
- S-RNTI	Set to previously assigned S-RNTI
- CN originated page to connected mode UE	
-Paging cause	Terminating Call supported by the UE in the CS domain
-CN domain identity	CS Domain
-Paging record type identifier	Set to "IMSI (GSM-MAP)" for UEs supporting GSM-MAP core network type or "IMSI (DS-41)" for UEs supporting ANSI-41 core network type.
BCCH modification info	Not Present

CELL UPDATE (Step 6)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'uplink data transmission'

CELL UPDATE CONFIRM (Step 7)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	Set to an arbitrary string different from '1010 1010 1010 1010'

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting GSM-MAP core networks

Check to see if the same message type found in TS 34.108 clause 9 is received, with the following exceptions:

Information Element	Value/remark
CN domain identity	CS domain
Intra Domain NAS Node Selector	
- CHOICE version	R99
-- CHOICE CN type	GSM
--- CHOICE Routing basis	Local(P)TMSI
---- Routing parameter	This bit string is set to bits b14 through b23 of the TMSI. The TMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI. The first/ leftmost/ most significant bit of the bit string contains bit b23 of the TMSI
--- Entered parameter	Not checked
NAS message	Not checked

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
CN domain identity	CS Domain
Intra Domain NAS Node Selector	
- CHOICE version	ANSI-41 : Bitstring(14), all bits set to 0
NAS message	Not checked
START	Not checked
Measured results on RACH	Not checked

8.3.1.5.5 Test requirement

After step 4, UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and move to URA_PCH state.

After step 5a, the UE shall move to CELL_FACH state to initiate a cell update procedure and transmits a CELL UPDATE message which is set to "uplink data transmission" in IE "Cell update cause".

After step 7, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 7a, UE shall transmit INITIAL DIRECT TRANSFER message to SS using AM RLC on DCCH.

8.3.1.6 Cell Update: UL data transmission in CELL_PCH

8.3.1.6.1 Definition

8.3.1.6.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

…

Reference

3GPP TS 25.331 clause 8.3.1 and 8.1.2

8.3.1.6.3 Test purpose

1. To confirm that the UE executes a cell update procedure when the UE transmits uplink data if the UE is in CELL_PCH state.

8.3.1.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

The UE is registered in both CS and PS domains.

Test Procedure

The UE is in the CELL_FACH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message with IE "RRC State Indicator" set to "CELL_PCH". The UE shall reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and move to CELL_PCH state. The SS transmits a PAGING TYPE 1 message which includes a matched U-RNTI and the optional IE "CN originated page to connected mode UE". The UE then moves to CELL_FACH state and transmits a CELL UPDATE message to the SS on the uplink CCCH, with the IE "Cell update cause" set to value "uplink data transmission". After receiving such a message, SS transmits a CELL UPDATE CONFIRM message on downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. The UE shall stay in CELL_FACH state and transmit an INITIAL DIRECT TRANSFER message using AM RLC on DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state.
2			Void	
3			Void	
4	←		PHYSICAL CHANNEL RECONFIGURATION	IE "RRC State Indicator" set to "CELL_PCH"
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE moves to CELL_PCH state.
5a	←		PAGING TYPE 1	Includes Matched identifier and optional IE “CN originated page to connected mode UE"
6	→		CELL UPDATE	The UE moves to CELL FACH state and transmit this message which is set to "uplink data transmission" in IE "Cell update cause".
7	←		CELL UPDATE CONFIRM	See message content .
7a	→		UTRAN MOBILITY INFORMATION CONFIRM	
8	→		INITIAL DIRECT TRANSFER	Response to the paging message sent in step 5a
9	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_FACH in PS", with the following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

PAGING TYPE 1 (Step 5a)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to the previously assigned SRNC identity
- S-RNTI	Set to previously assigned S-RNTI
- CN originated page to connected mode UE	
-Paging cause	Terminating Call supported by the UE in the CS domain
-CN domain identity	CS Domain
-Paging record type identifier	Set to "IMSI (GSM-MAP)" for UEs supporting GSM-MAP core network type or "IMSI (DS-41)" for UEs supporting ANSI-41 core network type.
BCCH modification info	Not Present

CELL UPDATE (Step 6)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'uplink data transmission'

CELL UPDATE CONFIRM (Step 7)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	Set to an arbitrary string different from '1010 1010 1010 1010'

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting GSM-MAP core networks

Check to see if the same message type found in TS 34.108 clause 9 is received, with the following exceptions:

Information Element	Value/remark
CN domain identity	CS domain
Intra Domain NAS Node Selector	
- CHOICE version	R99
-- CHOICE CN type	GSM
--- CHOICE Routing basis	Local(P)TMSI
---- Routing parameter	This bit string is set to bits b14 through b23 of the TMSI. The TMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI. The first/ leftmost/ most significant bit of the bit string contains bit b23 of the TMSI
--- Entered parameter	Not checked
NAS message	Not checked

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
CN domain identity	CS Domain
Intra Domain NAS Node Selector	
- CHOICE version	ANSI-41 : Bitstring(14), all bits set to 0
NAS message	Not checked
START	Not checked
Measured results on RACH	Not checked

8.3.1.6.5 Test requirement

After step 4, UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and move to CELL_PCH state.

After step 5, the UE shall move to CELL_FACH state to initiate a cell update procedure and transmits a CELL UPDATE message which is set to "uplink data transmission" in IE "Cell update cause".

After step 7, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 7a, UE shall transmit a INITIAL DIRECT TRANSFER message to SS using AM RLC on DCCH.

8.3.1.7 Void

8.3.1.8 Void

8.3.1.9 Cell Update: re-entering of service area after T305 expiry and being out of service area

8.3.1.9.1 Definition

8.3.1.9.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_FACH or CELL_PCH state; and

2> if the UE has been out of service area and re-enters service area before T307 or T317 expires:

3> perform cell update using the cause "re-entering service area".

…

When the T305 expires and the UE detects that it is "out of service area" as specified in TS 25.331 subclause 8.5.5.1, the UE shall

1> start timer T307;

…

If the UE detects "in service area" according to TS 25.331 subclause 8.5.5.2 and timer T307 or T317 is running, the UE shall:

1> check the value of V302; and

1> if V302 is equal to or smaller than N302:

2> in case of a cell update procedure:

3> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the CELL UPDATE message for transmission on the uplink CCCH.

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

…

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.9.3 Test purpose

1. To confirm that the UE performs a cell search after experiencing an "out of service area" condition.
2. To confirm that the UE initiates cell updating procedure if it manages to re-enter the service area.

8.3.1.9.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108, using the specific message contents as specified below.

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
T305	5 minutes
T307	50 seconds
T317	600 seconds

Specific timer tolerances

Use the same timer tolerances found in subclause 4.2.3 of TS 34.108, with the following exceptions.

T305: +/- 10 s

T307: +/- 2 s

Test Procedure

Table 8.3.1.9

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.1.9 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in the CELL_FACH state. The content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.9 so that S<0. The UE shall detect that it is out of service area. Following the expiry of periodic cell updating timer T305 according to the system information, and within the time interval equivalent to T307 timer value, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.9 so that S>0. The UE shall find that it is back in service area, and transmit a CELL UPDATE message to the SS on the uplink CCCH. In this message, the IE "Cell update cause" shall be set to "re-entered service area". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message with the IE "RRC State Indicator" set "CELL_PCH" on the downlink DCCH. The UE shall enter CELL_PCH state. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.9 so that S<0. Following the expiry of periodic cell updating timer T305 according to the system information, the UE shall detect that it is out of service area. Within the time interval equivalent to T307 timer value, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.9 so that S>0. The UE shall find that it is back in service area, move to CELL_FACH and transmits a CELL UPDATE message to the SS on the uplink CCCH. In this message, the IE "Cell update cause" shall be set to "re-entered service area". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message on the downlink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state of cell 1.
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		SYSTEM INFORMATION CHANGE INDICATION	
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.9 so that its S value falls below 0.
3				The UE shall detect an "out of service" condition and it shall search for other cells to camp on. Upon expiry of timer T305, UE starts T307 timer..
4				SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.9.
5	→		CELL UPDATE	The value "re-entered service area" shall be found in IE "Cell update cause" in this message
6	←		CELL UPDATE CONFIRM	"RRC State Indicator" is set to "CELL_PCH"
7				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.9 so that its S value falls below 0 and waits 5 minutes and 10 seconds until T305 has expired.
8				SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.9.
9	→		CELL UPDATE	UE shall move to CELL_FACH. It shall transmit this message with cell update cause set to "re-entered service area"
10	←		CELL UPDATE CONFIRM	

11	←→	CALL C.4	If the test result of C.4 indicates that UE is in CELL_PCH state, the test passes, otherwise it fails.

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	A valid MIB value tag as defined in TS 25.331 that is different from the previous value.
SIB 3 Cell Value tag	Set to (Current SIB3 value tag + 1)
SIB 4 Cell Value tag	Set to (Current SIB4 value tag + 1)

SYSTEM INFORMATION BLOCK TYPE 3 and 4 (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
Qrxlevmin	-35 (-69 dBm)

SYSTEM INFORMATION CHANGE INDICATION (Step 1b)

Information Element	Value/remark
Message Type	
BCCH modification info	
MIB Value tag	Set equal to Value tag sent in modified MIB in step 1a.

CELL UPDATE (Step 5 and 9)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 're-entered service area'

CELL UPDATE CONFIRM (Step 6 and 10)

Use the same message sub-type found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

8.3.1.9.5 Test requirement

After step 4 the UE shall transmit a CELL UPDATE message in which the IE "Cell update cause" is set to the value "re-entered service area".

After step 8 the UE shall move to CELL_FACH and then transmit a CELL UPDATE message, with the IE "Cell Update Cause" set to "re-entered service area".

8.3.1.10 Cell Update: expiry of T307 after T305 expiry and being out of service area

8.3.1.10.1 Definition

8.3.1.10.2 Conformance requirement

When the T307 expires, the UE shall:

1> move to idle mode;

1> release all dedicated resources;

1> perform other actions when entering idle mode from connected mode as specified in TS 25.331 subclause 8.5.2;

1> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.10.3 Test purpose

1 To confirm that the UE moves to idle mode after the expiry of T307, indicating that it is out of service area when attempting to perform a periodic cell updating procedure.

8.3.1.10.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Timer T305 is set to 5min.

Test Procedure

Table 8.3.1.10

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.1.10 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in CELL_FACH state at the start of the test. Before the expiry of periodic cell updating timer T305, the content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. After T305 expires, UE shall transmit CELL UPDATE message with IE "cell update cause" set to "periodical cell update". SS shall transmit CELL UPDATE CONFIRM message. Now the UE and SS are synchronized. Immediately after the cell update procedure is finalized, the SS starts a delay timer T_{delay} (see below for limits on the timer value). When T_{delay} expires the SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.10 so that S<0 and this results in a "out of service area" condition. The SS continues to listen to the uplink channel to detect possible attempts to perform a cell updating procedure. The UE shall not send any CELL UPDATE message on the uplink CCCH, instead it triggers timer T307 after expiry of T305. After the expiry of timer T305+T307+10% margin since completion of the cell update procedure, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.10 so that S>0, the UE shall enter idle state. SS waits for 60s and then calls for generic procedure C.1 to check that UE is in idle mode state.

NOTE 1: The value chosen for Tdelay should be midway between the following logical minimum and maximum values:

Minimum > T305 + T307 – T317

Maximum < T305

NOTE 2: TS 25.331 (from June 2003) specifies that the UE should treat any value of T317 received from UTRAN as though it is equal to infinity. Nevertheless, the value of T317 used in Note 1 should be the value broadcast in SIB1 by the SS (or the implied default value if none is broadcast).

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state.
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		SYSTEM INFORMATION CHANGE INDICATION	
1c	→		CELL UPDATE	IE "Cell update cause" shall be set to "periodical cell update".
1d	←		CELL UPDATE CONFIRM	
1e				SS waits T_{delay} (see above)
2a				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.10 so that the cell is no longer suitable for camping. The UE shall detect that it is out of service area and refrains from transmitting CELL UPDATE message due to periodic cell updating.
2b				SS waits a further (T305+T307- T_{delay}) +10% for UE to enter idle mode.
3				The UE detects the expiry of timer T305 and it searches for other cells to camp on. After the expiry of timer T307, the UE shall enter idle mode. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.10 so that the cell is suitable for camping. SS waits for 60s.
4	←→		CALL C.1	If the test result of C.1 indicates that UE is in idle mode state, the test passes, otherwise it fails.

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	A valid MIB value tag as defined in TS 25.331 that is different from the previous value.
SIB 3 Cell Value tag	Set to (Current SIB3 value tag + 1)
SIB 4 Cell Value tag	Set to (Current SIB4 value tag + 1)

SYSTEM INFORMATION BLOCK TYPE 3 and 4 (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
Qrxlevmin	-35 (-69 dBm)

SYSTEM INFORMATION CHANGE INDICATION (Step 1b)

Information Element	Value/remark
Message Type	
BCCH modification info	
MIB Value tag	Set equal to Value tag sent in modified MIB in step 1a.

CELL UPDATE (Step 1c)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'periodical cell updating'

8.3.1.10.5 Test requirement

After step 3 the UE shall move to idle mode.

8.3.1.11 Cell Update: Success after T302 time-out

8.3.1.11.1 Definition

8.3.1.11.2 Conformance requirement

If any or several of the following conditions are true:

- expiry of timer T302;

…

the UE shall:

1> check whether it is still in "in service area";

1> in case of a cell update procedure:

2> clear any entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.

If the UE detects "in service area" if it has not entered idle mode, and:

1> if V302 is equal to or smaller than N302, the UE shall:

2> in case of a cell update procedure:

3> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the CELL UPDATE message for transmission on the uplink CCCH.

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302, the UE shall:

…

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.11.3 Test purpose

1. To confirm that the UE repeats the transmission of CELL UPDATE message after failing to receive any response from the SS before T302 timer expires.

8.3.1.11.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

At the start of the test, the UE is brought to CELL_FACH state. When the UE detects the expiry of periodic cell updating timer T305 according to the system information, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH. The IE "Cell update cause" in this message shall be set to "periodical cell update". SS ignores this message, and the UE shall then re-transmit a CELL UPDATE message after the expiry of timer T302. When the SS has received (N302+1) such messages, it transmits a CELL UPDATE CONFIRM message with new values for "C-RNTI" to the UE. Finally, the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE starts from CELL_FACH state. SS initializes its internal counter K to 0 and waits until the expiry of T305 timer.
2	→		CELL UPDATE	The value "periodical cell update" shall be set in IE "Cell update cause".
3				If K is equal to N302 then proceeds to step 5.
4				SS increments counter K, transmits no response to the UE and waits for an additional period equal to the value of timer T302. The next step is step 2.
5	←		CELL UPDATE CONFIRM	The message includes IEs "new C-RNTI". The IE "RRC State Indicator" is set to "CELL_FACH".
6	→		UTRAN MOBILITY INFORMATION CONFIRM	
7	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

CELL UPDATE (Step 2)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Periodic cell updating'

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
New C-RNTI	Set to an arbitrary string different from '1010 1010 1010 1010'

8.3.1.11.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305 then transmit a CELL UPDATE message on the uplink CCCH, setting "periodical cell update" into IE "Cell update cause".

After step 2 the UE shall re-transmits a CELL UPDATE message after the expiry of timer T302. A total of (N302+1) transmissions of CELL UPDATE message shall be detected in SS.

After step 5 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH and stay at CELL_FACH state.

8.3.1.12 Cell Update: Failure (After Maximum Re-transmissions)

8.3.1.12.1 Definition

8.3.1.12.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

…

1> Periodical cell update:

…

2> if the UE is in CELL_FACH or CELL_PCH state; and

2> if the timer T305 expires; and

2> if the criteria for "in service area" as specified in subclause 8.5.5.2 in TS 25.331 is fulfilled; and

2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":

3> perform cell update using the cause "periodical cell update".

…

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

…

The UE shall set the IEs in the CELL UPDATE message as follows:

1> set the IE "Cell update cause" corresponding to the cause specified in subclause 8.3.1.2 in TS 25.331 that is valid when the CELL UPDATE message is submitted to lower layers for transmission;

…

If any or several of the following conditions are true:

- expiry of timer T302;

…

the UE shall:

1> stop T302 if it is running;

…

1> check whether it is still in "in service area" (see subclause 8.5.5.2) in TS 25.331;

…

1> in case of a cell update procedure:

2> clear any entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.

…

If the UE detects "in service area" if it has not entered idle mode, and:

1> if V302 is equal to or smaller than N302, the UE shall:

…

1> if V302 is greater than N302, the UE shall:

…

2> in case of a cell update procedure:

3> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

…

2> release all its radio resources;

2> enter idle mode;

2> other actions the UE shall perform when entering idle mode from connected mode are specified in TS 25.331subclause 8.5.2;

2> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1.2, 8.3.1.3, 8.3.1.1.2.

8.3.1.12.3 Test purpose

1. To confirm that the UE repeats the cell update procedure upon the expiry of timer T302 and moves to idle state when its internal counter V302 is greater than N302.

8.3.1.12.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_FACH (state 6-11)as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is initially in CELL_FACH state. When the UE detects the expiry of periodic cell updating timer T305, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH to perform a periodic cell updating procedure. The

SS ignores this message, and the UE shall attempt to re-transmit a CELL UPDATE message up to a maximum of (N302) times after the expiry of timer T302. After (N302) attempts of retransmission, the UE shall return to idle state. SS waits for 5s and then calls for generic procedure C.1 to check that UE is in idle mode state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state. SS sets its internal counter K=0 and waits for a period equals to timer value T305.
2	→		CELL UPDATE	The value "periodical cell update" shall be set in IE "Cell update cause".
3				SS transmits no response to the UE and increments counter K with 1.
4				SS waits for an additional period equal to T302 timer and if K is not greater than N302, then next step is step 2. Else the next step is step 5.
5				The UE shall enter idle mode state.
6	←→		CALL C.1	If the test result of C.1 indicates that UE is in idle mode state, the test passes, otherwise it fails.

Specific Message Contents

CELL UPDATE (Step 2)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Periodical cell update'

8.3.1.12.5 Test requirement

After step 1 the UE shall transmit a CELL UPDATE message on the uplink CCCH and set value "periodical cell update" into IE "Cell update cause".

After step 3 and if K is not greater than N302, the UE shall retry to transmit a CELL UPDATE message.

After step 3 and if K is greater than N302, the UE shall stop transmitting CELL UPDATE message and then enters idle state.

8.3.1.13 Cell Update: Reception of Invalid CELL UPDATE CONFIRM Message

8.3.1.13.1 Definition

8.3.1.13.2 Conformance Requirement

If the UE receives an CELL UPDATE CONFIRM message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

1> If V302 is equal to or smaller than N302, the UE shall:

2> set the variable PROTOCOL_ERROR_INDICATOR to TRUE;

2> in case of a cell update procedure:

3> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the CELL UPDATE message for transmission on the uplink CCCH.

…

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302, the UE shall:

…

2> release all its radio resources;

2> enter idle mode;

2> Other actions the UE shall perform when entering idle mode from connected mode are specified in TS 25.331 subclause 8.5.2;

2> the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1.11.

8.3.1.13.3 Test Purpose

1. To confirm that the UE retransmits a CELL UPDATE message when it receives an invalid CELL UPDATE CONFIRM message, before the number of retransmissions has reached the maximum allowed value.

8.3.1.13.4 Method of Test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH (state 6-12) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is brought to CELL_PCH state at the beginning of the test. SS pages the UE by sending a PAGING TYPE 1 message using the U-RNTI identity assigned during RRC connection establishment procedure. The UE shall transmit a CELL UPDATE message on the uplink CCCH. Upon receiving such a message, the SS replies with an invalid CELL UPDATE CONFIRM message on downlink DCCH using UM RLC. The UE shall detect the protocol error and re-transmit a CELL UPDATE message up to a maximum of N302 times. SS then transmit a valid CELL UPDATE CONFIRM message. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PAGING TYPE 1	The UE is in the CELL_PCH state. SS pages for the UE using the allocated connected mode identity (U-RNTI).
2	→		CELL UPDATE	Check that the value "paging response" is set in IE "Cell update cause".
3	←		CELL UPDATE CONFIRM	See specific message content.
4	→		CELL UPDATE	Check that the value "paging response" is set in IE "Cell update cause", the value "protocol error" is set in IE "failure cause" and the value "Message extension not comprehended" is set in IE "Protocol error information".
5	←		CELL UPDATE CONFIRM	See message content.
6	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Content

CELL UPDATE (Step 2)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'

CELL UPDATE CONFIRM (Step 3)

Use the CELL UPDATE CONFIRM message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Critical extensions	'FF'H

CELL UPDATE (Step 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'
Failure cause	Check to see if it is set to 'protocol error'
-Protocol error information	Check to see if it is set to "Message extension not comprehended"

PAGING TYPE 1 (Step 1)

Use the same message sub-type titled "TM (Packet in PS)" in default message content of TS 34.108 with following exceptions:

Information Element	Value/remark
Page record list - Paging record - CHOICE Used paging identity - U-RNTI - SRNC Identity - S-RNTI	 UTRAN identity '0000 0000 0001' '0000 0000 0000 0000 0001'

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

8.3.1.13.5 Test Requirement

After step 1 the UE shall transmit a CELL UPDATE message on the uplink CCCH, setting "paging response" into IE "Cell update cause".

After step 3 the UE shall transmit a CELL UPDATE message on the uplink CCCH, setting "paging response" into IE "Cell update cause", "protocol error" into IE "failure cause" and "Message extension not comprehended" into IE "Protocol error information".

After step 5, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

8.3.1.14 Cell Update: Incompatible simultaneous reconfiguration

8.3.1.14.1 Definition

8.3.1.14.2 Conformance Requirement

In case of a cell update procedure and if the received CELL UPDATE CONFIRM message

- includes "RB information elements"; and/or
- includes "Transport channel information elements"; and/or
- includes "Physical channel information elements"; and
- the variable ORDERED_RECONFIGURATION is set to TRUE because of an ongoing Reconfiguration procedure; and/or
- if the variable INCOMPATIBLE_SECURITY_RECONFIGURATION becomes set to TRUE of the received CELL UPDATE CONFIRM message:

the UE shall:

1> if V302 is equal to or smaller than N302:

2> if, caused by the received CELL UPDATE CONFIRM message

…

3> if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:

4> set the variable ORDERED_RECONFIGURATION to FALSE.

2> set the variable FAILURE_INDICATOR to TRUE;

2> set the variable FAILURE_CAUSE to "Incompatible simultaneous reconfiguration";

2> set the content of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH;

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

…

Reference

3GPP TS 25.331 clause 8.3.1.9a

8.3.1.14.3 Test Purpose

1. To confirm that the UE retransmits a CELL UPDATE message when it receives a CELL UPDATE CONFIRM message that includes "Physical channel information elements" and UE's variable ORDERED_RECONFIGURATION is set to TRUE because of an ongoing Reconfiguration procedure, before the number of retransmissions has reached the maximum allowed value.

8.3.1.14.4 Method of Test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH (state 6-12) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is brought to CELL_PCH state at the beginning of the test. SS pages the UE by sending a PAGING TYPE 1 message using the U-RNTI identity assigned during RRC connection establishment procedure. The UE shall transmit a CELL UPDATE message on the uplink CCCH. Upon receiving such a message, the SS replies with a CELL UPDATE CONFIRM message contains IE "Physical channel information elements". Following that, SS immediately transmits another CELL UPDATE CONFIRM message contains IE "Physical channel information elements" before the "activation time" indicated in the previous CELL UPDATE CONFIRM message expires. The UE shall re-transmit a CELL UPDATE message with the same cause as the previous CELL UPDATE message and failure cause as "Incompatible simultaneous reconfiguration". SS then transmits a CELL UPDATE CONFIRM message to end the procedure.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PAGING TYPE 1	
2	→		CELL UPDATE	
3	←		CELL UPDATE CONFIRM	SS transmits this message including IE "Physical channel information elements".
4	←		CELL UPDATE CONFIRM	Sent before the activation time specified in the message in step 3 has elapsed.
5	→		CELL UPDATE	
6	←		CELL UPDATE CONFIRM	

Specific Message Content

CELL UPDATE (Step 2)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'

CELL UPDATE (Step 5)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'
Failure cause	Check to see if set to 'Incompatible simultaneous reconfiguration'

CELL UPDATE CONFIRM (Step 3)

Use the same message sub-type found in TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Activation Time Info	Current CFN-[current CFN mod 8 + 8]
Maximum allowed UL TX power	30 dBm

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Activation Time Info	Current CFN-[current CFN mod 8 + 8]
Maximum allowed UL TX power	25 dBm

PAGING TYPE 1 (Step 1)

Use the same message sub-type titled "TM (Packet in PS)" in default message content of TS 34.108 with following exceptions:

Information Element	Value/remark
Page record list	
- Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 0000 0001'

8.3.1.14.5 Test Requirement

After step 1, UE shall transmit a CELL UPDATE message.

After step 4 the UE shall re-transmit a CELL UPDATE message with failure cause set to "Incompatible simultaneous reconfiguration".

8.3.1.15 Cell Update: Unrecoverable error in Acknowledged Mode RLC SRB

8.3.1.15.1 Definition

8.3.1.15.2 Conformance Requirement

A UE shall initiate the cell update procedure in the following cases:

…

1> RLC unrecoverable error:

…

2> if the UE detects RLC unrecoverable error in an AM RLC entity:

3> perform cell update using the cause "RLC unrecoverable error".

…

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

…

The UE shall set the IEs in the CELL UPDATE message as follows:

…

1> if an unrecoverable error in any of the AM RLC entities for the signalling radio bearers RB2, RB3 or RB4 is detected:

2> set the IE "AM_RLC error indication (RB2, RB3 or RB4)" to TRUE.

1> otherwise:

2> set the IE "AM_RLC error indication (RB2, RB3 or RB4)" to FALSE.

…

When the UTRAN receives a CELL UPDATE/URA UPDATE message, the UTRAN should:

…

1> initiate an RRC connection release procedure (see subclause 8.1.4 in TS 25.331) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH. In particular UTRAN should:

2> if the CELL UPDATE message was sent because of an unrecoverable error in RB2, RB3 or RB4:

3> initiate an RRC connection release procedure by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH.

Reference

3GPP TS 25.331 clause 8.3.1.2, 8.3.1.3, 8.3.1.5

8.3.1.15.3 Test Purpose

- To confirm that the UE reports the occurrence of an unrecoverable error in a C-plane AM RLC entity by initiating cell update procedure.
- To confirm that UE enters idle mode state after receiving RRC CONNECTION RELEASE message on the downlink CCCH.

8.3.1.15.4 Method of Test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE

The RRC CONNECTION SETUP message used in the initial setup should be as shown under Specific Message Contents below.

Test Procedure

The UE is initially in CELL_DCH state. SS sends a UE CAPABILITY ENQUIRY message on the DCCH using AM mode. The UE shall reply with a UE CAPABILITY INFORMATION message, sent using AM RLC on the DCCH.

SS does not acknowledge the AM PDUs carrying this message. The UE shall continue to re-transmit the AM PDU carrying UE CAPABILITY INFORMATION message until the maximum re-transmission count is reached.

Thereafter, the UE shall start sending RESET PDUs to request that the AM RLC entity for RRC signalling be re-initialized. SS ignores all RESET PDUs from the UE.

At this point, the UE shall initiate a cell update procedure by transmitting a CELL UPDATE message on the uplink CCCH. The CELL UPDATE message shall specify the value "TRUE" in IE "AM_RLC error indicator (RB2, RB3 or RB4)" and "RLC unrecoverable error" as the cell update cause.

SS sends RRC CONNECTION RELEASE message on the downlink CCCH to UE. SS waits for 5 s and then calls for generic procedure C.1 to check that UE is in idle mode state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is initially in CELL_DCH state.
2	←		UE CAPABILITY ENQUIRY	
3	→		UE CAPABILITY INFORMATION	SS does not acknowledge any of the AM PDUs carrying the UE CAPABILITY INFORMATION message. The UE shall re-transmit these AM PDUs until the maximum number has been reached.
4				UE shall start to transmit a RESET PDU. SS does not respond to any RESET PDU frames originated from the UE.
5	→		CELL UPDATE	IE "AM_RLC Error Indication (RB2, RB3 or RB4)" shall be set to 'TRUE'
6	←		RRC CONNECTION RELEASE	Sends this message on the downlink CCCH and includes UE's UTRAN identity. After SS sent this message, SS waits for 5s.
7	←→		CALL C.1	If the test result of C.1 indicates that UE is in idle mode state, the test passes, otherwise it fails.

Specific Message Contents

RRC CONNECTION SETUP (message used in the initial setup)

Use the same message type found in clause 9 of TS 34.108 with the following exception:

Information Element	Value/remark
Signalling RB information to setup	(UM DCCH for RRC)
- RB identity	Not Present
- CHOICE RLC info type	
- RLC info	
- CHOICE Uplink RLC mode	UM RLC
- Transmission RLC discard	Not Present
- CHOICE Downlink RLC mode	UM RLC
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5
- Logical channel identity	1
- CHOICE RLC size list	Configured
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit List
- RLC size index	According to TS34.108 clause 6.10.2.4.1.3 (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
Signalling RB information to setup	(AM DCCH for RRC)
- RB identity	Not Present
- CHOICE RLC info type	
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	4
- Transmission window size	32
- Timer_RST	500
- Max_RST	1
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	32
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions

Information Element	Value/remark
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5
- Logical channel identity	2
- CHOICE RLC size list	Configure
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit List
- RLC size index	According to TS34.108 clause 6.10.2.4.1.3 (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
Signalling RB information to setup	(AM DCCH for NAS_DT High priority)
- RB identity	Not Present
- CHOICE RLC info type	
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	4
- Transmission window size	32
- Timer_RST	500
- Max_RST	1
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	32
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5
- Logical channel identity	3
- CHOICE RLC size list	Configured
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1

Information Element	Value/remark
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to TS34.108 clause 6.10.2.4.1.3 (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
Signalling RB information to setup	(AM DCCH for NAS_DT Low priority)
- RB identity	Not Present
- CHOICE RLC info type	
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	4
- Transmission window size	32
- Timer_RST	500
- Max_RST	1
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	32
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5
- Logical channel identity	4
- CHOICE RLC size list	Configured
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4

Information Element	Value/remark
- CHOICE RLC size list	Explicit List
- RLC size index	According to TS34.108 clause 6.10.2.4.1.3 (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4

UE CAPABILITY ENQUIRY (Step 2)

Use the same message found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 3)

Only the message type IE is checked for this message.

CELL UPDATE (Step 5)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
AM_RLC error indicator (RB2, RB3 or RB4)	Check to see if set to 'TRUE'
Cell update cause	Check to see if set to 'RLC unrecoverable error'

RRC CONNECTION RELEASE (Step 6)

Use the same message found in TS 34.108 clause 9.

8.3.1.15.5 Test Requirement

After step 4 the UE shall transmit a CELL UPDATE message on the uplink CCCH to report the occurrence of an unrecoverable error in AM RLC entity for RB2, RB3 or RB4 data as well as cell update cause set to "RLC unrecoverable error".

8.3.1.16 Void

8.3.1.17 Cell Update: Failure (UTRAN initiate an RRC connection release procedure on CCCH)

8.3.1.17.1 Definition

8.3.1.17.2 Conformance requirement

When the UTRAN receives a CELL UPDATE/URA UPDATE message, the UTRAN should:

1> … or

1> initiate an RRC connection release procedure (see subclause 8.1.4 in TS 25.331) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH.

…

The UE shall receive and act on an RRC CONNECTION RELEASE message in states CELL_DCH and CELL_FACH. Furthermore this procedure can interrupt any ongoing procedures with the UE in the above listed states.

When the UE receives the first RRC CONNECTION RELEASE message; and

1> if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or

1> if the message is received on DCCH:

the UE shall:

…

1> in state CELL_FACH:

…

2> if the RRC CONNECTION RELEASE message was received on the CCCH:

3> …

3> enter idle mode;

Reference

3GPP TS 25.331 clause 8.3.1.5, 8.1.4.3

8.3.1.17.3 Test purpose

To confirm that the UE moves to idle state upon the reception of a RRC CONNECTION RELEASE message on CCCH.

8.3.1.17.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_FACH (state 6-11)

Test Procedure

The UE is initially in CELL_FACH state. When the UE detects the expiry of periodic cell updating timer T305, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH to perform a periodical cell updating procedure. The SS transmits a RRC CONNECTION RELEASE message on downlink CCCH. The UE shall return to idle mode after release of all current signalling flows and radio access bearers. SS calls for generic procedure C.1 to check that UE is in Idle Mode state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	→		CELL UPDATE	The value "periodical cell update" shall be set in IE "Cell update cause" and this message shall be sent upon expiry of timer T305.
2	←		RRC CONNECTION RELEASE	SS transmits a RRC CONNECTION RELEASE message to the UE. After SS sent this message SS waits for 5 seconds.
3			Void	
4			Void	
5				The UE shall enter idle mode state.
6	←→		CALL C.1	If the test result of C.1 indicates that UE is in idle mode state, the test passes, otherwise it fails.

Specific Message Contents

CELL UPDATE (Step 1)

The same message found in Clause 9 of TS 34.108 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Periodical cell update'

RRC CONNECTION RELEASE (Step 2)

Use the same message sub-type found in Clause 9 of TS 34.108.

8.3.1.17.5 Test requirement

In step 1 the UE shall transmit a CELL UPDATE message on the uplink CCCH and set value "periodical cell update" into IE "Cell update cause".

After step 4 the UE shall enter idle mode.

8.3.1.18 Cell Update: Radio Link Failure (T314>0, T315=0), CS RAB established

8.3.1.18.1 Definition

8.3.1.18.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

2> if the UE is in CELL_DCH state and the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

…

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

2> if the stored values of the timer T314 and timer T315 are both equal to zero; or

2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":

…

2> if the stored value of the timer T314 is equal to zero:

…

2> if the stored value of the timer T315 is equal to zero:

3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";

3> in the variable RB_TIMER_INDICATOR set the IE "T315 expired" to TRUE.

2> if the stored value of the timer T314 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":

4> start timer T314.

3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":

4> start timer T314.

2> if the stored value of the timer T315 is greater than zero:

…

2> for the released radio bearer(s):

3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;

3> when all radio bearers belonging to the same radio access bearer have been released:

4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;

4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.

2> select a suitable UTRA cell according to TS 25.304;

2> set the variable ORDERED_RECONFIGURATION to FALSE.

1> set the variables PROTOCOL_ERROR_INDICATOR, FAILURE_INDICATOR, UNSUPPORTED_CONFIGURATION and INVALID_CONFIGURATION to FALSE;

1> set the variable CELL_UPDATE_STARTED to TRUE;

1> if the UE is not already in CELL_FACH state:

2> move to CELL_FACH state;

2> select PRACH according to TS 25.331 subclause 8.5.17;

2> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

2> use the transport format set given in system information as specified in TS 25.331 subclause 8.6.5.1.

1> if the UE performs cell re-selection:

2> clear the variable C_RNTI; and

2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

If the received CELL UPDATE CONFIRM message would cause the UE to transit to CELL_DCH state:

1> if the UE failed to establish the physical channel(s) indicated in the received CELL UPDATE CONFIRM message according to the criteria defined in subclause 8.5.4 in TS 25.331are not fulfilled; or

…

the UE shall:

…

1> if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:

2> set the variable ORDERED_RECONFIGURATION to FALSE.

1> if V302 is equal to or smaller than N302:

2> select a suitable UTRA cell according to TS 25.304;

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "Radio link failure";

2> submit the CELL UPDATE message for transmission on the uplink CCCH;

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

…

If the IE "Downlink DPCH info common for all RL" is included in a message used to perform a Timing re-initialised hard handover or the IE "Downlink DPCH info common for all RL" is included in a message other than RB SETUP used to transfer the UE from a state different from Cell_DCH to Cell_DCH, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

…

1> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the response message;"

…

Reference

3GPP TS 25.331 clauses 8.3.1.2, 8.3.1.7a, 8.6.6.28.

8.3.1.18.3 Test purpose

1. To confirm that the UE shall try to find a new cell after detecting that a radio link failure has occurred.
2. To confirm that the UE performs a cell selection procedure when it fails to configure the physical channel(s) indicated in the CELL UPDATE CONFIRM message.

8.3.1.18.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 and cell 2 are active).

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: CS_DCCH+DTCH_DCH (state 6-9).

Test Procedure

Table 8.3.1.18

Parameter	Unit	Cell 1			Cell 2		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			Mid Range Test Frequency		
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-60	-75	-60	-85
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-60	-75	-60	-85

Table 8.3.1.18 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is brought to CELL_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.18. The UE shall detect a radio link failure in cell 1.

Then it shall attempt to re-select to cell 2. After that, it shall transmit CELL UPDATE on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes dedicated transport and physical channel parameters on downlink DCCH. SS shall not configure according to this message. Instead, SS configures its downlink transmission power settings according to column "T2" in table 8.3.1.18. UE shall fail to establish the dedicated channel in cell 2.

UE shall re-select to cell 1 and transmit a CELL UPDATE message with IE "Cell update cause" set to "Radio link failure". Then SS responds with a CELL UPDATE CONFIRM message on downlink DCCH. Then the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0			Void	
1			Void	
2			Void	
3			Void	
4				SS configures cell 1 and 2 according to column "T1" in table 8.3.1.18. SS starts to listen to the uplink CCCH of cell 2.
5			Void	
6				The UE detects the radio link failure.
7	→		CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
8	←		CELL UPDATE CONFIRM	Including dedicated physical channel parameters.
9				SS does not configure according to the message in step 8. SS configures cell 1 and 2 according to column "T2" in table 8.3.1.18.
10	→		CELL UPDATE	UE shall select cell 1 and transmit this message
11	←		CELL UPDATE CONFIRM	See message content.
12	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108 titled "System Information Block type 1 (supported PLMN type is GSM-MAP)", with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2
- T313	2
- T315	0

CELL UPDATE (Step 7)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI -SRNC Identity - S-RNTI	 Check to see if set to value assigned in cell 1. Check to see if set to value assigned in cell 1.
AM_RLC error indication (RB2, RB3 or RB4)	Not checked
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator - T314 expired - T315 expired	 FALSE TRUE

CELL UPDATE CONFIRM (Step 8 and 11)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
RRC transaction identifier	Selects an arbitrary integer between 0 to 3, but different values should be used for step 8 and 11.
UL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Added or Reconfigured TrCH information list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
DL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Added or Reconfigured TrCH information list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.

CELL UPDATE (Step 10)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
-SRNC Identity	Check to see if set to value assigned in cell 1.
- S-RNTI	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
Failure cause	This IE is not Checked.
RB timer indicator	
- T314 expired	FALSE
- T315 expired	TRUE

TRANSPORT CHANNEL RECONFIGURATION COMPLETE (Step 12)

Use the same message found in TS 34.108 clause 9, with the exceptions of the following IEs:

Information Element	Value/remark
Uplink counter synchronisation info	This IE is checked to see if it is present in the case ciphering is activated.

8.3.1.18.5 Test requirement

After step 6, the UE shall detect the presence of cell 2, perform cell re-selection and transmit a CELL UPDATE message.

After step 9, the UE shall transmit a CELL UPDATE message with IE "Cell update cause" set to "Radio link failure".

After step 11, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC with IE "Uplink counter synchronisation info" as present in case ciphering is activated.

8.3.1.19 Void

8.3.1.20 Cell Update: Reception of CELL UPDATE CONFIRM Message that causes invalid configuration

8.3.1.20.1 Definition

8.3.1.20.2 Conformance Requirement

If the variable INVALID_CONFIGURATION is set to TRUE, the UE shall:

1> if V302 is equal to or smaller than N302:

2> if, caused by the received CELL UPDATE CONFIRM message

3> if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:

4> set the variable ORDERED_RECONFIGURATION to FALSE.

2> in case of a cell update procedure:

3> set the variable FAILURE_INDICATOR to TRUE;

3> set the variable FAILURE_CAUSE to "Invalid configuration";

3> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the CELL UPDATE message for transmission on the uplink CCCH.

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

…

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.20.3 Test Purpose

1. To confirm that the UE retransmits a CELL UPDATE message when it receives a CELL UPDATE CONFIRM message that will trigger an invalid configuration in the UE, if the number of retransmissions has not reached the maximum allowed value.

8.3.1.20.4 Method of Test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH (state 6-12) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is brought to CELL_PCH state at the beginning of the test. SS pages the UE by sending a PAGING TYPE 1 message using the U-RNTI identity assigned during RRC connection establishment procedure. The UE shall transmit a CELL UPDATE message on the uplink CCCH. Upon receiving such a message, the SS replies with a CELL UPDATE CONFIRM message which is set to give an invalid configuration. The UE shall re-transmit CELL UPDATE message. SS responds with a valid CELL UPDATE CONFIRM message to end the procedure. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PAGING TYPE 1	The UE is in the CELL_PCH state. SS pages for the UE using the allocated connected mode identity (U-RNTI).
2	→		CELL UPDATE	If CELL UPDATE message is received, check that the value "paging response" is set in IE "Cell update cause".
3	←		CELL UPDATE CONFIRM	SS transmits an invalid message.
4	→		CELL UPDATE	IE "failure cause" is set to "invalid configuration"
5	←		CELL UPDATE CONFIRM	
6	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Content

CELL UPDATE (Step 2)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'

CELL UPDATE CONFIRM (Step 3)

Use the same message sub-type found in TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH info	Not Present

CELL UPDATE (Step 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'
Failure cause	Check to see if it is set to 'invalid configuration'

PAGING TYPE 1 (Step 1)

Use the same message sub-type titled "TM (Packet in PS)" in default message content of TS 34.108 with following exceptions:

Information Element	Value/remark
Page record list - Paging record - CHOICE Used paging identity - U-RNTI - SRNC Identity - S-RNTI	 UTRAN identity '0000 0000 0001' '0000 0000 0000 0000 0001'

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

8.3.1.20.5 Test Requirement

After step 1 the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response".

After step 3 the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response" and IE "failure cause" set to "invalid configuration".

After step 5, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

8.3.1.21 Cell Update: Cell reselection to cell of another PLMN belonging to the equivalent PLMN list

8.3.1.21.1 Definition

8.3.1.21.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1.- Cell reselection:

- if none of the criteria for performing cell update with the causes specified above in the current clause is met; and
- if the UE is in CELL_FACH or CELL_PCH state; and
- if the UE performs cell re-selection or the variable C_RNTI is empty:
  - perform cell update using the cause "cell reselection".

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.
   - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.
   - The cell is not barred.
   - The cell is not part of the list of "forbidden LAs for roaming"
   - The cell selection criteria are fulfilled.
3. The Mobile Equipment shall store a list of "equivalent PLMNs". This list is replaced or deleted at the end of each location update procedure, routing area update procedure and GPRS attach procedure. The stored list

consists of a list of equivalent PLMNs as downloaded by the network plus the PLMN code of the network that downloaded the list. The stored list shall not be deleted when the MS is switched off. The stored list shall be deleted if the SIM is removed. The maximum number of possible entries in the stored list is six.

Reference

3GPP TS 25.331 clause 8.3.1.2.

3GPP TS 25.304 clause 4.3.

3GPP TS 24.008 clause 4.4.1.

8.3.1.21.3 Test purpose

1. To confirm that the UE executes a cell update procedure after a successful reselection to another UTRA cell with a PLMN identity different from the original cell but with a PLMN identity that is part of the equivalent PLMN list in the UE.

2. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection.

NOTE: Verifies conformance requirement 1, 2 and 3.

3. To confirm that the UE refrains from executing a cell update procedure to a better UTRA cell with another PLMN identity when that PLMN identity is not part of the equivalent PLMN list in the UE.

NOTE: Verifies conformance requirement 1, 2 and 3.

NOTE: Test case in 8.3.1.1 is a test where the UE reselects to a cell with the same PLMN identity as the registered PLMN.

8.3.1.21.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in table 8.3.1.21, while cell 4 and cell 7 is inactive.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

UE: Shall have stored equivalent PLMN list containing PLMN-1 and PLMN-2. The equivalent PLMN list stored in the UE shall not contain PLMN-3.

Test Procedure

The SS activates Cell 1, 4 & 7 according table 8.3.1.21.

Table 8.3.1.21

Parameter	Unit	Cell 1			Cell 4			Cell 7		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			High Range Test Frequency			Low Range Test Frequency		
PLMN identity		PLMN-1			PLMN-2			PLMN-3		
CPICH Ec (FDD)	dBm	-60	-72	-72	OFF	-60	-66	OFF	OFF	-60
P-CCPCH RSCP (TDD)	dBm	-62	-74	-74	OFF	-62	-68	OFF	OFF	-62

Table 8.3.1.21-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently.

a) At T1, the SS activates Cell 4, and monitors Cell 4 for received messages from UE.

b) UE re-selects to Cell 4, and sends a CELL UPDATE. The SS shall reply with CELL UPDATE CONFIRM message on downlink DCCH.

c) At T2, the SS activates Cell 7, and monitors Cell 7 for received messages from UE.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is camped on Cell 1 and registered to PLMN1
1a	←		MASTER INFORMATION BLOCK SCHEDULING BLOCK 1 SYSTEM INFORMATION BLOCK TYPE 4 SYSTEM INFORMATION BLOCK TYPE 11	SS transmits MIB and SB1 with a new value Tag. Simultaneously SS transmits modified SIB 4 and 11, with contents given in specific message contents
1b	←		SYSTEM INFORMATION CHANGE INDICATION	Including 'MIB Value TAG' set to the value currently being transmitted
1c				Wait 5 seconds to allow UE to read new system information
1d				SS shall activate Cell 4. The UE shall not re-select Cell 4 until Cell 1 power level is set according to T1.
2	→		CELL UPDATE	At T1: Sent in Cell 4 The value "cell reselection" set in IE "Cell update cause".
3	←		CELL UPDATE CONFIRM	
4	→		UTRAN MOBILITY INFORMATION CONFIRM	
4a				SS shall activate Cell 7 and set power level according to T2.
5				At T2: No message sent by UE

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	Set to (Current MIB value tag + 1)
SIB 4 Cell Value tag	Set to (Current SIB4 value tag + 1)
SB 1 Cell Value tag	Set to (Current SB 1 value tag + 1)

SCHEDULING BLOCK 1 (Step 1a)

Information Element	Value/remark
SIB 11 Cell Value tag	Set to (Current SIB 11 value tag + 1)

System Information Block type 4 (Step 1a)

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

- Qqualmin	-16

System Information Block type 11 (Step 1a)

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present

SYSTEM INFORMATION CHANGE INDICATION (Step 1b)

Information Element	Value/remark
Message Type	
BCCH modification info	
MIB Value tag	Set equal to Value tag sent in modified MIB in step 1a

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type titled "CELL UPDATE CONFIRM message" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
- New C-RNTI	'1010 1010 1010 1010'

8.3.1.21.5 Test requirement

After step 1c, the UE shall send a CELL UPDATE at T1.

After step 4, the UE shall refrain from sending a cell update (or any other message) after T2.

8.3.1.22 Cell update: Restricted cell reselection to a cell belonging to forbidden LA list (Cell_FACH)

8.3.1.22.1 Definition

8.3.1.22.2 Conformance requirement

1. - Cell reselection:

   - if none of the criteria for performing cell update with the causes specified above in the current clause is met; and

   - if the UE is in CELL_FACH or CELL_PCH state; and

   - if the UE performs cell re-selection or the variable C_RNTI is empty:

     - perform cell update using the cause "cell reselection".

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

   - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.

   - The cell is not barred.

   - The cell is not part of the list of "forbidden LAs for roaming"

   - The cell selection criteria are fulfilled.

3. The Mobile Equipment shall contain a list of "forbidden location areas for roaming", as well as a list of "forbidden location areas for regional provision of service". These lists shall be erased when the MS is switched off or when the SIM is removed, and periodically (with period in the range 12 to 24 hours). The location area

identification received on the BCCH that triggered the location updating request shall be added to the suitable list whenever a location update reject message is received with the cause "Roaming not allowed in this location area" or with the cause "Location Area not allowed". The lists shall accommodate each 10 or more location area identifications. When the list is full and a new entry has to be inserted, the oldest entry shall be deleted.

Reference

3GPP TS 25.331 clause 8.3.1.2.

3GPP TS 25.304 clause 4.3.

3GPP TS 24.008 clause 4.4.1.

8.3.1.22.3 Test purpose

1. To confirm that the UE executes a cell update procedure after a successful reselection of another UTRA cell with a LA identity that is not part of the list of LAs stored in the UE as "forbidden location areas for roaming".

2. To confirm that if the UE get a release message and is moved to idle mode, performs a registration update where the LA list is updated and the UE again enters connected mode, that the UE refrains from selecting that same UTRA cell if that is part of the forbidden LA list.

NOTE: Test case in 8.3.1.1 is a test where the UE reselects to a cell with the same LA identity as the LA identity in the original cell.

NOTE: Test case in 8.1.3.2 is a test where normal RRC connection release on DCCH in CELL_FACH state is tested.

NOTE: Test case in 8.1.9 is a test where normal RRC connection request and location registration is tested.

8.3.1.22.4 Method of test

Initial Condition

System Simulator:

- 2 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in table 8.3.1.22, while cell 4 is inactive.

- Qqualmin value for Cell 1 and Cell 4 is set to -16 dB in SIB4 (FDD only) (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

UE: Shall have an empty list of LAs stored that are "forbidden location areas for roaming".

Related ICS/IXIT statements

Support of PS service Yes/No

Test Procedure

Table 8.3.1.22

Parameter	Unit	Cell 1		Cell 4	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		High Range Test Frequency	
LA identity		LA-ID 1		LA-ID 2	
CPICH Ec (FDD)	dBm	-60	-66	Cell 4 is switched off	-60
P-CCPCH RSCP (TDD)	dBm	-62	-68	Cell 4 is switched off	-62

Table 8.3.1.22-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1"is to be applied subsequently.

a) At T1, verify that the UE reselects to cell 4 and sends a cell update.

b) SS sends a RRC connection release message to the UE from cell 4 on CCCH.

c) The UE performs a routing area update to cell 4 (RRC Connection request, setup, initial direct transfer, DL direct transfer (with LA forbidden for roaming), RRC connection release.)

d) The UE reselects cell 1 again although this is not the best cell.

e) The UE performs a routing area update to cell 1 (RRC Connection request, setup, initial direct transfer, DL direct transfer (without LA forbidden for roaming)).

f) Keep the UE in RRC Connected mode in CELL_FACH state.

g) Make sure the UE refrains from reselecting cell 4 and does not send a cell update (or any other message) in cell 4.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	→		CELL UPDATE	At T1: Sent in Cell 4 The value "cell reselection" set in IE "Cell update cause".
2	←		RRC CONNECTION RELEASE	This message is sent on CCCH. The value "Normal event" is set in IE "Release cause"
3			Void	
4	→		RRC CONNECTION REQUEST	The value "Registration" is set in IE "Establishment cause"
5	←		RRC CONNECTION SETUP	Transits the UE to CELL_FACH state.
6	→		RRC CONNECTION SETUP COMPLETE	
7	→		INITIAL DIRECT TRANSFER	Includes GMM message ROUTING AREA UPDATE REQUEST.
8	←		DOWNLINK DIRECT TRANSFER	Includes GMM message ROUTING AREA UPDATE REJECT with reject cause “No Suitable Cells In Location Area”
9	←		RRC CONNECTION RELEASE	This message is sent on DCCH. The value "Normal event" is set in IE "Release cause"
10	→		RRC CONNECTION RELEASE COMPLETE	
11	→		RRC CONNECTION REQUEST	Sent in Cell 1. The value "Registration" is set in IE "Establishment cause"
12	←		RRC CONNECTION SETUP	Transits the UE to CELL_FACH state.
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		INITIAL DIRECT TRANSFER	Includes GMM message ROUTING AREA UPDATE REQUEST.
14a	←		SECURITY MODE COMMAND	
14b	→		SECURITY MODE COMPLETE	
15	←		DOWNLINK DIRECT TRANSFER	Includes GMM message ROUTING AREA UPDATE ACCEPT.

Specific Message Contents

System Information Block type 4

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

- Qqualmin	-16

System Information Block type 11 (FDD)

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present

CELL UPDATE (Step 1)

The same message found in TS34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'cell reselection'

RRC CONNECTION RELEASE (Step 2, 9)

Use the same message sub-type found in TS34.108 clause 9.

RRC CONNECTION RELEASE COMPLETE (Step 10)

Use the same message sub-type found in TS34.108 clause 9. Only the message type IE in this message will be checked.

RRC CONNECTION REQUEST (Step 4, 11)

Use the same message sub-type found in TS34.108 clause 9.

RRC CONNECTION SETUP (Step 5, 12)

Use the same message sub-type found in TS34.108 clause 9.

RRC CONNECTION SETUP COMPLETE (Step 6, 13)

Use the same message sub-type found in TS34.108 clause 9.

INITIAL DIRECT TRANSFER (Step 7, 14)

Use the same message sub-type found in TS34.108 clause 9.

DOWNLINK DIRECT TRANSFER (Step 8, 15)

Use the same message sub-type found in TS34.108 clause 9.

8.3.1.22.5 Test requirement

In step 1, the UE shall send a CELL UPDATE in Cell 4 at T1 and attempt registration update in Cell 4.

After step 2, the UE shall transmit RRC CONNECTION REQUEST message.

After step 5, the UE shall transmit RRC CONNECTION SETUP COMPLETE message, followed by an INITIAL DIRECT TRANSFER message

Since the registration update is rejected in Cell 4, UE shall transmit RRC CONNECTION RELEASE COMPLETE message after receiving RRC CONNECTION RELEASE message from SS. UE shall not send any more messages in Cell 4.

After step 9, the UE shall transmit RRC CONNECTION REQUEST message in cell 1.

After step 12, the UE shall transmit RRC CONNECTION SETUP COMPLETE message followed by INITIAL DIRECT TRANSFER message.

8.3.1.23 Cell Update: HCS cell reselection in CELL_FACH

8.3.1.23.1 Definition

8.3.1.23.2 Conformance requirement

1. The quality level threshold criterion H for hierarchical cell structures is used to determine whether prioritised ranking according to hierarchical cell re-selection rules shall apply, and is defined by:

$$H_s = Q_{meas,s} - Qhcs_s$$

$$H_n = Q_{meas,n} - Qhcs_n - TO_n * L_n$$

…

2. The cell-ranking criterion R is defined by:

$$R_s = Q_{meas,s} + Qhyst_s$$

$$R_n = Q_{meas,n} - Qoffset_{s,n} - TO_n * (1 - L_n)$$

where:

$$TO_n = TEMP\_OFFSET_n * W(PENALTY\_TIME_n - T_n)$$

$L_n = 0$ if $HCS\_PRIO_n = HCS\_PRIO_s$
$L_n = 1$ if $HCS\_PRIO_n <> HCS\_PRIO_s$

$W(x) = 0$ for $x < 0$
$W(x) = 1$ for $x >= 0$

$TEMP\_OFFSET_n$ applies an offset to the H and R criteria for the duration of $PENALTY\_TIME_n$ after a timer T_n has started for that neighbouring cell.

The timer T_n is implemented for each neighbouring cell. T_n shall be started from zero when one of the following conditions becomes true:

- if $HCS\_PRIO_n <> HCS\_PRIO_s$ and

$$Q_{meas,n} > Qhcs_n$$

Or

- if $HCS\_PRIO_n = HCS\_PRIO_s$ and

  - for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH RSCP in the serving cell, and:

$$Q_{meas,n} > Q_{meas,s} + Qoffset1_{s,n}$$

  - for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH Ec/No in the serving cell, and:

$$Q_{meas,n} > Q_{meas,s} + Qoffset2_{s,n}$$

  - for all other serving and neighbour cells:

$$Q_{meas,n} > Q_{meas,s} + Qoffset1_{s,n}$$

T_n for the associated neighbour cell shall be stopped as soon as any of the above conditions are no longer fulfilled. Any value calculated for TO_n is valid only if the associated timer T_n is still running else TO_n shall be set to zero.

At cell-reselection, a timer T_n is stopped only if the corresponding cell is not a neighbour cell of the new serving cell, or if the criteria given above for starting timer T_n for the corresponding cell is no longer fulfilled with the parameters of the new serving cell. On cell re-selection, timer T_n shall be continued to be run for the corresponding cells but the criteria given above shall be evaluated with parameters broadcast in the new serving cell if the corresponding cells are neighbours of the new serving cell.

…

3. The cell selection criterion S used for cell reselection is fulfilled when:

for FDD cells:	$Srxlev > 0$ AND $Squal > 0$
for TDD cells:	$Srxlev > 0$
for GSM cells:	$Srxlev > 0$

Where :

$$Squal = Q_{qualmeas} - Qqualmin$$

$$Srxlev = Q_{rxlevmeas} - Qrxlevmin - Pcompensation$$

…

4. The UE shall perform ranking of all cells that fulfil the S criterion among

   - all cells that have the highest HCS_PRIO among those cells that fulfil the criterion H >= 0. Note that this rule is not valid when UE high-mobility is detected.

   - all cells, not considering HCS priority levels, if no cell fulfil the criterion H >= 0. This case is also valid when it is indicated in system information that HCS is not used, that is when serving cell does not belong to a hierarchical cell structure.

The cells shall be ranked according to the R criteria.

The best ranked cell is the cell with the highest R value.

5. If an FDD cell is ranked as the best cell and the quality measure for cell selection and re-selection is set to CPICH RSCP, the UE shall perform cell re-selection to that FDD cell.

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during a time interval Treselection.
- more than 1 second has elapsed since the UE camped on the current serving cell.

…

6. The *cell reselection* process in Connected Mode is the same as *cell reselection evaluation process* used for idle mode, described in subclause 5.2.6 of 25.304.

7. A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

…

1> RLC unrecoverable error:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

Reference

3GPP TS 25.304 clause 5.2.6.1.4

3GPP TS 25.304 clause 5.4.3

3GPP TS 25.331 clause 8.3.1

8.3.1.23.3 Test purpose

1. To confirm that the UE can read HCS related SIB information and act upon all HCS parameters in CELL_FACH state.
2. To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell in CELL_FACH state.
3. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection.

8.3.1.23.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 is active with downlink transmission power shown in Column To in Table 8.3.1.23-1. Cell 2 and 3 are switched off.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

Specific Message Content

For system information blocks 4 and 11 for Cell 1 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.

Contents of System Information Block type 4 (FDD)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintersearch	0 (0 dB)
- SsearchHCS	17 (35 dB)
- RAT List	This parameter is configurable
- $S_{limit,SearchRAT}$	0
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Qhyst1s	5 (gives actual value of 10 dB)
- Qhyst2s	Not Present
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	40 (results in actual value of –75)
- TcrMax	Not Present

Contents of System Information Block type 4 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	TDD
- SsearchHCS	23 (47 dB)
- RAT List	This parameter is configurable
- Qrxlevmin	-52 (-103 dBm)
- Qhyst1s	5 (gives actual value of 10 dB)
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	40 (results in actual value of –75)
- TcrMax	Not Present

Contents of System Information Block type 11 (FDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1$_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1$_{s,n}$	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)

Contents of System Information Block type 11 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS34.108: Default settings for cell No.1 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS34.108: Default settings for cell No.2 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS34.108: Default settings for cell No.3 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)

Test Procedure

Table 8.3.1.23-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
Cell id in system information		1			2			3		
UTRA RF Channel Number		Mid Range Test Frequency			Mid Range Test Frequency			Mid Range Test Frequency		
HCS Priority		6			7			7		
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-65	-65	-82	-82	-68	-82	-68	-68
P-CCPCH RSCP (TDD)	dBm	-60	-60	-60	-80	-80	-70	-80	-70	-70
H* (During penalty time)		15	10	-inf	-inf	-inf	7	-inf	-inf	7
H* (After PenaltyTime)		15	10	10	-7	-7	7	-7	7	7
R* (During PenaltyTime)		n.a.	n.a.	n.a.	n.a.	n.a.	-inf	n.a.	n.a.	-58
R* (After PenaltyTime)		n.a.	n.a.	n.a.	n.a.	n.a.	-48	n.a.	n.a.	-58

(*) NOTE: this parameter is calculated internally in the UE and is only shown for clarification of the test procedure.

The UE is in the CELL_FACH state, camping onto cell 1. SS configures Cell 2 and 3 with power levels given in column "TO" and starts to broadcast BCCH on the primary CCPCH in cell 2 & 3. UE shall remain camped on the Cell 1 even after expiry of penalty time i.e. 40 seconds. SS sets downlink transmission power settings according to columns "T1" in table 8.3.1.23-1. The UE shall find cell 3 to be more suitable for service and hence perform a cell reselection to cell 3 after at-least 40 Seconds (Penalty Time) after the power levels have been changed. After the completion of cell reselection, the UE shall transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 3 and set IE "Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_FACH", to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. UE shall stay in CELL_FACH state. SS then sets downlink transmission power settings according to columns "T2" in table 8.3.1.23-1. The UE shall find cell 2 to be more suitable for service after the expiry of the penalty time and hence perform a cell reselection to cell 2 after the power levels have been changed. After the completion of cell reselection, the UE shall transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 2 and set IE "Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_FACH", to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. UE shall stay in CELL_FACH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state in cell 1
2	←		BCCH	SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.23-1. The SS starts to broadcast BCCH on the primary CCPCH in cell 2 and Cell 3. The UE shall still find Cell 1 best for service even after penalty time of 40 seconds, and shall remain in Cell 1 in CELL_FACH State
3				SS changes the power levels as per column 'T1' in the table 8.3.1.23-1. For the time equal to Penalty time 40 Seconds, after the change in power levels, the UE shall still find Cell 1 as best for service and remain in cell 1. After Penalty time of 40 Seconds, UE shall find Cell 3 better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 3.
4	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause" Received in Cell 3
5	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH".
6	→		UTRAN MOBILITY INFORMATION CONFIRM	
7				SS changes the power levels as per column 'T2' in the table 8.3.1.23-1. For the time equal to penalty time of 40 seconds, after the change in power levels, the UE shall still find cell 3 as best for service and remain in Cell 3. After penalty time of 40 seconds, UE shall find Cell 2 better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
8	→		CELL UPDATE	Received in Cell 2
9	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH".
10	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

The contents of system information block 4 and 11 messages are identical as system information block 4 and 11 messages as found in 34.108 clause 6.1 with the following exceptions:

Contents of System Information Block type 4 (FDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintersearch	0 dB
- SsearchHCS	17 (35 dB)
- RAT List	This parameter is configurable
- $S_{limit,SearchRAT}$	0
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- $Qhyst1_S$	5 (gives actual value of 10 dB)
- $Qhyst2_S$	Not Present
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	40 (results in actual value of –75)
- TcrMax	Not Present

Contents of System Information Block type 4 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	TDD
- Sintersearch	0 dB
- SsearchHCS	23 (47 dB)
- RAT List	This parameter is configurable
- Qrxlevmin	-52 (-103 dBm)
- $Qhyst1_S$	5 (gives actual value of 10 dB)
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	40 (results in actual value of –75)
- TcrMax	Not Present

Contents of System Information Block type 11 (FDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)

Contents of System Information Block type 11 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS34.108: Default settings for cell No.2 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.1 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.3 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)

Contents of System Information Block type 11 (FDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)

Contents of System Information Block type 11 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS34.108: Default settings for cell No.3 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.1 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.2 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)

CELL UPDATE

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 5 and 9)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

8.3.1.23.5 Test requirement

After step 3 the UE shall reselect to cell 3 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE "Cell update cause".

After step 5 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 7 the UE shall reselect to cell 2 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE "Cell update cause".

After step 9 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

8.3.1.24 Cell Update: HCS cell reselection in CELL_PCH

8.3.1.24.1 Definition

8.3.1.24.2 Conformance requirement

1. The quality level threshold criterion H for hierarchical cell structures is used to determine whether prioritised ranking according to hierarchical cell re-selection rules shall apply, and is defined by:

$$H_s = Q_{meas,s} - Qhcs_s$$

$$H_n = Q_{meas,n} - Qhcs_n - TO_n * L_n$$

…

2. The cell-ranking criterion R is defined by:

$$R_s = Q_{meas,s} + Qhyst_s$$

$$R_n = Q_{meas,n} - Qoffset_{s,n} - TO_n * (1 - L_n)$$

where:

$TO_n = TEMP\_OFFSET_n * W(PENALTY\_TIME_n - T_n)$

$L_n = 0$ if $HCS\_PRIO_n = HCS\_PRIO_s$
$L_n = 1$ if $HCS\_PRIO_n <> HCS\_PRIO_s$

$W(x) = 0$ for $x < 0$
$W(x) = 1$ for $x >= 0$

$TEMP\_OFFSET_n$ applies an offset to the H and R criteria for the duration of $PENALTY\_TIME_n$ after a timer T_n has started for that neighbouring cell.

The timer T_n is implemented for each neighbouring cell. T_n shall be started from zero when one of the following conditions becomes true:

- if $HCS\_PRIO_n <> HCS\_PRIO_s$ and

$$Q_{meas,n} > Qhcs_n$$

Or

- if $HCS\_PRIO_n = HCS\_PRIO_s$ and
  - for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH RSCP in the serving cell, and:

$$Q_{meas,n} > Q_{meas,s} + Qoffset1_{s,n}$$

  - for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH Ec/No in the serving cell, and:

$$Q_{meas,n} > Q_{meas,s} + Qoffset2_{s,n}$$

  - for all other serving and neighbour cells:

$$Q_{meas,n} > Q_{meas,s} + Qoffset1_{s,n}$$

T_n for the associated neighbour cell shall be stopped as soon as any of the above conditions are no longer fulfilled. Any value calculated for TO_n is valid only if the associated timer T_n is still running else TO_n shall be set to zero.

At cell-reselection, a timer T_n is stopped only if the corresponding cell is not a neighbour cell of the new serving cell, or if the criteria given above for starting timer T_n for the corresponding cell is no longer fulfilled with the parameters of the new serving cell. On cell re-selection, timer T_n shall be continued to be run for the corresponding cells but the criteria given above shall be evaluated with parameters broadcast in the new serving cell if the corresponding cells are neighbours of the new serving cell.

…

3. The cell selection criterion S used for cell reselection is fulfilled when:

for FDD cells:	Srxlev > 0 AND Squal > 0
for TDD cells:	Srxlev > 0
for GSM cells:	Srxlev > 0

Where :

$Squal = Q_{qualmeas} - Qqualmin$

$Srxlev = Q_{rxlevmeas} - Qrxlevmin - Pcompensation$

…

4. The UE shall perform ranking of all cells that fulfil the S criterion among

- all cells that have the highest HCS_PRIO among those cells that fulfil the criterion H >= 0. Note that this rule is not valid when UE high-mobility is detected.
- all cells, not considering HCS priority levels, if no cell fulfil the criterion H >= 0. This case is also valid when it is indicated in system information that HCS is not used, that is when serving cell does not belong to a hierarchical cell structure.

The cells shall be ranked according to the R criteria.

The best ranked cell is the cell with the highest R value.

5. If an FDD cell is ranked as the best cell and the quality measure for cell selection and re-selection is set to CPICH RSCP, the UE shall perform cell re-selection to that FDD cell.

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during a time interval Treselection.
- more than 1 second has elapsed since the UE camped on the current serving cell.

…

6. The *cell reselection* process in Connected Mode is the same as *cell reselection evaluation process* used for idle mode, described in subclause 5.2.6 of 25.304.

7. A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

…

1> RLC unrecoverable error:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

Reference

3GPP TS 25.304 clause 5.2.6.1.4

3GPP TS 25.304 clause 5.4.3

3GPP TS 25.331 clause 8.3.1

8.3.1.24.3 Test purpose

1. To confirm that the UE can read HCS related SIB information and act upon all HCS parameters in CELL_PCH state.
2. To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell in CELL_PCH state.
3. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection.

8.3.1.24.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 is active with downlink transmission power shown in Column To in table 8.3.1.24-1. Cell 2 and 3 are switched off.

UE: CELL_PCH (state 6-12) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Specific Message Content

For system information blocks 4 and 11 for Cell 1 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.

Contents of System Information Block type 4 (FDD)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintersearch	0 dB
- SsearchHCS	17 (35 dB)
- RAT List	This parameter is configurable
- $S_{limit,SearchRAT}$	0
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Qhyst1s	5 (gives actual value of 10 dB)
- Qhyst2s	Not Present
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	40 (results in actual value of –75)
- TcrMax	Not Present

Contents of System Information Block type 4 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	TDD
- SsearchHCS	23 (47 dB)
- RAT List	This parameter is configurable
- Qrxlevmin	-52 (-103 dBm)
- Qhyst1s	5 (gives actual value of 1 dB)
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	40 (results in actual value of –75)
- TcrMax	Not Present

Contents of System Information Block type 11 (FDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1$_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1$_{s,n}$	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB

Information Element	Value/remark
- Qrxlevmin	-58 (-115 dBm)

Contents of System Information Block type 11 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS34.108: Default settings for cell No.1 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.2 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.3 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)

Test Procedure

Table 8.3.1.24-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
Cell id in system information		1			2			3		
UTRA RF Channel Number		Mid Range Test Frequency			Mid Range Test Frequency			Mid Range Test Frequency		
HCS Priority		6			7			7		
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-65	-65	-82	-82	-68	-82	-68	-68
P-CCPCH RSCP (TDD)	dBm	-61	-61	-61	-80	-80	-67	-80	-73	-73
H* (During penalty time)		15	10	-inf	-inf	-inf	7	-inf	-inf	7
H* (After PenaltyTime)		15	10	10	-7	-7	7	-7	7	7
R* (During PenaltyTime)		n.a.	n.a.	n.a.	n.a.	n.a.	-inf	n.a.	n.a.	-58
R* (After PenaltyTime)		n.a.	n.a.	n.a.	n.a.	n.a.	-48	n.a.	n.a.	-58

(*) Note: this parameter is calculated internally in the UE and is only shown for clarification of the test procedure.

The UE is in the CELL_PCH state, camping onto cell 1. SS configures Cell 2 and 3 with power levels given in column "TO" and starts to broadcast BCCH on the primary CCPCH in cell 2 & 3. UE shall remain camped on the Cell 1 even after expiry of penalty time i.e. 40 seconds. SS sets downlink transmission power settings according to columns "T1" in table 8.3.1.24-1. The UE shall find cell 3 to be more suitable for service and hence perform a cell reselection to cell 3 after at-least 40 Seconds (Penalty Time) after the power levels have been changed. After the completion of cell reselection, the UE shall move to CELL_FACH state and transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 3 and set IE "Cell update cause" to "Cell Reselection". After SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_PCH", to the UE on the downlink CCCH. UE shall return to CELL_PCH state in Cell 3 and will not transmit anything on PRACH. SS then sets downlink transmission power settings according to columns "T2" in table 8.3.1.24-1. The UE shall find cell 2 to be more suitable for service after the expiry of penalty time and hence perform a cell reselection to cell 2 after the power levels have been changed. After the completion of cell reselection, the UE shall move to CELL_FACH state and transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 2 and set IE "Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_PCH", to the UE on the downlink DCCH. UE shall return to CELL_PCH state in Cell 2 and will not transmit anything on PRACH.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_PCH state in cell 1
2	←		BCCH	SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.24-1. The SS starts to broadcast BCCH on the primary CCPCH in cell 2 and Cell 3. The UE shall still find Cell 1 best for service even after penalty time of 40 seconds, and shall remain in Cell 1 in CELL_PCH State
3				SS changes the power levels as per column 'T1' in the table 8.3.1.24-1. For the time equal to Penalty time 40 Seconds, after the change in power levels, the UE shall still find Cell 1 as best for service and remain in cell 1. After Penalty time of 40 Seconds, UE shall find Cell 3 better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 3.
4	→		CELL UPDATE	The UE moves to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection". Received in Cell 3
5	←		CELL UPDATE CONFIRM	Message sent on CCCH with IE "RRC State Indicator" is set to "CELL_PCH".
7				SS changes the power levels as per column 'T2' in the table 8.3.1.24-1. SS Checks that no cell update message is received during penalty time as the UE shall find Cell 2 better for service and perform a reselection after the expiry of penalty time. SS waits for the maximum duration required for the UE to camp to cell 2.
8	→		CELL UPDATE	The UE moves to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection". Received in Cell 2
9	←		CELL UPDATE CONFIRM	Message sent on DCCH with IE "RRC State Indicator" is set to "CELL_PCH".

Specific Message Contents

The contents of system information block 4 and 11 messages are identical as system information block 4 and 11 messages as found in 34.108 clause 6.1 with the following exceptions:

Contents of System Information Block type 4 (FDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintersearch	0 dB
- SsearchHCS	17 (35 dB)
- RAT List	This parameter is configurable
- $S_{limit,SearchRAT}$	0
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- $Qhyst1_S$	5 (gives actual value of 10 dB)
- $Qhyst2_S$	Not Present
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	40 (results in actual value of –75)
- TcrMax	Not Present

Contents of System Information Block type 4 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	TDD
- Sintersearch	0 dB
- SsearchHCS	23 (47 dB)
- RAT List	This parameter is configurable
- Qrxlevmin	-52 (-103 dBm)
- $Qhyst1_S$	5 (gives actual value of 10 dB)
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	40 (results in actual value of –75)
- TcrMax	Not Present

Contents of System Information Block type 11 (FDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB

Information Element	Value/remark
- Qrxlevmin	-58 (-115 dBm)

Contents of System Information Block type 11 (3.84 Mcps TDD, 1.28 Mcps TDD 7.68 Mcps TDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS34.108: Default settings for cell No.2 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.1 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.3 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD

Information Element	Value/remark
- Qrxlevmin	-52 (-103 dBm)

Contents of System Information Block type 11 (FDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1$_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1$_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	FDD
- Qqualmin	-20 dB

Information Element	Value/remark
- Qrxlevmin	-58 (-115 dBm)

Contents of System Information Block type 11 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS34.108: Default settings for cell No.3 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.1 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 in TS 34.108: Default settings for cell No.2 (TDD)
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	30 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	40 (results in actual value of –75)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	inf
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)

CELL UPDATE

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 5 and 8)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

8.3.1.24.5 Test requirement

After step 3 the UE shall reselect to cell 3 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE "Cell update cause".

After step 6 the UE shall reselect to cell 2 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE "Cell update cause".

8.3.1.25 CELL UPDATE: Radio Link Failure (T314=0, T315=0)

8.3.1.25.1 Definition

8.3.1.25.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_DCH state and the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6; or

…

4> perform cell update using the cause "radio link failure".

When initiating cell update procedure, the UE shall:

…

1> if the UE is in CELL_DCH state:

…

2> if the stored values of the timer T314 and timer T315 are both equal to zero; or

…

3> release all its radio resources;

3> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

3> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

3> clear the variable ESTABLISHED_RABS;

3> enter idle mode;

3> perform other actions when entering idle mode from connected mode as specified in TS 25.331 subclause 8.5.2;

3> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1.2

8.3.1.25.3 Test purpose

1. To confirm that the UE releases all resources and enters idle mode when there is a radio link failure.

8.3.1.25.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 and Cell 2 are active).

UE: PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) and services supported by the UE. If UE supports PS+CS but only supports streaming service in CS domain then state 6-9, 6-10 are applied.

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled "System Information Block type 1 (supported PLMN type is GSM-MAP)" as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T314	0
- T315	0

Test Procedure

Table 8.3.1.25

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.25 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked 'T0' denote the initial conditions.

The UE is brought to CELL_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.25. The UE shall detect a radio link failure in cell 1 and indicate to the non-access stratum the release of all the radio bearers. Then it shall attempt to re-select to cell 2. After that, it shall then enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 2.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				In the initial set up procedure, the SS shall request UE to set timer T314 and T315 to 0.
2				SS configures cell 1 and 2 according to column 'T1' in table 8.3.1.25.
3				SS waits for 5 seconds.
4	←→		CALL C.1	SS execute this procedure in cell 2. If the test result of C.1 indicates that UE is in Idle Mode state, the test passes, otherwise it fails.

Specific Message Contents

None.

8.3.1.25.5 Test requirement

After step 2, the UE shall release all its radio bearers.

After step 3, the UE shall be in idle mode state in cell 2.

8.3.1.26 Cell Update: Radio Link Failure (T314>0, T315=0), PS RAB established

8.3.1.26.1 Definition

8.3.1.26.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_DCH state; and

2> if the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

…

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

2> if the stored values of the timer T314 and timer T315 are both equal to zero; or

2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":

…

2> if the stored value of the timer T314 is equal to zero:

…

2> if the stored value of the timer T315 is equal to zero:

3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";

3> in the variable RB_TIMER_INDICATOR set the IE "T315 expired" to TRUE.

2> if the stored value of the timer T314 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":

4> start timer T314.

3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":

4> start timer T314.

2> if the stored value of the timer T315 is greater than zero:

…

2> for the released radio bearer(s):

3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;

3> when all radio bearers belonging to the same radio access bearer have been released:

4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;

4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.

2> select a suitable UTRA cell according to TS 25.304;

2> set the variable ORDERED_RECONFIGURATION to FALSE.

1> set the variables PROTOCOL_ERROR_INDICATOR, FAILURE_INDICATOR, UNSUPPORTED_CONFIGURATION and INVALID_CONFIGURATION to FALSE;

1> set the variable CELL_UPDATE_STARTED to TRUE;

1> if the UE is not already in CELL_FACH state:

2> move to CELL_FACH state;

2> select PRACH according to s TS 25.331 subclause 8.5.17;

2> select Secondary CCPCH according to s TS 25.331 subclause 8.5.19;

2> use the transport format set given in system information as specified in TS 25.331 subclause 8.6.5.1.

1> if the UE performs cell re-selection:

2> clear the variable C_RNTI; and

2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

If the received CELL UPDATE CONFIRM message would cause the UE to transit to CELL_DCH state; and

1> in case of a received CELL UPDATE CONFIRM message:

2> if the UE failed to establish the physical channel(s) indicated in the received CELL UPDATE CONFIRM message

…

the UE shall:

1> if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:

2> set the variable ORDERED_RECONFIGURATION to FALSE.

1> if V302 is equal to or smaller than N302:

2> select a suitable UTRA cell according to TS 25.304;

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "Radio link failure";

2> submit the CELL UPDATE message for transmission on the uplink CCCH;

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

…

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.26.3 Test purpose

1. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T315 and try to find a new cell after detecting that a radio link failure has occurred.

8.3.1.26.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 and cell 2 are active).

UE: PS_DCCH+DTCH_DCH (state 6-10) in cell 1 or PS+CS-DCCH+DTCH_DCH (state 6-14) in cell 1, if UE supports both CS and PS domains.

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled “System Information Block type 1 (supported PLMN type is GSM-MAP)” as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T315	0

Test Procedure

Table 8.3.1.26

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.26 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is brought to CELL_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.26. The UE shall detect a radio link failure in cell 1.

UE shall release of the radio bearer which is associated with T315, if the latter has been set up in the initial condition.

Then it shall attempt to re-select to cell 2. After that, it shall then enter CELL_FACH state and transmit CELL UPDATE on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes dedicated physical channel parameters on downlink DCCH. Then the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

SS transmits COUNTER CHECK message to UE. UE shall transmit a COUNTER CHECK RESPONSE message back to SS.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 and 2 according to column "T1" in table 8.3.1.26. SS starts to listen to the uplink CCCH of cell 2.
2				The UE detects the radio link failure.
3	→		CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
4	←		CELL UPDATE CONFIRM	Including dedicated physical channel parameters.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
6	←		COUNTER CHECK	SS sent the COUNT-C info for the RBs that were established in the initial condition.
7	→		COUNTER CHECK RESPONSE	

Specific Message Contents

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
-SRNC Identity	Check to see if set to value assigned in cell 1.
- S-RNTI	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator	
- T314 expired	FALSE
- T315 expired	TRUE

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

If the initial condition of the UE is in state 6-10, then

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RRC CONNECTION SETUP message: UM (Transition to CELL_DCH) found in TS 34.108 clause 9.
Downlink information common for all radio links	Same as the set defined in RRC CONNECTION SETUP message: UM (Transition to CELL_DCH) found in TS 34.108 clause 9.
Downlink information per radio link list	Same as the set defined in RRC CONNECTION SETUP message: UM (Transition to CELL_DCH) found in TS 34.108 clause 9.

If the initial condition of the UE is in state 6-14, then

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.

COUNTER CHECK (Step 6)

Information Element	Value/remark
Message Type	
RRC transaction identifier	0
Integrity check info	Calculated value
RB COUNT-C MSB information	
- RB identity	Set to the RB identity that was release by the UE upon radio link failure
- COUNT-C MSB uplink	Arbitrary COUNT-C MSB
- COUNT-C MSB downlink	Arbitrary COUNT-C MSB

COUNTER CHECK RESPONSE (Step 7)

Information Element	Value/remark
Message Type	
RRC transaction identifier	0
Integrity check info	Not checked
RB COUNT-C information	
- RB identity	Check to see if set to the RB identity that was release by the UE upon radio link failure
- COUNT-C uplink	Check to see if COUNT-C MSB is set to arbitrary value given in step 13 and LSB is fill with '0'
- COUNT-C downlink	Check to see if COUNT-C MSB is set to arbitrary value given in step 13 and LSB is fill with '0'

8.3.1.26.5 Test requirement

After step 2, the UE shall detect the presence of cell 2, perform cell re-selection and transmit a CELL UPDATE message.

After step 4, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 6, the UE shall transmit a COUNTER CHECK RESPONSE message with the MSB part of the COUNT-C values set identical to COUNT-C MSB values in the COUNTER CHECK message in step 6.

8.3.1.27 Cell Update: Radio Link Failure (T314=0, T315>0), CS RAB

8.3.1.27.1 Definition

8.3.1.27.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_DCH state; and

2> if the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

…

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

…

2> if the stored values of the timer T314 and timer T315 are both equal to zero; or

2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":

3> release all its radio resources;

3> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

3> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

3> clear the variable ESTABLISHED_RABS;

3> enter idle mode;

3> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;

3> and the procedure ends.

2> for the released radio bearer(s):

3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;

3> when all radio bearers belonging to the same radio access bearer have been released:

4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;

4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.

2> select a suitable UTRA cell according to TS 25.304;

2> set the variable ORDERED_RECONFIGURATION to FALSE.

…

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.27.3 Test purpose

1. To confirm that the UE release radio access bearer which is associated with T314 and try to find a new cell after detecting that a radio link failure has occurred.

8.3.1.27.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 and Cell 2 are active).

UE: CS_DCCH+DTCH_DCH (state 6-9).

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled “System Information Block type 1 (supported PLMN type is GSM-MAP)” as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T314	0

Test Procedure

Table 8.3.1.27

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.27 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked 'T0' denote the initial conditions.

The UE is brought to CELL_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.27. The UE shall detect a radio link failure in cell 1.

The UE shall release radio bearer associated with T314 and enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 2.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 and 2 according to column 'T1' in table 8.3.1.27. SS starts to listen to the uplink CCCH of cell 2.
2				The UE detects the radio link failure.
3	←→		CALL C.1	SS execute this procedure in cell 2. If the test result of C.1 indicates that UE is in Idle Mode state, the test passes. Otherwise it fails.

Specific Message Contents

None.

8.3.1.27.5 Test requirement

After step 2, the UE shall detect the presence of cell 2 and enter idle mode state in cell 2.

8.3.1.28 Cell Update: Radio Link Failure (T314=0, T315>0), PS RAB

8.3.1.28.1 Definition

8.3.1.28.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_DCH state; and

2> if the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

…

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

2> if the stored values of the timer T314 and timer T315 are both equal to zero; or

2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":

…

2> if the stored value of the timer T314 is equal to zero:

3> release all radio bearers, associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314";

3> in the variable RB_TIMER_INDICATOR set the IE "T314 expired" to TRUE.

…

2> if the stored value of the timer T315 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":

4> start timer T315.

2> for the released radio bearer(s):

3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;

3> when all radio bearers belonging to the same radio access bearer have been released:

4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;

4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.

2> select a suitable UTRA cell according to TS 25.304;

2> set the variable ORDERED_RECONFIGURATION to FALSE.

…

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.28.3 Test purpose

1. To confirm that the UE release radio access bearer which is associated with T314 and try to find a new cell after detecting that a radio link failure has occurred.

8.3.1.28.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 and Cell 2 are active).

UE: PS_DCCH+DTCH_DCH (state 6-10) in cell 1 or PS+CS-DCCH+DTCH_DCH (state 6-14) in cell 1, if UE supports both CS and PS domains.

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled "System Information Block type 1 (supported PLMN type is GSM-MAP)" as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T314	0

Test Procedure

Table 8.3.1.28

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.28 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked 'T0' denote the initial conditions.

The UE is brought to CELL_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.28. The UE shall detect a radio link failure in cell 1.

The UE shall attempt to re-select to cell 2. After that, it shall then enter CELL_FACH state and transmit CELL UPDATE on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes dedicated physical channel parameters on downlink DCCH. Then the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH. SS transmits COUNTER CHECK message to UE. UE shall transmit a COUNTER CHECK RESPONSE message back to SS.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 and 2 according to column 'T1' in table 8.3.1.28. SS starts to listen to the uplink CCCH of cell 2.
2				The UE detects the radio link failure.
3	→		CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
4	←		CELL UPDATE CONFIRM	See message content.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
6	←		COUNTER CHECK	SS sent the COUNT-C info for the RBs that were established in the initial condition.
7	→		COUNTER CHECK RESPONSE	

Specific Message Contents

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator	
- T314 expired	TRUE
- T315 expired	FALSE

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4, with the following exception: A non-zero value in the range of 0-16777216 used for cell 2.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.

COUNTER CHECK (Step 6)

Information Element	Value/remark
Message Type	
RRC transaction identifier	0
Integrity check info	Calculated value
RB COUNT-C MSB information	
- RB identity	Set to the RB identity that was set up in the initial condition
- COUNT-C MSB uplink	Set to the value stored in the SS
- COUNT-C MSB downlink	Set to the value stored in the SS

COUNTER CHECK RESPONSE (Step 7)

Information Element	Value/remark
Message Type	
RRC transaction identifier	0
Integrity check info	Not checked
RB COUNT-C information	Not present

8.3.1.28.5 Test requirement

After step 2, the UE shall detect the presence of cell 2, perform cell re-selection and transmit a CELL UPDATE message.

At step 5, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

At step 7, the UE shall transmit a COUNTER CHECK RESPONSE message without including IE "RB COUNT-C information".

8.3.1.29 Cell Update: Radio Link Failure (T314>0, T315>0), CS RAB

8.3.1.29.1 Definition

8.3.1.29.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_DCH state; and

2> if the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

…

When initiating the cell update procedure, the UE shall:

…

1> if the UE is in CELL_DCH state:

2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

…

2> if the stored value of the timer T314 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":

4> start timer T314.

3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":

4> start timer T314.

2> if the stored value of the timer T315 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":

4> start timer T315.

…

Upon expiry of timer T314 the UE shall:

1> if timer T302 is running:

…

1> if timer T302 is not running and timer T315 is running:

2> set IE "T314 expired" in variable RB_TIMER_INDICATOR to TRUE;

2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314";

2> indicate release of those radio access bearers to upper layers;

2> delete all information about those radio access bearers from the variable ESTABLISHED_RABS.

1> if timers T302 and T315 are not running:

2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

2> clear the variable PDCP_SN_INFO;

2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;

2> release all its radio resources;

2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

2> clear the variable ESTABLISHED_RABS;

2> set the variable CELL_UPDATE_STARTED to FALSE;

2> enter idle mode;

2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;

2> and the procedure ends.

Upon expiry of timer T315 the UE shall:

1> if timer T302 is running:

…

1> if timer T302 is not running and timer T314 is running:

2> set IE "T315 expired" in variable RB_TIMER_INDICATOR to TRUE;

2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "use T315";

2> indicate release of those radio access bearers to upper layers;

2> delete all information about those radio access bearers from the variable ESTABLISHED_RABS.

1> if timers T302 and T314 are not running:

2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

2> clear the variable PDCP_SN_INFO;

2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;

2> release all its radio resources;

2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

2> clear the variable ESTABLISHED_RABS;

2> set the variable CELL_UPDATE_STARTED to FALSE;

2> enter idle mode;

2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;

2> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.29.3 Test purpose

1. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T314 and try to find a new cell after detecting that a radio link failure has occurred.

2. To confirm that the UE enters idle mode after T314 expires and T302 and T315 are not running.

8.3.1.29.4 Method of test

Initial Condition

System Simulator: 1 cell (Cell 1 is active).

UE: CS_DCCH+DTCH_DCH (state 6-9).

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled "System Information Block type 1 (supported PLMN type is GSM-MAP)" as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T314	12
- T315	30

Test Procedure

Table 8.3.1.29

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF
P-CCPCH RSCP (TDD)	dBm	-60	OFF

The UE is brought to CELL_DCH state after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.29. The UE shall detect a radio link failure in cell 1.

The SS shall wait for 12s (see Note 1) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.29. The UE shall release radio bearer associated with T314 and enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 1.

NOTE 1: Considering the timer tolerance of the UE, T314 may expire between 12s ±0.3s, therefore the SS must wait for at least 12.3s before it reconfigures it downlink transmission power. Since SS has a timer tolerance of 10% or 2*TTI+55ms (consider the greater value of the two), the test case shall set the SS to reconfigure the power level 13.67s after the SS configures the power settings according to column 'T1' in table 8.3.1.29.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 according to column 'T1' in table 8.3.1.29.
2				SS waits for 12s after the completion of step 1 and then configures cell 1 according to column 'T0' in table 8.3.1.29.
3	←→		CALL C.1	SS execute this procedure in cell 1. If the test result of C.1 indicates that UE is in Idle Mode state, the test passes. Otherwise it fails.

Specific Message Contents

None.

8.3.1.29.5 Test requirement

After step 2, the UE shall detect the presence of cell 1 and enter idle mode state in cell 1.

8.3.1.30 Cell Update: Radio Link Failure (T314>0, T315>0), PS RAB

8.3.1.30.1 Definition

8.3.1.30.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL_DCH state; and

2> if the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

…

When initiating the cell update procedure, the UE shall:

…

1> if the UE is in CELL_DCH state:

2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

…

2> if the stored value of the timer T314 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":

4> start timer T314.

3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":

4> start timer T314.

2> if the stored value of the timer T315 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":

4> start timer T315.

…

Upon expiry of timer T314 the UE shall:

1> if timer T302 is running:

…

1> if timer T302 is not running and timer T315 is running:

2> set IE "T314 expired" in variable RB_TIMER_INDICATOR to TRUE;

2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314";

2> indicate release of those radio access bearers to upper layers;

2> delete all information about those radio access bearers from the variable ESTABLISHED_RABS.

1> if timers T302 and T315 are not running:

2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

2> clear the variable PDCP_SN_INFO;

2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;

2> release all its radio resources;

2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

2> clear the variable ESTABLISHED_RABS;

2> set the variable CELL_UPDATE_STARTED to FALSE;

2> enter idle mode;

2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;

2> and the procedure ends.

Upon expiry of timer T315 the UE shall:

1> if timer T302 is running:

…

1> if timer T302 is not running and timer T314 is running:

2> set IE "T315 expired" in variable RB_TIMER_INDICATOR to TRUE;

2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "use T315";

2> indicate release of those radio access bearers to upper layers;

2> delete all information about those radio access bearers from the variable ESTABLISHED_RABS.

1> if timers T302 and T314 are not running:

2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

2> clear the variable PDCP_SN_INFO;

2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;

2> release all its radio resources;

2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

2> clear the variable ESTABLISHED_RABS;

2> set the variable CELL_UPDATE_STARTED to FALSE;

2> enter idle mode;

2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;

2> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.30.3 Test purpose

1. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T315 and try to find a new cell after detecting that a radio link failure has occurred.

2. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T314 and try to find a new cell after detecting that a radio link failure has occurred. (This test purpose is only applicable when CS RAB is set up in the initial condition.)

3. To confirm that the UE enters idle mode after T315 expires and T302 and T314 are not running.

8.3.1.30.4 Method of test

Initial Condition

System Simulator: 1 cell (Cell 1 is active).

UE: PS_DCCH+DTCH_DCH (state 6-10 or PS+CS-DCCH+DTCH_DCH (state 6-14), as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) and services supported by the UE. If UE supports PS+CS but only supports streaming service in CS domain then state 6-10 is applied.

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled "System Information Block type 1 (supported PLMN type is GSM-MAP)" as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T314	12
- T315	60
- UE Timers and constants in connected mode	
- T312	2

Test Procedure

Table 8.3.1.30

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF
P-CCPCH RSCP (TDD)	dBm	-60	OFF

The UE is brought to CELL_DCH state after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.30. The UE shall detect a radio link failure in cell 1.

Case A (the initial condition of the UE is in state 6-10):

The SS shall wait for 69.3s (see Note 2) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.30. The UE shall release radio bearer associated with T315 and enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 1.

Case B (the initial condition of the UE is in state 6-14):

The SS shall wait for 16.5s (see Note 1) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.30. The UE shall release radio bearer associated with T314 and attempt to re-select to cell 1. After that, it shall then enter CELL_FACH state and transmit CELL UPDATE on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes dedicated physical channel and transport channel parameters on downlink DCCH. Then the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH. The UE may also optionally send "Signalling Connection Release Indicator for CS domain, which can occur before or after TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. SS transmits COUNTER CHECK message to UE. UE shall transmit a COUNTER CHECK RESPONSE message back to SS. Then SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.30. The UE shall detect a radio link failure in cell 1. The SS shall wait for 69.3s (see Note 2) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.30. The UE shall release radio bearer associated with T315 and enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 1.

NOTE 1: Considering the timer tolerance of the UE, T314 may expire in 12s, therefore the SS must wait for at least 12.0s plus T313 (3.0s) for UE to detect Radio Link Failure before it reconfigures downlink transmission power. Since SS has a timer tolerance of 10% or 2*TTI+55ms (consider the greater value of the two), the test case shall set the SS to reconfigure the power level 16.5s after the SS configures the power settings according to column 'T1' in table 8.3.1.30.

NOTE 2: Considering the timer tolerance of the UE, T315 may expire in 60s, therefore the SS must wait for at least 60.0s plus T313 (3.0s) for UE to detect Radio Link Failure before it reconfigures it downlink transmission power. Since SS has a timer tolerance of 10% or 2*TTI+55ms (consider the greater value of the two), the test case shall set the SS to reconfigure the power level 69.3s after the SS configures the power settings according to column 'T1' in table 8.3.1.30.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 according to column 'T1' in table 8.3.1.30.
2				For Case A, go to step 9. SS waits for 16.5s after the completion of step 1 (for Case B) and then configures cell 1 according to column 'T0' in table 8.3.1.30.
3	→		CELL UPDATE	UE shall select cell 1 and enter CELL_FACH state to transmit this message
4	←		CELL UPDATE CONFIRM	See message content.
4a	→		SIGNALLING CONNECTION RELEASE INDICATION	UE can optionally send this PDU. Steps 4a and 5 can occur in any order.
5	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
6	←		COUNTER CHECK	SS sent the COUNT-C info for the RBs that were established in the initial condition.
7	→		COUNTER CHECK RESPONSE	
8				SS configures cell 1 according to column 'T1' in table 8.3.1.30.
9				SS waits for 69.3s after the completion of step 1 (for Case A) or step 8 (for Case B) and then configures cell 1 according to column 'T0' in table 8.3.1.30.
10	←→		CALL C.1	SS execute this procedure in cell 1. If the test result of C.1 indicates that UE is in Idle Mode state, the test passes. Otherwise it fails.

Specific Message Contents

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator	
- T314 expired	TRUE
- T315 expired	FALSE

SIGNALLING CONNECTION RELEASE INDICATION (Step 4a)

Information Element	Value/remark
CN domain identity	CS domain

CELL UPDATE CONFIRM (Step 4) if CS service to be tested for RRC test cases is Speech

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
UL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Deleted UL TrCH Information	
- Uplink transport channel type	DCH
- Transport channel identity	1
Deleted UL TrCH Information	
- Uplink transport channel type	DCH
- Transport channel identity	2
Deleted UL TrCH Information	
- Uplink transport channel type	DCH
- Transport channel identity	3
DL Transport channel information common for all transport channel	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Deleted DL TrCH information	
- Downlink transport channel type	DCH
- Transport channel identity	6
Deleted DL TrCH Information	
- Downlink transport channel type	DCH
- Transport channel identity	7
Deleted DL TrCH Information	
- Downlink transport channel type	DCH
- Transport channel identity	8
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.

CELL UPDATE CONFIRM (Step 4) , if CS service to be tested for RRC test cases is non-speech

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
UL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Deleted UL TrCH Information	
- Uplink transport channel type	DCH
- Transport channel identity	1
DL Transport channel information common for all transport channel	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Deleted DL TrCH information	
- Downlink transport channel type	DCH
- Transport channel identity	6
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.

COUNTER CHECK (Step 6)

Information Element	Value/remark
Message Type	
RRC transaction identifier	0
Integrity check info	Calculated value
RB COUNT-C MSB information	
- RB identity	Set to the RB identity that was set up in the initial condition and support PS service.
- COUNT-C MSB uplink	Set to the value stored in the SS
- COUNT-C MSB downlink	Set to the value stored in the SS

COUNTER CHECK RESPONSE (Step 7)

Information Element	Value/remark
Message Type	
RRC transaction identifier	0
Integrity check info	Not checked
RB COUNT-C information	Not present

8.3.1.30.5 Test requirement

Case A:

After step 2, the UE shall detect the presence of cell 1 and enter idle mode state in cell 1.

Case B:

After step 2, the UE shall detect the presence of cell 1, perform cell re-selection and transmit a CELL UPDATE message.

After step 4, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 6, the UE shall transmit a COUNTER CHECK RESPONSE message without including IE "RB COUNT-C information".

After step 9, the UE shall detect the presence of cell 1 and enter idle mode state in cell 1.

8.3.1.31 Cell Update: re-entering of service area from URA_PCH after T316 expiry but before T317 expiry

8.3.1.31.1 Definition

8.3.1.31.2 Conformance requirement

If the UE detects the "out of service area" and the UE is in URA_PCH or CELL_PCH state it shall perform the following actions:

1> start timer T316;

1> perform processes described in subclause 7.2.2.

….

In the URA_PCH or CELL_PCH state the UE shall perform the following actions:

NOTE: Neither DCCH nor DTCH are available in these states.

1> if the UE is "in service area":

….

1> if the UE is "out of service area":

2> perform cell selection process as specified in [4];

2> run timer T316;

2> run timer T305.

….

On T316 expiry the UE shall perform the following actions. The UE shall:

1> if "out of service area" is detected:

2> start timer T317;

2> move to CELL_FACH state;

2> perform processes described in subclause 7.2.2.

1> if "in service area" is detected:

….

If the UE detects "in service area" before T317 expiry the UE shall perform the following actions. If no cell update procedure or URA update procedure is ongoing, the UE shall:

1> stop T317;

1> if T307 is active:

2> stop T307.

1> initiate the cell update procedure using as cause "Re-entering service area" as specified in subclause 8.3.1;

1> perform processes described in subclause 7.2.2.

If a cell update procedure or URA update procedure is ongoing, the UE shall:

1> stop T317;

1> perform the actions as specified in 8.3.1.

Reference

3GPP TS 25.331 clause 8.3.1, 8.5.5.1.1, 8.5.5.2.2, 8.5.5.3, 7.2.2.1, and 7.2.2.2.

8.3.1.31.3 Test purpose

To confirm that the UE executes a cell update procedure when the UE re-enters the service area before the expiry of timer T317, after expiry of T316.

8.3.1.31.4 Method of test

Initial Condition

System Simulator: 1 cell with URA-ID 1 and the downlink transmission power shown in column marked "T0" in table 8.3.1.31.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, with URA-ID 1 in the list of URA-ID.

Test Procedure

Table 8.3.1.31

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Mid Range Test Frequency	
CPICH Ec	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.1.31 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is initially in URA_PCH state. The content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.31 so that S<0. When the UE detects that it is out of service area, it will start T316 and search for a cell to camp. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.31 within a time equivalent to T316+T317 but larger than T316, so that S>0. The UE shall detect that it returns back in service area before T317 expires. Since the UE has moved to CELL_FACH state on expiry of T316, it shall now transmit a CELL UPDATE message which contains the value "re-entering service area" in IE "Cell update cause" to the SS on the uplink CCCH. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes the IE "new C-RNTI", and "new U-RNTI" to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE starts operating from URA_PCH state.
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		PAGING TYPE 1	Include IE "BCCH modification info"

		void	
		void	
2			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.31 such that the cell 1 is no longer suitable for camping i.e. S<0.
3			The UE shall detect a "out of service area" condition, start T316. The UE shall start T317 on expiry of T316)
4			60 seconds after step 2 (see note 1), the SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.31 before T317 expires.
5	→	CELL UPDATE	Value "re-entering service area" shall be set in IE "Cell update cause"
6	←	CELL UPDATE CONFIRM	
7	→	UTRAN MOBILITY INFORMATION CONFIRM	
8	←→	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

NOTE: The 60 seconds in step 4 should be large enough for any UE to have detected the out of service area condition (Nserv consecutive DRX cycles + 12s) and have started T317 after T316 expiry (default=30s), but well before T317 expiry.

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	A valid MIB value tag as defined in TS 25.331 that is different from the previous value.
Scheduling information	Scheduling info for System Information Type 3
- Cell Value tag	A value that is different from the previous Cell value tag
Scheduling information	Scheduling info for System Information Type 4
- Cell Value tag	A value that is different from the previous Cell value tag

SYSTEM INFORMATION BLOCK TYPE 3 and 4 (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
Qrxlevmin	-70

PAGING TYPE 1 (Step 1b)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Paging record list	Not Present
BCCH modification info	
MIB Value tag	A valid MIB value tag as defined in TS 25.331 that is different from the previous value.
BCCH modification time	Not present

CELL UPDATE (Step 5)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 're-entering service area'

CELL UPDATE CONFIRM (Step 6)

Use the same message sub-type found in TS 34.108 clause 9, with the exception of the following IEs:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 0101 0101'
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 7)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE.

8.3.1.31.5 Test requirement

After step 2 the UE shall detect that it is out of service area and shall not send a URA UPDATE on the uplink CCCH channel.

After step 4 the UE shall transmit a CELL UPDATE message which sets value "re-entering service area" into IE "Cell update cause".

After step 6 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

8.3.1.32 Cell Update: Transition from URA_PCH to CELL_DCH, start of HS-DSCH reception

8.3.1.32.1 Definition

All UEs which support FDD or TDD and HS-PDSCH.

8.3.1.32.2 Conformance requirement

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

…

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

…

…

If the IE "New H-RNTI" is included, the UE shall:

1> if the IE "Downlink HS-PDSCH Information" is also included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 of TS 25.331 applied on the received message:

2> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

1> if the choice "DL parameters" is set to 'HSDSCH':

2> if the IE "HARQ Info" is included:

3> perform the actions specified in subclause 8.6.5.6b of TS 25.331.

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "New H-RNTI" is included:

2> perform the actions as specified in subclause 8.6.3.1b of TS 25.331.

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33 of TS 25.331.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34 of TS 25.331.

1> For FDD, if, as a result of the received message, the variable H_RNTI is set and the UE has a stored IE "HS-SCCH Info" and a stored IE "Measurement Feedback Info"; and

1> For FDD, if the UE has received IE "Uplink DPCH Power Control Info" and stored Δ_{ACK}, Δ_{NACK} and Ack-NACK Repetition factor; and

1> For FDD, if the UE has stored IEs "MAC-hs queue to add or reconfigure list", "MAC-d PDU size Info" and "RB Mapping Info" corresponding to the HS-PDSCH configuration;

2> set the variable HS_DSCH_RECEPTION to TRUE;

2> start HS-DSCH reception procedures according to the stored HS-PDSCH configuration:

3> as stated in subclause 8.6.3.1b of TS 25.331 for the IE "H-RNTI";

3> in subclause 8.6.6.33 of TS 25.331 for the IE "HS-SCCH Info"; and

3> in subclause 8.6.6.34 of TS 25.331 for the IE "Measurement Feedback Info".

…

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

1> in the case of TDD:

2> receive the HS-SCCH(s) according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> transmit the HS-SICH according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> for HS-SCCH power control the UE shall use the "BLER target" signalled in the first occurrence of the "HS-SCCH Set Configuration".

2> in 3.84 Mcps TDD and 7.68 Mcps TDD:

3> use the parameters specified in the IE "HS-SICH power control info" for open loop power control as defined in subclause 8.5.7.

2> in 1.28 Mcps TDD:

3> use the IE " $PRX_{HS\text{-}SICH}$ " and "ACK-NAK power offset" to calculate and set an initial uplink transmission power;

3> use the IE " TPC step size" upon reception of TPC commands for closed loop power control.

…

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

Reference

3GPP TS 25.331 clauses 8.1.2, 8.3.1, 8,6,3,1, 8.6.3.1b, 8.6.5.6, 8.6.6.32, 8.6.6.33, 8.6.6.34

8.3.1.32.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL UPDATE CONFIRM message with a physical channel configuration causing it to start HS-DSCH reception.

8.3.1.32.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS_DCCH_DTCH_HS_DSCH (state 6-17) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in the CELL_DCH state and has a radio bearer established that is mapped to HS-DSCH. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to URA_PCH. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters URA_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE enters the CELL_FACH state to transmit a CELL UPDATE message using uplink CCCH in respond to the paging.

The SS transmits CELL UPDATE CONFIRM message which includes DPCH and HS-PDSCH physical channel parameters on the downlink DCCH. Then the UE resumes HS-DSCH reception and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			PHYSICAL CHANNEL RECONFIGURATION	
2			PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the URA_PCH state
2a	SS			SS sends the L2 ack on the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then waits 5 seconds to allow the UE to read system information before the next step. Note: The SS should continue to keep the dedicated channel configuration during the time when the L2 ack is sent to the UE.
3	←		PAGING TYPE 1	
4	→		CELL UPDATE	The UE enters the CELL_FACH state.
5	←		CELL UPDATE CONFIRM	
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the CELL_DCH state and starts HS-DSCH reception.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3
URA Identity	0000 0000 0000 0001B

Paging Type 1 (Step 3)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.

8.3.1.32.5 Test requirement

After step 1, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 3, the UE shall transmit a CELL UPDATE message.

After step 5, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

8.3.1.32a Cell Update: Transition from URA_PCH to CELL_DCH, start of HS-DSCH reception (Carriers belong to different frequency band for LCR TDD)

8.3.1.32a.1 Definition and applicability

Same definition and applicability as in clause 8.3.1.32.1 except that UE supports the primary carrier and the secondary carriers which are configured into different frequency bands

8.3.1.32a.2 Conformance requirement

Same conformance requirement as in clause 8.3.1.32 2.

8.3.1.32a.3 Test purpose

Same test purpose as in clause8.3.1.32.3 except that UE can work in the primary carrier and the secondary carriers which are configured into different frequency bands.

8.3.1.32a.4 Method of test

Initial Condition

System Simulator: 1 cell, three carriers, each cell configure 3 carriers, one is the primary carrier, the other two are secondary carrier, primary carrier and secondary carrier which are configured into different frequency bands.

UE: PS_DCCH_DTCH_HS_DSCH (state 6-17) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports TDD
- UE supports HS-PDSCH
- UE supports multiple frequency bands simultaneously

Test Procedure:

The UE is in the CELL_DCH state and has a radio bearer established that is mapped to HS-DSCH. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to URA_PCH. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters URA_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE enters the CELL_FACH state to transmit a CELL UPDATE message using uplink CCCH in respond to the paging.

The SS transmits CELL UPDATE CONFIRM message which includes DPCH and HS-PDSCH physical channel parameters on the downlink DCCH. Then the UE resumes HS-DSCH reception and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

Expected sequence:

Step	Direction		Message	Comment
	UE	SS		
				Note: Cell is configured with primary carrier and the secondary carriers into different frequency bands.
1			PHYSICAL CHANNEL RECONFIGURATION	
2			PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the URA_PCH state
2a	SS			SS sends the L2 ack on the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then waits 5 seconds to allow the UE to read system information before the next step. Note: The SS should continue to keep the dedicated channel configuration during the time when the L2 ack is sent to the UE.
3	←		PAGING TYPE 1	
4	→		CELL UPDATE	The UE enters the CELL_FACH state.
5	←		CELL UPDATE CONFIRM	
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the CELL_DCH state and starts HS-DSCH reception.

Same specific message contents as in clause8.3.1.32.4.

8.3.1.32a.5 Test requirements

Same test requirements as in clause8.3.1.32.5.

8.3.1.33 Cell Update: Transition from CELL_PCH to CELL_DCH, start of HS-DSCH reception, frequency modification

8.3.1.33.1 Definition

All UEs which support FDD or TDD and HS-PDSCH.

8.3.1.33.2 Conformance requirement

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

…

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

…

…

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

If the new state is CELL_PCH, the response message shall be transmitted using the old configuration before the state transition, but the new C-RNTI shall be used if the IE "New C-RNTI" was included in the received reconfiguration message, and the UE shall:

1> when RLC has confirmed the successful transmission of the response message:

…

2> enter the new state (CELL_PCH);

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

2> if the IE "Frequency info" is included in the message:

3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

4> act on the IE "Frequency info" as specified in subclause 8.6.6.1 in TS 25.331.

…

If the IE "New H-RNTI" is included, the UE shall:

1> if the IE "Downlink HS-PDSCH Information" is also included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 of TS 25.331 applied on the received message:

2> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

1> if the choice "DL parameters" is set to 'HSDSCH':

2> if the IE "HARQ Info" is included:

3> perform the actions specified in subclause 8.6.5.6b of TS 25.331.

…

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

1> if the IE "Frequency info" is included:

2> if the frequency is different from the currently used frequency:

3> store and use the frequency indicated by the IE "Frequency Info"; and

3> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only) or TS 25.224 (TDD only).

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "New H-RNTI" is included:

2> perform the actions as specified in subclause 8.6.3.1b of TS 25.331.

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33 of TS 25.331.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34 of TS 25.331.

1> For FDD, if, as a result of the received message, the variable H_RNTI is set and the UE has a stored IE "HS-SCCH Info" and a stored IE "Measurement Feedback Info"; and

1> For FDD, if the UE has received IE "Uplink DPCH Power Control Info" and stored Δ_{ACK}, Δ_{NACK} and Ack-NACK Repetition factor; and

1> For FDD, if the UE has stored IEs "MAC-hs queue to add or reconfigure list", "MAC-d PDU size Info" and "RB Mapping Info" corresponding to the HS-PDSCH configuration;

2> set the variable HS_DSCH_RECEPTION to TRUE;

2> start HS-DSCH reception procedures according to the stored HS-PDSCH configuration:

3> as stated in subclause 8.6.3.1b of TS 25.331 for the IE "H-RNTI";

3> in subclause 8.6.6.33 of TS 25.331 for the IE "HS-SCCH Info"; and

3> in subclause 8.6.6.34 of TS 25.331 for the IE "Measurement Feedback Info".

…

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

1> in the case of TDD:

2> receive the HS-SCCH(s) according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> transmit the HS-SICH according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> for HS-SCCH power control the UE shall use the "BLER target" signalled in the first occurrence of the "HS-SCCH Set Configuration".

2> in 3.84 Mcps TDD and 7.68 Mcps TDD:

3> use the parameters specified in the IE "HS-SICH power control info" for open loop power control as defined in subclause 8.5.7.

2> in 1.28 Mcps TDD:

3> use the IE " $PRX_{HS-SICH}$ " and "ACK-NAK power offset" to calculate and set an initial uplink transmission power;

3> use the IE " TPC step size" upon reception of TPC commands for closed loop power control.

…

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

Reference

3GPP TS 25.331 clauses 8.1.2, 8.2.2.3, 8.2.2.4, 8.3.1, 8,6,3,1, 8.6.3.1b, 8.6.5.6, 8.6.6.1, 8.6.6.32, 8.6.6.33, 8.6.6.34

8.3.1.33.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL UPDATE CONFIRM message with a physical channel configuration causing it to start HS-DSCH reception on a different cell and frequency. To confirm that the UE enters CELL_PCH state on another frequency and stops HS-DSCH reception when it receives a PHYSICAL CHANNEL RECONFIGURATION message.

8.3.1.33.4 Method of test

Initial Condition

System Simulator: 2 cells - cell 1 is active and cell 6 is inactive.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS_DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD or TDD
- UE supports HS-PDSCH

Test Procedure

Table 8.3.1.33

Parameter	Unit	Cell 1			Cell 6		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Frequency (f_1)			High Range Frequency (f_2)		
CPICH Ec (FDD)	dBm/3.84MHz	-60	-72	-60	Off	-55	-72
P-CCPCH RSCP (TDD)	dBm	-60	-72	-60	Off	-55	-72

Table 8.3.1.33 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

SS initiates P25 to make the UE move to state 6-17 as specified in TS34.108 clause7.4. The UE is in the CELL_DCH state in cell 1 and has a radio bearer established that is mapped to HS-DSCH. The SS has configured its downlink transmission power setting according to columns "T0" in table 8.3.1.33.

The SS switches its downlink transmission power settings to columns "T1". The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to CELL_PCH in cell 6. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC, selects cell 6 and enters CELL_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE enters the CELL_FACH state to transmit a CELL UPDATE message using uplink CCCH in cell 6 in response to the paging.

The SS switches its downlink transmission power settings to columns "T2". The SS transmits CELL UPDATE CONFIRM message, which includes DPCH and HS-PDSCH physical channel parameters for cell 1 on the downlink DCCH. Then the UE establishes the DPCH and HS-PDSCH in cell 1 and resumes HS-DSCH reception and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH in cell 1.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message (Step 0)
1				The UE is in CELL_DCH state in cell 1 and the SS configures its downlink transmission power setting according to columns "T1" in table 8.3.1.33.
2			PHYSICAL CHANNEL RECONFIGURATION	
3			PHYSICAL CHANNEL RECONFIGURATION COMPLETE	After transmitting this message, the UE enters the CELL_PCH state in cell 6
4	SS			SS sends the L2 ack on the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then waits 5 seconds to allow the UE to read system information before the next step. Note: The SS should continue to keep the dedicated channel configuration during the time when the L2 ack is sent to the UE.
5	←		PAGING TYPE 1	
6	→		CELL UPDATE	The UE enters the CELL_FACH state.
7	SS			The SS switches its downlink transmission power settings to columns "T2" in table 8.3.1.33.
8	←		CELL UPDATE CONFIRM	
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE changes to cell 1, enters the CELL_DCH state and starts HS-DSCH reception.
10	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER SETUP (Step 0)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
RAB information for setup	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.

PHYSICAL CHANNEL RECONFIGURATION (Step 2) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark	Version
New C-RNTI RRC State Indicator UTRAN DRX cycle length coefficient Frequency info - CHOICE mode	Not Present CELL_PCH 3 FDD	
- UARFCN uplink(Nu)	Not present Absence of this IE is equivalent to applying the default duplex distance defined for the operating frequency according to 3GPP TS 25.101 [21]	
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6	
Downlink information for each radio link list - Downlink information for each radio link		
- Choice mode	FDD	
- Primary CPICH info		
- Primary scrambling code	Set to the Primary scrambling code used for cell6	
- Serving HS-DSCH radio link indicator	FALSE	
- Downlink DPCH info for each RL	Not present	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

PHYSICAL CHANNEL RECONFIGURATION (Step 2) (1.28Mcps TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark	Version
New C-RNTI RRC State Indicator UTRAN DRX cycle length coefficient Frequency info - CHOICE mode	Not Present CELL_PCH 3 TDD	
- UARFCN (Nt)	Same UARFCN as used for cell 6	
Downlink information for each radio link list - Downlink information for each radio link		
- Choice mode	TDD	
- Primary CCPCH info		
- Choice mode	TDD	
- Choice TDD Option	1.28Mcps TDD	
- TSTD indicator	FALSE	
- Cell parameters ID	Reference clause 6.1.4 Default settings for cell 6	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL	Not present	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

PHYSICAL CHANNEL RECONFIGURATION (Step 2) (3.84Mcps TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark	Version
New C-RNTI RRC State Indicator UTRAN DRX cycle length coefficient Frequency info - CHOICE mode	Not Present CELL_PCH 3 TDD	
- UARFCN (Nt)	Same UARFCN as used for cell 6	
Downlink information for each radio link list - Downlink information for each radio link		
- Choice mode	TDD	
- Primary CCPCH info		
- Choice mode	TDD	
- Choice TDD Option	3.84Mcps TDD	
- Choice SyncCase	Sync Case 2	
- Timeslot	0	
- Cell parameters ID	Reference clause 6.1.4 Default settings for cell 6	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL	Not present	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

PHYSICAL CHANNEL RECONFIGURATION (Step 2) (3.84Mcps TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark	Version
New C-RNTI RRC State Indicator UTRAN DRX cycle length coefficient Frequency info - CHOICE mode	Not Present CELL_PCH 3 TDD	
- UARFCN (Nt)	Same UARFCN as used for cell 6	
Downlink information for each radio link list - Downlink information for each radio link		
- Choice mode	TDD	
- Primary CCPCH info		
- Choice mode	TDD	
- Choice TDD Option	7.68 Mcps TDD	
- Choice SyncCase	Sync Case 2	
- Timeslot	0	
- Cell parameters ID	Reference clause 6.1.4 Default settings for cell 6	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL	Not present	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

Paging Type 1 (Step 5)

Information Element	Value/remark
Message Type Paging record list Paging record - CHOICE Used paging identity - U-RNTI - SRNC Identity - S-RNTI - CN originated page to connected mode UE BCCH modification info	 Only 1 entry UTRAN identity Equal to the U-RNTI assigned earlier. Not Present Not Present

CELL UPDATE (Step 6)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - S-RNTI - SRNC Identity Cell Update Cause	 Check to see if set to value assigned in cell 1. Check to see if set to value assigned in cell 1. Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 8) (FDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark	Version
New H-RNTI	'0101 0101 0101 0101'	
RRC State indicator	CELL_DCH	
Frequency info	Set to the frequency of cell 1	
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information for each radio link list		
- Downlink information for each radio link		
- Choice mode	FDD	
- Primary CPICH info		
- Primary scrambling code	Set to the primary scrambling code of cell 1	
- Serving HS-DSCH radio link indicator	TRUE	
- Downlink DPCH info for each RL		
- Primary CPICH usage for channel estimation	Primary CPICH may be used	
- DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400	
- Secondary CPICH info	Not Present	
- DL channelisation code		
- Secondary scrambling code	1	
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set 1	
- Code number		
- Scrambling code change	No change	
- TPC combination index	0	
- Power offset $P_{TPC-DPDCH}$	Not Present	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Closed loop timing adjustment mode	Not Present	
- SCCPCH information for FACH		R99 and Rel-4 only

CELL UPDATE CONFIRM (Step 8) (1.28Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark	Version
New H-RNTI	'0101 0101 0101 0101'	
RRC State indicator	CELL_DCH	
Frequency info	Set to the frequency of cell 1	
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information for each radio link list		
- Downlink information for each radio link		
- Choice mode	TDD	
- Primary CCPCH info		
- Choice mode	TDD	
- Choice TDD Option	1.28Mcps TDD	
- TSTD indicator	FALSE	
- Cell parameters ID	Reference clause 6.1.4 Default settings for cell 1	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	

CELL UPDATE CONFIRM (Step 8) (3.84Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark	Version
New H-RNTI	'0101 0101 0101 0101'	
RRC State indicator	CELL_DCH	
Frequency info	Set to the frequency of cell 1	
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information for each radio link list		
- Downlink information for each radio link		
- Choice mode	TDD	
- Primary CCPCH info		
- Choice mode	TDD	
- Choice TDD Option	3.84Mcps TDD	
- Choice SyncCase	Sync Case 2	
- Timeslot	0	
- Cell parameters ID	Reference clause 6.1.4 Default settings for cell 1	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	

CELL UPDATE CONFIRM (Step 8) (7.68 Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark	Version
New H-RNTI	'0101 0101 0101 0101'	
RRC State indicator	CELL_DCH	
Frequency info	Set to the frequency of cell 1	
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information for each radio link list - Downlink information for each radio link - Choice mode	 TDD	
- Primary CCPCH info - Choice mode	 TDD	
- Choice TDD Option	7.68 Mcps TDD	
- Choice SyncCase	Sync Case 2	
- Timeslot	0	
- Cell parameters ID	Reference clause 6.1.4 Default settings for cell 1	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	

8.3.1.33.5 Test requirement

After step 2, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 5, the UE shall transmit a CELL UPDATE message.

After step 8, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC in cell 1.

8.3.1.33a Cell Update: Transition from CELL_PCH to CELL_DCH, start of HS-DSCH reception, frequency modification(TDD)

8.3.1.33a.1 Definition

All UEs which support TDD and HS-PDSCH.

8.3.1.33a.2 Conformance requirement

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

…

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

…

…

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

If the new state is CELL_PCH, the response message shall be transmitted using the old configuration before the state transition, but the new C-RNTI shall be used if the IE "New C-RNTI" was included in the received reconfiguration message, and the UE shall:

1> when RLC has confirmed the successful transmission of the response message:

…

2> enter the new state (CELL_PCH);

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or

- if the message is received on DCCH:

2> if the IE "Frequency info" is included in the message:

3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

4> act on the IE "Frequency info" as specified in subclause 8.6.6.1 in TS 25.331.

…

If the IE "New H-RNTI" is included, the UE shall:

1> if the IE "Downlink HS-PDSCH Information" is also included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 of TS 25.331 applied on the received message:

2> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

1> if the choice "DL parameters" is set to 'HSDSCH':

2> if the IE "HARQ Info" is included:

3> perform the actions specified in subclause 8.6.5.6b of TS 25.331.

…

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

1> if the IE "Frequency info" is included:

2> if the frequency is different from the currently used frequency:

3> store and use the frequency indicated by the IE "Frequency Info"; and

3> perform the physical layer synchronisation procedure A as specified in TS 25.224 (TDD only).

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "New H-RNTI" is included:

2> perform the actions as specified in subclause 8.6.3.1b of TS 25.331.

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33 of TS 25.331.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34 of TS 25.331.

2> set the variable HS_DSCH_RECEPTION to TRUE;

2> start HS-DSCH reception procedures according to the stored HS-PDSCH configuration:

3> as stated in subclause 8.6.3.1b of TS 25.331 for the IE "H-RNTI";

3> in subclause 8.6.6.33 of TS 25.331 for the IE "HS-SCCH Info"; and

3> in subclause 8.6.6.34 of TS 25.331 for the IE "Measurement Feedback Info".

…

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of TDD:

2> receive the HS-SCCH(s) according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> transmit the HS-SICH according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> for HS-SCCH power control the UE shall use the "BLER target" signalled in the first occurrence of the "HS-SCCH Set Configuration".

2> in 3.84 Mcps TDD and 7.68 Mcps TDD:

3> use the parameters specified in the IE "HS-SICH power control info" for open loop power control as defined in subclause 8.5.7.

2> in 1.28 Mcps TDD:

3> use the IE " $PRX_{HS-SICH}$ " and "ACK-NAK power offset" to calculate and set an initial uplink transmission power;

3> use the IE " TPC step size" upon reception of TPC commands for closed loop power control.

…

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

Reference

3GPP TS 25.331 clauses 8.1.2, 8.2.2.3, 8.2.2.4, 8.3.1, 8,6,3,1, 8.6.3.1b, 8.6.5.6, 8.6.6.1, 8.6.6.32, 8.6.6.33, 8.6.6.34

8.3.1.33a.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL UPDATE CONFIRM message with a physical channel configuration causing it to start HS-DSCH reception on a different cell and frequency. To confirm that the UE enters CELL_PCH state on another frequency and stops HS-DSCH reception when it receives a PHYSICAL CHANNEL RECONFIGURATION message.

8.3.1.33a.4 Method of test

Initial Condition

System Simulator: 2 cells - cell 1 is active and cell 6 is inactive. Each cell configure 3 carriers, one is the primary carrier, the other two are secondary carrier.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS_DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports TDD
- UE supports HS-PDSCH

Test Procedure

Table 8.3.1.33a

Parameter	Unit	Cell 1			Cell 6		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Frequency (f_1)			High Range Frequency (f_2)		
P-CCPCH RSCP (TDD)	dBm	-60	-72	-60	Off	-55	-72

Table 8.3.1.33 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

SS initiates P25 to make the UE move to state 6-17 as specified in TS34.108 clause7.4. The UE is in the CELL_DCH state in cell 1 and has a radio bearer established that is mapped to HS-DSCH. The SS has configured its downlink transmission power setting according to columns "T0" in table 8.3.1.33a.

The SS switches its downlink transmission power settings to columns "T1". The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to CELL_PCH in cell 6. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC, selects cell 6 and enters CELL_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE enters the CELL_FACH state to transmit a CELL UPDATE message using uplink CCCH in cell 6 in response to the paging.

The SS switches its downlink transmission power settings to columns "T2". The SS transmits CELL UPDATE CONFIRM message, which includes DPCH and HS-PDSCH physical channel parameters for cell 1 on the downlink DCCH. Then the UE establishes the DPCH and HS-PDSCH in cell 1 and resumes HS-DSCH reception and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH in cell 1.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message (Step 0)
1				The UE is in CELL_DCH state in cell 1 and the SS configures its downlink transmission power setting according to columns "T1" in table 8.3.1.33a.
2			PHYSICAL CHANNEL RECONFIGURATION	
3			PHYSICAL CHANNEL RECONFIGURATION COMPLETE	After transmitting this message, the UE enters the CELL_PCH state in cell 6
4	SS			SS sends the L2 ack on the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then waits 5 seconds to allow the UE to read system information before the next step. Note: The SS should continue to keep the dedicated channel configuration during the time when the L2 ack is sent to the UE.
5	←		PAGING TYPE 1	
6	→		CELL UPDATE	The UE enters the CELL_FACH state.
7	SS			The SS switches its downlink transmission power settings to columns "T2" in table 8.3.1.33a.
8	←		CELL UPDATE CONFIRM	
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE changes to cell 1, enters the CELL_DCH state and starts HS-DSCH reception.
10	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER SETUP (Step 0)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
RAB information for setup	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark	Version
New C-RNTI RRC State Indicator UTRAN DRX cycle length coefficient Frequency info - CHOICE mode	Not Present CELL_PCH 3 TDD	
- UARFCN (Nt)	Same UARFCN as used for cell 6	
Downlink information for each radio link list - Downlink information for each radio link		
- Choice mode	TDD	
- Primary CCPCH info		
- Choice mode	TDD	
- Choice TDD Option	1.28Mcps TDD	
- TSTD indicator	FALSE	
- Cell parameters ID	Reference clause 6.1.4 Default settings for cell 6	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL	Not present	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

Paging Type 1 (Step 5)

Information Element	Value/remark
Message Type Paging record list Paging record - CHOICE Used paging identity - U-RNTI - SRNC Identity - S-RNTI - CN originated page to connected mode UE BCCH modification info	 Only 1 entry UTRAN identity Equal to the U-RNTI assigned earlier. Not Present Not Present

CELL UPDATE (Step 6)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark	Version
New H-RNTI	'0101 0101 0101 0101'	
RRC State indicator	CELL_DCH	
Frequency info	Set to the frequency of cell 1	
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.	
Downlink information for each radio link list		
- Downlink information for each radio link		
- Choice mode	TDD	
- Primary CCPCH info		
- Choice mode	TDD	
- Choice TDD Option	1.28Mcps TDD	
- TSTD indicator	FALSE	
- Cell parameters ID	Reference clause 6.1.4 Default settings for cell 1	
- SCTD indicator	FALSE	
CellUpdateConfirm-CCCH-r5-TDD128-add-ext-IEs		
frequencyInfo	secondary carrier frequency in cell 6	

8.3.1.33a.5 Test requirement

After step 2, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 5, the UE shall transmit a CELL UPDATE message.

After step 8, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC in cell 1.

8.3.1.34 Cell Update: Transition from CELL_DCH to CELL_FACH, stop of HS-DSCH reception

8.3.1.34.1 Definition

8.3.1.34.2 Conformance requirement

1> Radio link failure:

…

3> if the UE is in CELL_DCH state and the criteria for radio link failure are met as specified in subclause 8.5.6 of TS 25.331; or

…

4> perform cell update using the cause "radio link failure".

When initiating the URA update or cell update procedure, the UE shall:

…

1> if HS-DSCH is configured:

2> stop any HS-DSCH reception procedures;

2> clear any stored HS-PDSCH configuration;

2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

2> release all HARQ resources;

2> remove any H-RNTI stored;

2> clear the variable H_RNTI;

2> set the variable HS_DSCH_RECEPTION to FALSE.

1> if the UE is not already in CELL_FACH state:

2> move to CELL_FACH state;

2> select PRACH according to subclause 8.5.17 of TS 25.331;

2> select Secondary CCPCH according to subclause 8.5.19 of TS 25.331;

2> use the transport format set given in system information as specified in subclause 8.6.5.1 of TS 25.331.

Reference

3GPP TS 25.331 clauses 8.3.1.2

8.3.1.34 .3 Test purpose

To confirm that the UE stops HS-DSCH reception after a radio link failure in CELL_DCH during HS-DSCH reception.

8.3.1.34 .4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 is active and cell 2 is inactive.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.34

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.34 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is in CELL_DCH state and only signalling radio bearers have been established. SS initiates P25 to make the UE to move to state 6-17 as specified in TS 34.108 clause 7.4. The UE is in the CELL_DCH state and has a radio bearer

established that is mapped to HS-DSCH. SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.34. The UE shall detect a radio link failure in cell 1.

Then it shall attempt to re-select to cell 2. After that, it shall then enter CELL_FACH state and transmit a CELL UPDATE message on the uplink CCCH to SS.

The SS transmits a CELL UPDATE CONFIRM message which request the UE to transit to CELL_FACH state. The UE responds with a RADIO BEARER RECONFIGURATION COMPLETE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message. (Step 0)
1				SS configures cell 1 and 2 according to column "T1" in table 8.3.1.34. SS starts to listen to the uplink CCCH of cell 2.
2				The UE detects the radio link failure and stops reception of HS-DSCH.
3	→		CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
4	←		CELL UPDATE CONFIRM	
5	→		RADIO BEARER RECONFIGURATION COMPLETE	

Specific Message Contents

System Information Block type 1

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2
- T313	2

RADIO BEARER SETUP (Step 0) (FDD)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9, with the following exception;
- MAC-d PDU size	656

RADIO BEARER SETUP (Step 0) (TDD)

Use the same message as specified for "Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108.

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Radio link failure”

CELL UPDATE CONFIRM (Step 4) (FDD)

Use the same message sub-type found in TS 34.108 clause 9 with the exception of the following IEs:

Information Element	Value/remark
New C-RNTI	'0101 0101 0101 0101'
RLC re-establish indicator (RB2, RB3 and RB4)	TRUE
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4

Information Element	Value/remark
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
Deleted DL TrCH Information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Added or Reconfigured DL TrCH information	
- MAC-d PDU size	336

CELL UPDATE CONFIRM (Step 4) (1.28Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9 with the exception of the following IEs:

Information Element	Value/remark
New C-RNTI	'0101 0101 0101 0101'
RLC re-establish indicator (RB2, RB3 and RB4)	TRUE
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4

Information Element	Value/remark
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DTCH)
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
Deleted DL TrCH Information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0

8.3.1.34 .5 Test requirement

After step 2, the UE shall transmit a CELL UPDATE message and stop HS-DSCH reception.

8.3.1.35 Cell Update: Transition from CELL_DCH to CELL_DCH, with active HS-DSCH reception

8.3.1.35 .1 Definition

8.3.1.35 .2 Conformance requirement

1> Radio link failure:

…

3> if the UE is in CELL_DCH state and the criteria for radio link failure are met as specified in subclause 8.5.6 of TS 25.331; or

…

4> perform cell update using the cause "radio link failure".

When initiating the URA update or cell update procedure, the UE shall:

…

1> if HS-DSCH is configured:

2> stop any HS-DSCH reception procedures;

2> clear any stored HS-PDSCH configuration;

2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

2> release all HARQ resources;

2> remove any H-RNTI stored;

2> clear the variable H_RNTI;

2> set the variable HS_DSCH_RECEPTION to FALSE.

Reference

3GPP TS 25.331 clauses 8.3.1.2

8.3.1.35 .3 Test purpose

To confirm that the UE keeps the RB mapping option for HS-DSCH reception after a radio link failure in CELL_DCH during HS-DSCH reception.

8.3.1.35.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 is active and cell 2 is inactive.

Specific Message Contents

System Information Block type 11

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Time to trigger	5000

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents)

UE: PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.35

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.35 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is in CELL_DCH state and only signalling radio bearers have been established. SS initiates P25 to make the UE to move to state 6-17 as specified in TS 34.108 clause 7.4. The UE is in the CELL_DCH state and has a radio bearer established that is mapped to HS-DSCH. SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.35. The UE shall detect a radio link failure in cell 1.

Then it shall attempt to re-select to cell 2. After that, it shall then enter CELL_FACH state and transmit a CELL UPDATE message on the uplink CCCH to SS.

The SS transmits a CELL UPDATE CONFIRM message which request the UE to transit to CELL_DCH state and start reception of HS-DSCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message. (Step 0)
1				SS configures cell 1 and 2 according to column "T1" in table 8.3.1.35. SS starts to listen to the uplink CCCH of cell 2.
2				The UE detects the radio link failure and stops reception of HS-DSCH.
3	→		CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
4	←		CELL UPDATE CONFIRM	
5	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2
- T313	2

RADIO BEARER SETUP (Step 0)

Use the same message as specified for “Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108.

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Radio link failure”

CELL UPDATE CONFIRM (Step 4)(FDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
RRC State indicator	CELL_DCH
UL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10
DL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Added or Reconfigured DL TrCH information list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.
CHOICE channel requirement - Scrambling Code Number	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10,with the following exception A non-zero value in the range of 0-16777215 used for cell 2
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10
Downlink information per radio link list - Primary CPICH info - Primary scrambling code	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10, with the following exception; 150

CELL UPDATE CONFIRM (Step 4)(1.28Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
RRC State indicator	CELL_DCH
UL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10
DL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Added or Reconfigured DL TrCH information list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10
Downlink information per radio link list - Primary CCPCH info - Cell parameters ID	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10, with the following exception; Set to the Cell parameters ID for cell 2

8.3.1.35 .5 Test requirement

After step 2, the UE shall transmit a CELL UPDATE message.

After step 4, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message and start reception of HS-DSCH.

8.3.1.36 Cell Update: Transition from CELL_DCH to CELL_FACH (stop of HS-DSCH reception with frequency modification)

8.3.1.36 .1 Definition

(All UEs which support FDD or TDD and HS-PDSCH.)

8.3.1.36 .2 Conformance requirement

1> Radio link failure:

…

3> if the UE is in CELL_DCH state and the criteria for radio link failure are met as specified in subclause 8.5.6; or

…

4> perform cell update using the cause "radio link failure".

When initiating the URA update or cell update procedure, the UE shall:

…

1> if HS-DSCH is configured:

2> stop any HS-DSCH reception procedures;

2> clear any stored HS-PDSCH configuration;

2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

2> release all HARQ resources;

2> remove any H-RNTI stored;

2> clear the variable H_RNTI;

2> set the variable HS_DSCH_RECEPTION to FALSE.

1> if the UE is not already in CELL_FACH state:

2> move to CELL_FACH state;

2> select PRACH according to subclause 8.5.17;

2> select Secondary CCPCH according to subclause 8.5.19;

2> use the transport format set given in system information as specified in subclause 8.6.5.1.

Reference

3GPP TS 25.331 clauses 8.3.1.2

8.3.1.36 .3 Test purpose

To confirm that the UE stops HS-DSCH reception after a radio link failure in CELL_DCH during HS-DSCH reception.

8.3.1.36.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 is active and cell 6 is inactive.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.36

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		High Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.36 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is in CELL_DCH state and only signalling radio bearers have been established. SS initiates P25 to make the UE to move to state 6-17 as specified in TS 34.108 clause 7.4. The UE is in the CELL_DCH state and has a radio bearer established that is mapped to HS-DSCH. SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.36. The UE shall detect a radio link failure in cell 1.

Then it shall attempt to re-select to cell 6. After that, it shall then enter CELL_FACH state and transmit a CELL UPDATE message on the uplink CCCH to SS.

The SS transmits a CELL UPDATE CONFIRM message which requests the UE to transit to CELL_FACH state. The UE responds with a RADIO BEARER RECONFIGURATION COMPLETE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message. (Step 0)
1				SS configures cell 1 and 6 according to column "T1" in table 8.3.1.36. SS starts to listen to the uplink CCCH of cell 6.
2				The UE detects the radio link failure and stops reception of HS-DSCH.
3	→		CELL UPDATE	The UE shall find a new cell 6 and the value "radio link failure" shall be set in IE "Cell update cause".
4	←		CELL UPDATE CONFIRM	
5	→		RADIO BEARER RECONFIGURATION COMPLETE	

Specific Message Contents

System Information Block type 1

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2
- T313	2

RADIO BEARER SETUP (Step 0)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108.

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Radio link failure”

CELL UPDATE CONFIRM (Step 4) (FDD)

Use the same message sub-type found in TS 34.108 clause 9 with the exception of the following IEs:

Information Element	Value/remark	Version
New C-RNTI	'0101 0101 0101 0101'	
RLC re-establish indicator (RB2, RB3 and RB4)	TRUE	
RB information to reconfigure list		
- RB information to reconfigure	(AM DCCH for RRC)	
- RB identity	2	
- PDCP info	Not Present	
- PDCP SN info	Not Present	
- RLC info		
- CHOICE Uplink RLC mode	AM RLC	
- Transmission RLC discard		
- SDU discard mode	No discard	
- MAX_DAT	15	
- Transmission window size	128	
- Timer_RST	600	
- Max_RST	4	
- Polling info		
- Timer_poll_prohibit	250	
- Timer_poll	250	
- Poll_PDU	Not present	
- Poll_SDU	1	
- Last transmission PDU poll	TRUE	
- Last retransmission PDU poll	TRUE	
- Poll_Window	99	
- Timer_poll_periodic	Not Present	
- CHOICE Downlink RLC mode	AM RLC	
- In-sequence delivery	TRUE	
- Receiving window size	128	
- Downlink RLC status info		
- Timer_status_prohibit	200	
- Timer_EPC	Not present	
- Missing PDU indicator	TRUE	
- Timer_STATUS_periodic	Not Present	
- RB mapping info	Not Present	
- RB stop/continue	Not Present	
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)	
- RB identity	3	
- PDCP info	Not Present	
- PDCP SN info	Not Present	
- RLC info		
- CHOICE Uplink RLC mode	AM RLC	
- Transmission RLC discard		
- SDU discard mode	No discard	
- MAX_DAT	15	
- Transmission window size	128	
- Timer_RST	600	
- Max_RST	4	
- Polling info		
- Timer_poll_prohibit	250	
- Timer_poll	250	
- Poll_PDU	Not present	
- Poll_SDU	1	
- Last transmission PDU poll	TRUE	
- Last retransmission PDU poll	TRUE	
- Poll_Window	99	
- Timer_poll_periodic	Not Present	
- CHOICE Downlink RLC mode	AM RLC	
- In-sequence delivery	TRUE	
- Receiving window size	128	
- Downlink RLC status info		
- Timer_status_prohibit	200	
- Timer_EPC	Not present	
- Missing PDU indicator	TRUE	
- Timer_STATUS_periodic	Not Present	

- RB mapping info	Not Present	
- RB stop/continue	Not Present	
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)	
- RB identity	4	
- PDCP info	Not Present	
- PDCP SN info	Not Present	
- RLC info		
- CHOICE Uplink RLC mode	AM RLC	
- Transmission RLC discard		
- SDU discard mode	No discard	
- MAX_DAT	15	
- Transmission window size	128	
- Timer_RST	600	
- Max_RST	4	
- Polling info		
- Timer_poll_prohibit	250	
- Timer_poll	250	
- Poll_PDU	Not present	
- Poll_SDU	1	
- Last transmission PDU poll	TRUE	
- Last retransmission PDU poll	TRUE	
- Poll_Window	99	
- Timer_poll_periodic	Not Present	
- CHOICE Downlink RLC mode	AM RLC	
- In-sequence delivery	TRUE	
- Receiving window size	128	
- Downlink RLC status info		
- Timer_status_prohibit	200	
- Timer_EPC	Not Present	
- Missing PDU indicator	TRUE	
- Timer_STATUS_periodic	Not Present	
- RB mapping info	Not Present	
- RB stop/continue	Not Present	
- RB information to reconfigure	(AM DTCH)	
- RB identity	25	
- PDCP info	Not Present	
- PDCP SN info	Not Present	
- RLC info		
- CHOICE Uplink RLC mode	AM RLC	
- Transmission RLC discard		
- SDU discard mode	No discard	
- MAX_DAT	15	
- Transmission window size	128	
- Timer_RST	600	
- Max_RST	4	
- Polling info		
- Timer_poll_prohibit	250	
- Timer_poll	250	
- Poll_PDU	Not Present	
- Poll_SDU	1	
- Last transmission PDU poll	TRUE	
- Last retransmission PDU poll	TRUE	
- Poll_Window	99	
- Timer_poll_periodic	Not Present	
- CHOICE Downlink RLC mode	AM RLC	
- In-sequence delivery	TRUE	
- Receiving window size	128	
- Downlink RLC status info		
- Timer_status_prohibit	200	
- Timer_EPC	Not Present	
- Missing PDU indicator	TRUE	
- Timer_STATUS_periodic	Not Present	
- RB mapping info	Not Present	
- RB stop/continue	Not Present	
Deleted DL TrCH Information	Same as the set defined in RADIO BEARER RELEASE message found in TS 34.108 clause 9 under condition A9.	
- Downlink information for each radio link		

- Choice mode	FDD	
- Primary CPICH info		
- Primary scrambling code	Set to the Primary scrambling code used for cell6	
- Serving HS-DSCH radio link indicator	FALSE	
- Downlink DPCH info for each RL	Not present	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

CELL UPDATE CONFIRM (Step 4) (1.28Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9 with the exception of the following IEs:

Information Element	Value/remark	Version
New C-RNTI	'0101 0101 0101 0101'	
RLC re-establish indicator (RB2, RB3 and RB4)	TRUE	
RB information to reconfigure list		
- RB information to reconfigure	(AM DCCH for RRC)	
- RB identity	2	
- PDCP info	Not Present	
- PDCP SN info	Not Present	
- RLC info		
- CHOICE Uplink RLC mode	AM RLC	
- Transmission RLC discard		
- SDU discard mode	No discard	
- MAX_DAT	15	
- Transmission window size	128	
- Timer_RST	600	
- Max_RST	4	
- Polling info		
- Timer_poll_prohibit	250	
- Timer_poll	250	
- Poll_PDU	Not present	
- Poll_SDU	1	
- Last transmission PDU poll	TRUE	
- Last retransmission PDU poll	TRUE	
- Poll_Window	99	
- Timer_poll_periodic	Not Present	
- CHOICE Downlink RLC mode	AM RLC	
- In-sequence delivery	TRUE	
- Receiving window size	128	
- Downlink RLC status info		
- Timer_status_prohibit	200	
- Timer_EPC	Not present	
- Missing PDU indicator	TRUE	
- Timer_STATUS_periodic	Not Present	
- RB mapping info	Not Present	
- RB stop/continue	Not Present	
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)	
- RB identity	3	
- PDCP info	Not Present	
- PDCP SN info	Not Present	
- RLC info		
- CHOICE Uplink RLC mode	AM RLC	
- Transmission RLC discard		
- SDU discard mode	No discard	
- MAX_DAT	15	
- Transmission window size	128	
- Timer_RST	600	
- Max_RST	4	
- Polling info		
- Timer_poll_prohibit	250	
- Timer_poll	250	
- Poll_PDU	Not present	
- Poll_SDU	1	
- Last transmission PDU poll	TRUE	
- Last retransmission PDU poll	TRUE	
- Poll_Window	99	
- Timer_poll_periodic	Not Present	
- CHOICE Downlink RLC mode	AM RLC	
- In-sequence delivery	TRUE	
- Receiving window size	128	
- Downlink RLC status info		
- Timer_status_prohibit	200	
- Timer_EPC	Not present	
- Missing PDU indicator	TRUE	
- Timer_STATUS_periodic	Not Present	

- RB mapping info	Not Present	
- RB stop/continue	Not Present	
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)	
- RB identity	4	
- PDCP info	Not Present	
- PDCP SN info	Not Present	
- RLC info		
- CHOICE Uplink RLC mode	AM RLC	
- Transmission RLC discard		
- SDU discard mode	No discard	
- MAX_DAT	15	
- Transmission window size	128	
- Timer_RST	600	
- Max_RST	4	
- Polling info		
- Timer_poll_prohibit	250	
- Timer_poll	250	
- Poll_PDU	Not present	
- Poll_SDU	1	
- Last transmission PDU poll	TRUE	
- Last retransmission PDU poll	TRUE	
- Poll_Window	99	
- Timer_poll_periodic	Not Present	
- CHOICE Downlink RLC mode	AM RLC	
- In-sequence delivery	TRUE	
- Receiving window size	128	
- Downlink RLC status info		
- Timer_status_prohibit	200	
- Timer_EPC	Not Present	
- Missing PDU indicator	TRUE	
- Timer_STATUS_periodic	Not Present	
- RB mapping info	Not Present	
- RB stop/continue	Not Present	
- RB information to reconfigure	(AM DTCH)	
- RB identity	20	
- PDCP info	Not Present	
- PDCP SN info	Not Present	
- RLC info		
- CHOICE Uplink RLC mode	AM RLC	
- Transmission RLC discard		
- SDU discard mode	No discard	
- MAX_DAT	15	
- Transmission window size	128	
- Timer_RST	600	
- Max_RST	4	
- Polling info		
- Timer_poll_prohibit	250	
- Timer_poll	250	
- Poll_PDU	Not Present	
- Poll_SDU	1	
- Last transmission PDU poll	TRUE	
- Last retransmission PDU poll	TRUE	
- Poll_Window	99	
- Timer_poll_periodic	Not Present	
- CHOICE Downlink RLC mode	AM RLC	
- In-sequence delivery	TRUE	
- Receiving window size	128	
- Downlink RLC status info		
- Timer_status_prohibit	200	
- Timer_EPC	Not Present	
- Missing PDU indicator	TRUE	
- Timer_STATUS_periodic	Not Present	
- RB mapping info	Not Present	
- RB stop/continue	Not Present	
Deleted DL TrCH Information	Same as the set defined in RADIO BEARER RELEASE message found in TS 34.108 clause 9 under condition A9.	
Frequency info		

- CHOICE mode	TDD	
- UARFCN (Nt)	Same UARFCN as used for cell 6	
- Downlink information for each radio link		
- Choice mode	TDD	
- Primary CCPCH info		
- Choice mode	TDD	
- Choice TDD Option	1.28Mcps TDD	
- TSTD indicator	FALSE	
- Cell parameters ID	Same Cell parameters ID as used for cell 6	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL	Not present	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

8.3.1.36 .5 Test requirement

After step 2, the UE shall transmit a CELL UPDATE message and stop HS-DSCH reception.

8.3.1.37 Cell Update: Transition from CELL_DCH to CELL_DCH (with active HS-DSCH reception and frequency modification)

8.3.1.37 .1 Definition

(All UEs which support FDD or TDD and HS-PDSCH.)

8.3.1.37 .2 Conformance requirement

1> Radio link failure:

…

3> if the UE is in CELL_DCH state and the criteria for radio link failure are met as specified in subclause 8.5.6; or

…

4> perform cell update using the cause "radio link failure".

When initiating the URA update or cell update procedure, the UE shall:

…

1> if HS-DSCH is configured:

2> stop any HS-DSCH reception procedures;

2> clear any stored HS-PDSCH configuration;

2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

2> release all HARQ resources;

2> remove any H-RNTI stored;

2> clear the variable H_RNTI;

2> set the variable HS_DSCH_RECEPTION to FALSE.

Reference

3GPP TS 25.331 clauses 8.3.1.2

8.3.1.37 .3 Test purpose

To confirm that the UE keeps the RB mapping option for HS-DSCH reception after a radio link failure in CELL_DCH during HS-DSCH reception.

8.3.1.37.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 is active and cell 6 is inactive.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.37

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		High Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.37 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is in CELL_DCH state and only signalling radio bearers have been established. SS initiates P25 to make the UE to move to state 6-17 as specified in TS 34.108 clause 7.4. The UE is in the CELL_DCH state and has a radio bearer established that is mapped to HS-DSCH. SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.37. The UE shall detect a radio link failure in cell 1.

Then it shall attempt to re-select to cell 6. After that, it shall then enter CELL_FACH state and transmit a CELL UPDATE message on the uplink CCCH to SS.

The SS transmits a CELL UPDATE CONFIRM message which requests the UE to transit to CELL_DCH state and start reception of HS-DSCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message. (Step 0)
1				SS configures cell 1 and 6 according to column "T1" in table 8.3.1.37. SS starts to listen to the uplink CCCH of cell 6.
2				The UE detects the radio link failure and stops reception of HS-DSCH.
3	→		CELL UPDATE	The UE shall find a new cell 6 and the value "radio link failure" shall be set in IE "Cell update cause".
4	←		CELL UPDATE CONFIRM	
5	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

System Information Block type 1

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2
- T313	2

RADIO BEARER SETUP (Step 0) (FDD)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
RAB information for setup	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10, with the following exceptions
- PDCP info	Not present
- Transmission RLC discard	
- MAX_DAT	10
- Transmission window size	256
- Timer_RST	1000
- Max_RST	12
- Timer_poll_prohibit	50
- Timer_poll	400
- Poll_Windows	80
- Receiving window size	2047
- Downlink RLC status info	
- Timer_status_prohibit	50
UL Transport channel Information for all transport channels	
- CHOICE Gain Factors	Computed Gain Factors (The last TFC is set to Signalled Gain Factors)
- Gain factorβc	9 (equal or higher than 64 kbps and below 384 kbps) 6 (equal or higher than 384 kbps)
- Gain factorβd	15 (Not Present if the CHOICE Gain Factors is set to Computed Gain Factors)
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10, with the following exception;
- MAC-d PDU size	656
Maximum allowed UL TX power	24dBm
CHOICE channel requirement	
- Δ_{ACK}	6
- Δ_{NACK}	6
Downlink HS-PDSCH Information	
- Measurement Feedback Info	
- POhsdsch	9dB
- CQI Feedback cycle, k	10ms
- Δ_{CQI}	3

RADIO BEARER SETUP (Step 0) (1.28Mcps TDD)

Use the same message as specified for "Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
Maximum allowed UL TX power	24dBm

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - S-RNTI - SRNC Identity Cell Update Cause	 Check to see if set to value assigned in cell 1. Check to see if set to value assigned in cell 1. Check to see if set to “Radio link failure”

CELL UPDATE CONFIRM (Step 4) (FDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
RRC State indicator	CELL_DCH
RLC re-establish indicator (RB2, RB3 and RB4)	TRUE
UL Transport channel information common for all transport channels - CHOICE Gain Factors - Gainfactorβc	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9, with the following exceptions; Computed Gain Factors (The last TFC is set to Signalled Gain Factors) 9 (equal or higher than 64 kbps and below 384 kbps) 6 (equal or higher than 384 kbps)
- Gain factorβd	15 (Not Present if the CHOICE Gain Factors is set to Computed Gain Factors)
DL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.
Added or Reconfigured DL TrCH information list - MAC-d PDU size	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10. 656
Frequency info - UARFCN uplink (Nu) - UARFCN downlink (Nd)	 This IE should be present, if the default duplex distance defined for the operating frequency band is not used. Same downlink UARFCN as used for cell 6
CHOICE channel requirement - Δ_{ACK} - Δ_{NACK} - Scrambling Code Number	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9, with the following exceptions; 6 6 A non-zero value in the range of 0-16777215 used for cell 6
Downlink HS-PDSCH Information - Measurement Feedback Info - POhsdsch - CQI Feedback cycle, k - Δ_{CQI}	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9, with the following exceptions; 9dB 10ms 3
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10;
Downlink information per radio link list - Primary CPICH info - Primary scrambling code	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9, with the following exception; 350

CELL UPDATE CONFIRM (Step 4) (1.28Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
RRC State indicator	CELL_DCH
RLC re-establish indicator (RB2, RB3 and RB4)	TRUE
UL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.
DL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.
Added or Reconfigured DL TrCH information list - MAC-d PDU size	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10. 656
Frequency info - CHOICE mode - UARFCN (Nt)	 TDD Same UARFCN as used for cell 6
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.
Downlink information common for all radio links - Timing indicator	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9, with the following exception; Initialise
Downlink information per radio link list - Primary CCPCH info - Choice mode - Choice TDD Option - TSTD indicator - Cell parameters ID - SCTD indicator	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9, with the following exception; TDD 1.28 Mcps TDD FALSE Ref. to the Default setting in TS34.108 clause 6.1 for CELL 6 (TDD) FALSE

8.3.1.37 .5 Test requirement

After step 2, the UE shall transmit a CELL UPDATE message.

After step 4, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message and start reception of HS-DSCH.

8.3.1.38 Cell Update: state specific handling of $T_{reselection}$ and Q_{hyst} for cell reselection in CELL_FACH

8.3.1.38.1 Conformance requirement

2. The cell-ranking criterion R is defined by:

$$R_s = Q_{meas,s} + Qhyst_s$$

$$R_n = Q_{meas,n} - Qoffset_{s,n} - TO_n * (1 - L_n)$$

The cells shall be ranked according to the R criteria specified above, deriving $Q_{meas,n}$ and $Q_{meas,s}$ and calculating the R values using CPICH RSCP, P-CCPCH RSCP and the averaged received signal level as specified in [10] and [11] for FDD, TDD and GSM cells, respectively.

The offset $Qoffset1_{s,n}$ is used for $Qoffset_{s,n}$ to calculate R_n, the hysteresis $Qhyst1_s$ is used for $Qhyst_s$ to calculate R_s. For UE in RRC connected mode states CELL_PCH or URA_PCH the hysteresis $Qhyst_s$ takes the value $Qhyst1_{s,PCH}$ to calculate R_s, if provided in SIB4 [see 4]. For UE in RRC connected mode state CELL_FACH the hysteresis $Qhyst_s$ takes the value $Qhyst1_{s,FACH}$ to calculate R_s, if provided in SIB4 [see 4].

If an FDD cell is ranked as the best cell and the quality measure for cell selection and re-selection is set to CPICH Ec/No, the UE shall perform a second ranking of the FDD cells according to the R criteria specified above, but using the measurement quantity CPICH Ec/No for deriving the $Q_{meas,n}$ and $Q_{meas,s}$ and calculating the R values of the FDD cells. The offset $Qoffset2_{s,n}$ is used for $Qoffset_{s,n}$ to calculate R_n, the hysteresis $Qhyst2_s$ is used for $Qhyst_s$ to calculate R_s. For UE in RRC connected mode states CELL_PCH or URA_PCH the hysteresis $Qhyst_s$ takes the value $Qhyst2_{s,PCH}$ to calculate R_s, if provided in SIB4 [see 4]. For UE in RRC connected mode state CELL_FACH the hysteresis $Qhyst_s$ takes the value $Qhyst2_{s,FACH}$ to calculate R_s, if provided in SIB4 [see 4]. If the usage of HCS is indicated in system information, $TEMP\_OFFSET2_n$ is used to calculate TO_n. If it is indicated in system information that HCS is not used, $TEMP\_OFFSET_n$ is not applied when calculating R_n. Following this second ranking, the UE shall perform cell re-selection to the best ranked FDD cell.

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during a time interval Treselection. For UE in RRC connected mode states CELL_PCH or URA_PCH the interval $Treselection_{s,PCH}$ applies, if provided in SIB4 [see 4], while for UE in RRC connected mode state CELL_FACH the interval $Treselection_{s,FACH}$ applies, if provided in SIB4 [see 4]. For hierarchical cell structures when high mobility state has not been detected, if according to the HCS rules the serving cell is not ranked then all the ranked cells are considered to be better ranked than the serving cell.

$Qhyst1_{s,FACH}$

This specifies the hysteresis value (Qhyst) to be used in RRC connected mode state CELL_FACH. It is used for TDD and GSM cells and for FDD cells in case the quality measure for cell selection and re-selection is set to CPICH RSCP. If this parameter is not provided in SIB4, $Qhyst1_s$ shall be used.

$Qhyst2_{s,FACH}$

This specifies the hysteresis value (Qhyst) to be used in RRC connected mode state CELL_FACH. It is used for FDD cells if the quality measure for cell selection and re-selection is set to CPICH Ec/No. If this parameter is not provided in SIB4, $Qhyst2_s$ shall be used.

$Treselection_{s,FACH}$

This specifies the cell reselection timer value the UE shall use in RRC connected mode state CELL_FACH if provided in SIB4, otherwise $Treselection_s$ shall be used.

A UE shall initiate the cell update procedure in the following cases:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

the UE shall:

…

1> in case of a cell update procedure:

2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry.

…

1> transmit a response message as specified in TS 25.331 subclause 8.3.1.7;

…

Reference

3GPP TS 25.304 clause 5.2.6.1.4.

3GPP TS 25.304 clause 5.4.3.

3GPP TS 25.331 clause 8.3.1.

8.3.1.38.2 Test purpose

1. To confirm that the UE uses the correct SIB 4 IEs to perform cell reselection calculation in CELL_FACH.

8.3.1.38.3 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 4 are active.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.38

Parameter	Unit	Cell 1			Cell 4		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			High Range Test Frequency		
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-67	-82	OFF	-60	-60

Table 8.3.1.38 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions. SS switches the power settings to columns "T1" and “T2”, when the description below specifies.

The UE is in the CELL_FACH state, camping onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.38. The UE shall remain on cell 1 even after expiry of Treselecion. SS configures its downlink transmission power settings according to columns "T2" in table 8.3.1.38. The UE shall find cell 4 to be more suitable for service after expiry of Treselection, and shall transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 4 and set IE "Cell update cause" to "Cell Reselection". SS checks this is received after expiry of Treselection. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_FACH", and a valid IE "New C-RNTI", to the UE on the downlink DCCH. UE responds with UTRAN MOBILITY INFORMATION CONFIRM message.. UE shall stay in CELL_FACH state. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state in cell 1
2				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.38. SS checks that no message is received even after expiry of Treselection.
3				SS applies the downlink transmission power settings, according to the values in columns "T2" of table 8.3.1.38. The UE shall find that the cell 4 is better for service and perform a reselection. SS checks that no message is received until Treselection expires.
4	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
5	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH".
6	→		UTRAN MOBILITY INFORMATION CONFIRM	
7	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 4 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- s-Intersearch	Not Present
- Qqualmin	-24 dB
- Qrxlevmin	-58 (-115 dBm)
- $Qhyst1_s$	0 (0 dB)
- $Qhyst1_{s,FACH}$	7 (14 dB)
- $Treselection_{s,FACH}$	6 seconds

System Information Block type 11 (FDD)

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present

CELL UPDATE (Step 4)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

8.3.1.38.4 Test requirement

At step 2 no cell update is received, even after expiry of Treselelection

At step 3 no cell update is received until after Treselection has expired.

At step 4 the UE shall reselect to cell 4 and then it shall transmit a CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause".

8.3.1.39 Cell Update: state specific handling of $T_{reselection}$ and Q_{hyst} for cell reselection in CELL_PCH

8.3.1.39.1 Conformance requirement

2. The cell-ranking criterion R is defined by:

$$R_s = Q_{meas,s} + Qhyst_s$$

$$R_n = Q_{meas,n} - Qoffset_{s,n} - TO_n * (1 - L_n)$$

The cells shall be ranked according to the R criteria specified above, deriving $Q_{meas,n}$ and $Q_{meas,s}$ and calculating the R values using CPICH RSCP, P-CCPCH RSCP and the averaged received signal level as specified in [10] and [11] for FDD, TDD and GSM cells, respectively.

The offset $Qoffset1_{s,n}$ is used for $Qoffset_{s,n}$ to calculate R_n, the hysteresis $Qhyst1_s$ is used for $Qhyst_s$ to calculate R_s. For UE in RRC connected mode states CELL_PCH or URA_PCH the hysteresis $Qhyst_s$ takes the value $Qhyst1_{s,PCH}$ to calculate R_s, if provided in SIB4 [see 4]. For UE in RRC connected mode state CELL_FACH the hysteresis $Qhyst_s$ takes the value $Qhyst1_{s,FACH}$ to calculate R_s, if provided in SIB4 [see 4].

If an FDD cell is ranked as the best cell and the quality measure for cell selection and re-selection is set to CPICH Ec/No, the UE shall perform a second ranking of the FDD cells according to the R criteria specified above, but using the measurement quantity CPICH Ec/No for deriving the $Q_{meas,n}$ and $Q_{meas,s}$ and calculating the R values of the FDD cells. The offset $Qoffset2_{s,n}$ is used for $Qoffset_{s,n}$ to calculate R_n, the hysteresis $Qhyst2_s$ is used for $Qhyst_s$ to calculate

R_s. For UE in RRC connected mode states CELL_PCH or URA_PCH the hysteresis $Qhyst_s$ takes the value $Qhyst2_{s,PCH}$ to calculate R_s, if provided in SIB4 [see 4]. For UE in RRC connected mode state CELL_FACH the hysteresis $Qhyst_s$ takes the value $Qhyst2_{s,FACH}$ to calculate R_s, if provided in SIB4 [see 4]. If the usage of HCS is indicated in system information, $TEMP\_OFFSET2_n$ is used to calculate TO_n. If it is indicated in system information that HCS is not used, $TEMP\_OFFSET_n$ is not applied when calculating R_n. Following this second ranking, the UE shall perform cell re-selection to the best ranked FDD cell.

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during a time interval Treselection. For UE in RRC connected mode states CELL_PCH or URA_PCH the interval $Treselection_{s,PCH}$ applies, if provided in SIB4 [see 4], while for UE in RRC connected mode state CELL_FACH the interval $Treselection_{s,FACH}$ applies, if provided in SIB4 [see 4]. For hierarchical cell structures when high mobility state has not been detected, if according to the HCS rules the serving cell is not ranked then all the ranked cells are considered to be better ranked than the serving cell.

$Qhyst1_{s,PCH}$

This specifies the hysteresis value (Qhyst) to be used in RRC connected mode states CELL_PCH and URA_PCH. It is used for TDD and GSM cells and for FDD cells in case the quality measure for cell selection and re-selection is set to CPICH RSCP. If this parameter is not provided in SIB4, $Qhyst1_s$ shall be used.

$Qhyst2_{s,PCH}$

This specifies the hysteresis value (Qhyst) to be used in RRC connected mode states CELL_PCH and URA_PCH. It is used for FDD cells if the quality measure for cell selection and re-selection is set to CPICH Ec/No. If this parameter is not provided in SIB4, $Qhyst2_s$ shall be used.

$Treselection_{s,PCH}$

This specifies the cell reselection timer value the UE shall use in RRC connected mode states CELL_PCH and URA_PCH if provided in SIB4, otherwise $Treselection_s$ shall be used.

A UE shall initiate the cell update procedure in the following cases:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

the UE shall:

…

1> in case of a cell update procedure:

2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry.

…

1> transmit a response message as specified in TS 25.331 subclause 8.3.1.7;

…

Reference

3GPP TS 25.304 clause 5.2.6.1.4.

3GPP TS 25.304 clause 5.4.3.

3GPP TS 25.331 clause 8.3.1.

8.3.1.39.2 Test purpose

1. To confirm that the UE uses the correct SIB 4 IEs to perform cell reselection calculation in CELL_PCH.

8.3.1.39.3 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 4 are active.

UE: CELL_PCH (state 6-12) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.39

Parameter	Unit	Cell 1			Cell 4		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			High Range Test Frequency		
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-67	-82	OFF	-60	-60

Table 8.3.1.39 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions. SS switches the power settings to columns "T1" and “T2”, when the description below specifies.

The UE is brought to CELL_PCH state and is camped onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.39. The UE shall remain on cell 1 even after expiry of Treselecion. SS configures its downlink transmission power settings according to columns "T2" in table 8.3.1.39. The UE shall find cell 4 to be more suitable for service after expiry of Treselection, and shall transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 4 and set IE "Cell update cause" to "Cell Reselection". SS checks this is received after expiry of Treselection. Upon reception of CELL_UPDATE message, SS replies with a CELL UPDATE CONFIRM message with the IE "RRC State Indicator" set to "CELL_PCH". After receiving this message, the UE returns to CELL_PCH state without transmitting any uplink message. SS calls for generic procedure C.4 to check that UE is in CELL_PCH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_PCH state in cell 1
2				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.39. SS checks that no message is received even after expiry of Treselection.
3				SS applies the downlink transmission power settings, according to the values in columns "T2" of table 8.3.1.39. The UE shall find that the cell 4 is better for service and perform a reselection. SS checks that no message is received until Treselection expires.
4	→		CELL UPDATE	The UE moves to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection"
5	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_PCH".
6	←→		CALL C.4	If the test result of C.4 indicates that UE is in CELL_PCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 4 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- s-Intersearch	Not Present
- Qqualmin	-24 dB
- Qrxlevmin	-58 (-115 dBm)
- $Qhyst1_s$	0 (0 dB)
- $Qhyst1_{s,PCH}$	7 (14 dB)
- $Treselection_{s,PCH}$	15 seconds

CELL UPDATE (Steps 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State Indicator UTRAN DRX cycle length coefficient	CELL_PCH 3

8.3.1.39.4 Test requirement

At step 2 no cell update is received, even after expiry of Treselelection

At step 3 no cell update is received until after Treselection has expired.

At step 4 the UE shall reselect to cell 4 and then it shall transmit a CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause".

8.3.1.40 Cell update: Transition from CELL_PCH to CELL_DCH, inclusion of establishment cause

8.3.1.40.1 Definition

8.3.1.40.2 Conformance requirement

Upon initiation of the initial direct transfer procedure when the UE is in CELL_PCH or URA_PCH state, the UE shall:

1> perform a cell update procedure, according to subclause 8.3.1, using the cause "uplink data transmission";

1> when the cell update procedure completed successfully:

2> continue with the initial direct transfer procedure as below.

……

The UE shall set the IEs in the CELL UPDATE message as follows:

…

1> if the variable ESTABLISHMENT_CAUSE is initialised:

2> include the IE "Establishment cause" and set it to the value of the variable ESTABLISHMENT_CAUSE.

…….

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

the UE shall:

…

1> if the variable ESTABLISHMENT_CAUSE is set:

2> clear the variable ESTABLISHMENT_CAUSE.

Reference

3GPP TS 25.331 clause 8.1.8.2, 8.3.1.3, 8.3.1.6

8.3.1.40.3 Test purpose

1. To confirm that, in the case the Cell Update procedure is initiated by a UE in CELL_PCH state in order to transmit the Initial Direct Transfer message, the UE shall include the IE "Establishment cause" in the Cell Update message.

2. To confirm that the IE "Establishment Cause" is not included in the following Initial Direct Transfer message.

8.3.1.40.4 Method of test

Initial Condition

System Simulator: 1 cell

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: CELL_PCH (state 6-12) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports PS+CS

Test Procedure

The test operator is prompted to make an out-going CS call. The UE shall transmit a CELL UPDATE message to the SS on the uplink CCCH, with the IE "Cell update cause" set to value "uplink data transmission" and IE "Establishment cause" set to "Originating conversational call". After receiving such a message, SS transmits a CELL UPDATE CONFIRM message on downlink DCCH to send the UE to CELL_DCH state. The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits an INITIAL DIRECT TRANSFER message using AM RLC on DCCH with the IE "Establishment cause" set to "Not Present". After reception of the CM Service Request message from the UE, the SS will send a CM Service Reject to complete the Service Request procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS prompts the test operator to make an outgoing CS call.
2	→		CELL UPDATE	The UE sets "Cell update cause" IE as "uplink data transmission" and "Establishment cause" IE as "Originating Conversational Call ".
3	←		CELL UPDATE CONFIRM	See message content. UE moves to CELL_DCH state
3a	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	→		INITIAL DIRECT TRANSFER (CM SERVICE REQUEST)	The IE "Establishment cause" is not present.
5	←		DOWNLINK DIRECT TRANSFER (CM SERVICE REJECT)	
6	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

CELL UPDATE (Step 2)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
Cell Update Cause Establishment cause	uplink data transmission originating Conversational Call

CELL UPDATE CONFIRM (Step 3)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 3a)

Use the default message with the same message type specified in clause 9 of TS 34.108.

INITIAL DIRECT TRANSFER (Step 4)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
CN Domain Identity Establishment cause	CS domain Not Present

8.3.1.40.5 Test requirement

After step 1, the UE shall transmit a CELL UPDATE message where the IE "Cell update cause" is set to "uplink data transmission" and the IE "Establishment cause" is set to "Originating conversation call".

After step 3 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 3a, the UE shall transmit an INITIAL DIRECT TRANSFER message to SS using AM RLC on DCCH in CELL_DCH state with no Establishment cause IE.

8.3.1.41 Cell Update: Transition from URA_PCH to CELL_DCH: Success (start of E-DCH transmission)

8.3.1.41.1 Definition

All UEs which support FDD and HS-PDSCH and E-DPDCH and all UEs which support TDD and HS-PDSCH and E-PUCH.

8.3.1.41.2 Conformance requirement

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

…

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

…

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

…

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1>act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

2> if the IE "Frequency info" is included in the message:

3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

4> act on the IE "Frequency info" as specified in subclause 8.6.6.1 in TS 25.331.

…

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

1> for FDD, 3.84 Mcps TDD and 7.68 Mcps TDD, if the IE "Frequency info" is included; or

1> for 1.28 Mcps TDD, if the IE "Frequency info" is included and the "Second Frequency info" is not included:

2> if the frequency is different from the currently used frequency:

3> store and use the frequency indicated by the IE "Frequency Info";

3> if the received message is used to perform a Timing-maintained hard handover (see subclause 8.3.5.2), and IE "Timing maintained Synchronization indicator" is included:

4> not perform any physical layer synchronisation procedure (FDD only);

3> else:

4> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

…

If the IE "New H-RNTI" is included, the UE shall:

1> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

1> for FDD:

2> if the IE "New Primary E-RNTI" and/or the IE "New Secondary E-RNTI" are/is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

3> store the new value(s) in the variable E_RNTI;

3> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

1> for TDD:

2> if the IE "New E-RNTI" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

3> store the new value in the variable E_RNTI;

3> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

When the variable E_DCH_TRANSMISSION is set to TRUE the UE shall:

1> for FDD:

2> use the value of the Primary E-RNTI and/or Secondary E-RNTI stored in the variable E_RNTI as UE identities in the E-AGCH reception procedure in the physical layer.

1> for TDD:

2> use the value of New E-RNTI stored in the variable E_RNTI as the UE identity in the E-AGCH reception procedure and the E-RUCCH transmission procedure in the physical layer.

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33 of TS 25.331.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34 of TS 25.331.

1> if the IE "HS-DSCH Timeslot Configuration" or "HS-PDSCH Midamble Configuration" is included:

2> store the received configuration;

2> determine the value for the HS_DSCH_RECEPTION variable and take actions as described in subclause 8.5.25.

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

1> in the case of TDD:

2> receive the HS-SCCH(s) according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> transmit the HS-SICH according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> for HS-SCCH power control the UE shall use the "BLER target" signalled in the first occurrence of the "HS-SCCH Set Configuration", and the UE shall also use the IE "Power Control GAP" for 1.28 Mcps TDD.

2> in 3.84 Mcps TDD and 7.68 Mcps TDD:

3> use the parameters specified in the IE "HS-SICH power control info" for open loop power control as defined in subclause 8.5.7.

2> in 1.28 Mcps TDD:

3> use the IE " $PRX_{HS\text{-}SICH}$ " to calculate and set an initial uplink transmission power;

3> use the IE " TPC step size" upon reception of TPC commands for closed loop power control;

3> perform closed loop power control on HS-SICH within the interval indicated in the IE "Power Control GAP";

3> use the IE "Pathloss compensation switch" to determine if the pathloss compensation from the beacon channel estimation should be taken into account for closed loop power control on HS-SICH;

3> use default value of "Uplink synchronisation frequency" and same value of "Uplink synchronisation step size" in "Uplink DPCH info" for HS-SICH upon reception of SS commands for closed loop uplink synchronisation on HS-SICH.

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

…

If the IE "Downlink information for each radio link" is included in a received message, the UE shall:

1> if the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message:

2> if the IE "Serving HS-DSCH radio link indicator" is set to 'TRUE':

3> consider this radio link as the serving HS-DSCH radio link.

2> if the IE "Serving E-DCH radio link indicator" is set to 'TRUE':

3> consider this radio link as the serving E-DCH radio link.

2> if the IE "E-AGCH Info" is included:

3> store the newly received E-AGCH configuration.

2> if the IE "E-HICH information" is included:

3> store this E-HICH configuration for the concerning radio link.

2> if the IE "E-RGCH information" is included:

3> store this E-RGCH configuration for the concerning radio link.

2> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

2> act on the other IEs contained in the IE "Downlink information for each radio link" as specified in subclause 8.6 applied on this radio link.

…

If the IE "E-DCH Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> for FDD:

2> if the IE "E-DPCCH Info" is included:

3> store the newly received E-DPCCH configuration.

2> if the IE "E-DPDCH Info" is included:

3> store the newly received E-DPDCH configuration.

…

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

…

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable E_DCH_TRANSMISSION is set to TRUE, the UE shall:

1>For FDD:

2> perform E_AGCH reception procedures according to the stored E_AGCH configuration as stated in:

3> subclause 8.6.3.14 for the IE "New Primary E-RNTI" and the IE "New Secondary E-RNTI".

2> perform E-HICH reception procedures for all radio links in the E-DCH active set;

2> perform E-RGCH reception procedures for all radio links in the active set for which an E-RGCH configuration has been provided;

2> perform E-DPCCH transmission procedures according to the stored E-DPCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-DPCCH Info".

2> perform E-DPDCH transmission procedures according to the stored E-DPDCH configuration as stated in:

3> subclause 8.6.5.16 for the IE "E-DCH Transmission Time Interval";

3> subclause 8.6.5.17 for the IE "HARQ info for E-DCH";

3> subclause 8.6.6.37 for the IE "E-DPDCH Info".

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

3> be performed in accordance with the received scheduling grant on E-AGCH/E-RGCH (see [15]); and

3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).

1>For TDD:

2>perform E-AGCH reception procedures according to the stored E_AGCH configuration as stated in:

3> subclause 8.6.3.14 for the IE "New E-RNTI".

2> Perform E-HICH reception;

2> for 3.84/7.68 Mcps TDD, perform E-RUCCH transmission procedures according to the stored E-RUCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-RUCCH Info".

2> for 1.28 Mcps TDD, perform E-RUCCH transmission procedure according to the stored PRACH configuration (see [60]) and the stored E-RUCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-RUCCH Info".

NOTE 1: The PRACH configuration is signalled directly to the UE in "E-RUCCH Info" IE in case of E-DCH serving cell change.

2> Perform E-PUCH transmission procedures according to the stored E-PUCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-PUCH Info".

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

3> be performed in accordance with the received scheduling grant on E-AGCH (see [15]); and

3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).

2> obtain and format the appropriate information on E-UCCH (see [15]). For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, the UE shall use the lowest E-DCH capability category, as specified in [35], to signal the UL control information on E-UCCH.

NOTE 2: For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, UTRAN should use the lowest E-DCH capability category when performing configuration, scheduling and reading the control information on E-UCCH, as it is not possible for Node B to be aware of the UE's E-DCH capability category during this period.

Reference

3GPP TS 25.331 clauses 8.2.2.3, 8.2.2.4, 8.3.1, 8.5.28, 8.6.3.14, 8.6.5.16, 8.6.5.17, 8.6.5.18, 8.6.6.37.

8.3.1.41.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL UPDATE CONFIRM message with a physical channel configuration causing it to start E-DCH transmission and HS_DSCH reception.

To confirm that the UE executes a cell update procedure when the UE transmits uplink data if the UE is in CELL_PCH state.

8.3.1.41.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents)

UE: PS-DCCH +DTCH_HS-DSCH +DTCH_E-DCH (state 6-18) under condition A12 for FDD or A11 for 1.28 Mcps TDD as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD or TDD
- UE supports HS-PDSCH
- UE supports E-DPDCH for FDD or E-PUCH for TDD

Test Procedure

The UE is in the CELL_DCH state and has a radio bearer mapped on E-DCH and HS-DSCH established with active E-DCH transmission and HS-DSCH reception.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to URA_PCH. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters URA_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE then enters the CELL_FACH state to transmit a CELL UPDATE message to the SS on the uplink CCCH with the IE "Cell update cause" set to value "Paging response" in response to the paging.

The SS transmits CELL UPDATE CONFIRM message which includes HS-PDSCH and E-DPDCH for FDD or E-PUCH for 1.28 Mcps TDD physical channel parameters on the downlink DCCH. Then the UE resumes E-DCH transmission and HS-DSCH reception, and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the URA_PCH state
3	←		PAGING TYPE 1	
4	→		CELL UPDATE	The UE enters the CELL_FACH state.
5	←		CELL UPDATE CONFIRM	
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the CELL_DCH state and starts E-DCH transmission and HS-DSCH reception.

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
-UE Timers and constants in connected mode - T312	 2

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3
URA Identity	0000 0000 0000 0001B

Paging Type 1 (Step 3)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - S-RNTI - SRNC Identity Cell Update Cause	 Check to see if set to value assigned in cell 1. Check to see if set to value assigned in cell 1. Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 5) (FDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
New Primary E-RNTI	'1010 1010 1010 1010'
New Secondary E-RNTI	Not Present
RRC State indicator	CELL_DCH
Uplink DPCH info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Downlink HS-PDSCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12 .
Downlink information common for all radio links - Timing indicator - Default DPCH Offset Value	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12 except for the following IEs. Initialize Arbitrary set to value 0..306688 by step of 512
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.

CELL UPDATE CONFIRM (Step 5) (TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
New E-RNTI	'1010 1010 1010 1010'
RRC State indicator	CELL_DCH
Uplink DPCH info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11.
Downlink HS-PDSCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11 .
Downlink information common for all radio links - Timing indicator - Default DPCH Offset Value	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11 except for the following IEs. Initialize Arbitrary set to value 0..7
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11.

8.3.1.41.5 Test requirement

After step 1, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 3, the UE shall transmit a CELL UPDATE message on uplink CCCH.

After step 5, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

8.3.1.41a Cell Update: Transition from URA_PCH to CELL_DCH: Success (start of E-DCH transmission, in the multi-frequency network environment, for 1.28Mcps TDD only)

8.3.1.41a.1 Definition

All UEs which support 1.28Mcps TDD and HS-PDSCH and E-PUCH.

8.3.1.41a.2 Conformance requirement

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

…

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

…

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

…

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1>act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

2> if the IE "Frequency info" is included in the message:

3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

4> act on the IE "Frequency info" as specified in subclause 8.6.6.1 in TS 25.331.

…

If the IE "New H-RNTI" is included, the UE shall:

2> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

1> for FDD:

2> if the IE "New Primary E-RNTI" and/or the IE "New Secondary E-RNTI" are/is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

3> store the new value(s) in the variable E_RNTI;

3> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

1> for TDD:

2> if the IE "New E-RNTI" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

3> store the new value in the variable E_RNTI;

3> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

When the variable E_DCH_TRANSMISSION is set to TRUE the UE shall:

1> for FDD:

2> use the value of the Primary E-RNTI and/or Secondary E-RNTI stored in the variable E_RNTI as UE identities in the E-AGCH reception procedure in the physical layer.

1> for TDD:

2> use the value of New E-RNTI stored in the variable E_RNTI as the UE identity in the E-AGCH reception procedure and the E-RUCCH transmission procedure in the physical layer.

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33 of TS 25.331.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34 of TS 25.331.

1> if the IE "HS-DSCH Timeslot Configuration" or "HS-PDSCH Midamble Configuration" is included:

2> store the received configuration;

2> determine the value for the HS_DSCH_RECEPTION variable and take actions as described in subclause 8.5.25.

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

1> in the case of TDD:

2> receive the HS-SCCH(s) according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> transmit the HS-SICH according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> for HS-SCCH power control the UE shall use the "BLER target" signalled in the first occurrence of the "HS-SCCH Set Configuration", and the UE shall also use the IE "Power Control GAP" for 1.28 Mcps TDD.

2> in 3.84 Mcps TDD and 7.68 Mcps TDD:

3> use the parameters specified in the IE "HS-SICH power control info" for open loop power control as defined in subclause 8.5.7.

2> in 1.28 Mcps TDD:

3> use the IE " $PRX_{HS\text{-}SICH}$ " to calculate and set an initial uplink transmission power;

3> use the IE " TPC step size" upon reception of TPC commands for closed loop power control;

3> perform closed loop power control on HS-SICH within the interval indicated in the IE "Power Control GAP";

3> use the IE "Pathloss compensation switch" to determine if the pathloss compensation from the beacon channel estimation should be taken into account for closed loop power control on HS-SICH;

3> use default value of "Uplink synchronisation frequency" and same value of "Uplink synchronisation step size" in "Uplink DPCH info" for HS-SICH upon reception of SS commands for closed loop uplink synchronisation on HS-SICH.

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

…

If the IE "Downlink information for each radio link" is included in a received message, the UE shall:

1> if the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message:

2> if the IE "Serving HS-DSCH radio link indicator" is set to 'TRUE':

3> consider this radio link as the serving HS-DSCH radio link.

2> if the IE "Serving E-DCH radio link indicator" is set to 'TRUE':

3> consider this radio link as the serving E-DCH radio link.

2> if the IE "E-AGCH Info" is included:

3> store the newly received E-AGCH configuration.

2> if the IE "E-HICH information" is included:

3> store this E-HICH configuration for the concerning radio link.

2> if the IE "E-RGCH information" is included:

3> store this E-RGCH configuration for the concerning radio link.

2> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

2> act on the other IEs contained in the IE "Downlink information for each radio link" as specified in subclause 8.6 applied on this radio link.

…

If the IE "E-DCH Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> for FDD:

2> if the IE "E-DPCCH Info" is included:

3> store the newly received E-DPCCH configuration.

2> if the IE "E-DPDCH Info" is included:

3> store the newly received E-DPDCH configuration.

…

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

…

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable E_DCH_TRANSMISSION is set to TRUE, the UE shall:

1>For FDD:

2> perform E_AGCH reception procedures according to the stored E_AGCH configuration as stated in:

3> subclause 8.6.3.14 for the IE "New Primary E-RNTI" and the IE "New Secondary E-RNTI".

2> perform E-HICH reception procedures for all radio links in the E-DCH active set;

2> perform E-RGCH reception procedures for all radio links in the active set for which an E-RGCH configuration has been provided;

2> perform E-DPCCH transmission procedures according to the stored E-DPCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-DPCCH Info".

2> perform E-DPDCH transmission procedures according to the stored E-DPDCH configuration as stated in:

3> subclause 8.6.5.16 for the IE "E-DCH Transmission Time Interval";

3> subclause 8.6.5.17 for the IE "HARQ info for E-DCH";

3> subclause 8.6.6.37 for the IE "E-DPDCH Info".

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

3> be performed in accordance with the received scheduling grant on E-AGCH/E-RGCH (see [15]); and

3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).

1>For TDD:

2>perform E-AGCH reception procedures according to the stored E_AGCH configuration as stated in:

3> subclause 8.6.3.14 for the IE "New E-RNTI".

2> Perform E-HICH reception;

2> for 3.84/7.68 Mcps TDD, perform E-RUCCH transmission procedures according to the stored E-RUCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-RUCCH Info".

2> for 1.28 Mcps TDD, perform E-RUCCH transmission procedure according to the stored PRACH configuration (see [60]) and the stored E-RUCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-RUCCH Info".

NOTE 1: The PRACH configuration is signalled directly to the UE in "E-RUCCH Info" IE in case of E-DCH serving cell change.

2> Perform E-PUCH transmission procedures according to the stored E-PUCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-PUCH Info".

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

3> be performed in accordance with the received scheduling grant on E-AGCH (see [15]); and

3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).

2> obtain and format the appropriate information on E-UCCH (see [15]). For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, the UE shall use the lowest E-DCH capability category, as specified in [35], to signal the UL control information on E-UCCH.

NOTE 2: For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, UTRAN should use the lowest E-DCH capability category when performing configuration, scheduling and reading the control information on E-UCCH, as it is not possible for Node B to be aware of the UE's E-DCH capability category during this period.

…

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

1> for FDD, 3.84 Mcps TDD and 7.68 Mcps TDD, if the IE "Frequency info" is included; or

1> for 1.28 Mcps TDD, if the IE "Frequency info" is included and the "Second Frequency info" is not included:

2> if the frequency is different from the currently used frequency:

3> store and use the frequency indicated by the IE "Frequency Info";

3> if the received message is used to perform a Timing-maintained hard handover (see subclause 8.3.5.2),and IE "Timing maintained Synchronization indicator" is included:

4> not perform any physical layer synchronisation procedure (FDD only);

3> else:

4> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

2> if the frequency is the same as the currently used frequency:

3> continue to use the currently used frequency;

3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> for 1.28 Mcps TDD, if both the IE "Frequency info" and the IE "Second Frequency info" are included:

2> the frequency in IE "Frequency info" is used as the primary frequency, and the frequency in IE "Second Frequency info" is used as the secondary frequency;

2> store the primary frequency;

2> if the secondary frequency is different with the currently used frequency:

3> store and use the secondary frequency.

2> if the secondary frequency is the same as the currently used frequency:

3> continue to use the currently used frequency.

1> if the IE "Frequency info" is not included and the UE has a currently used frequency:

2> continue to use the currently used frequency;

…

If the IE "Second Frequency info" is included, the UE shall:

1> act as specified in section 8.6.6.1.

If the IE "FPACH Frequency info" is included, the UE shall:

1> store the FPACH frequency indicated in the IE "FPACH Frequency info".

If the IE "UpPCH Position Info" is included:

1> store and use the UpPCH position indicated by the IE "UpPCH Position Info ". The calculation of the uplink access position is described in [33].

If the IE "UpPCH Position Info" is not included:

1> use the UpPTS as the default UpPCH position.

Reference

3GPP TS 25.331 clauses 8.2.2.3, 8.2.2.4, 8.3.1, 8.5.28, 8.6.3.14, 8.6.5.16, 8.6.5.17, 8.6.5.18, 8.6.6.1, 8.6.6.37, 8.6.6.43.

8.3.1.41a.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL UPDATE CONFIRM message with a physical channel configuration causing it to start E-DCH transmission and HS_DSCH reception in the multi-frequency network environment.

To confirm that the UE executes a cell update procedure when the UE transmits uplink data if the UE is in CELL_PCH state, in the multi-frequency network environment.

8.3.1.41a.4 Method of test

Initial Condition

System Simulator: 1 cell, 3 frequency (one is primary frequency, others are secondary frequency)

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents)

UE: PS-DCCH +DTCH_HS-DSCH +DTCH_E-DCH (state 6-18) under condition A11 for 1.28 Mcps TDD as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports TDD
- UE supports HS-PDSCH
- UE supports E-PUCH

Test Procedure

The UE is in the CELL_DCH state and has a radio bearer mapped on E-DCH and HS-DSCH established with active E-DCH transmission and HS-DSCH reception at one secondary frequency of the cell.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to URA_PCH. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters URA_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE then enters the CELL_FACH state to transmit a CELL UPDATE message to the SS on the uplink CCCH with the IE “Cell update cause" set to value “Paging response” in response to the paging.

The SS transmits CELL UPDATE CONFIRM message which includes HS-PDSCH and E-PUCH physical channel parameters on the downlink DCCH. Then the UE resumes E-DCH transmission and HS-DSCH reception, and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the URA_PCH state
3	←		PAGING TYPE 1	
4	→		CELL UPDATE	The UE enters the CELL_FACH state.
5	←		CELL UPDATE CONFIRM	
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the CELL_DCH state and starts E-DCH transmission and HS-DSCH reception.

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
-UE Timers and constants in connected mode - T312	 2

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3
URA Identity	0000 0000 0000 0001B

Paging Type 1 (Step 3)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
New E-RNTI	'1010 1010 1010 1010'
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN downlink (Nd)	Set to the primary frequency of the cell
Multi-frequency Info	
- Second Frequency Info	Same as one secondary frequency of the cell
- FPACH Frequency Info	Not present
- UpPCH Position Info	Not present
Uplink DPCH info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11.
Downlink HS-PDSCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11 .
Downlink information common for all radio links - Timing indicator - Default DPCH Offset Value	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11 except for the following IEs. Initialize Arbitrary set to value 0..7
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A11.

8.3.1.41a.5 Test requirement

After step 1, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 3, the UE shall transmit a CELL UPDATE message on uplink CCCH.

After step 5, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

8.3.1.42 Cell Update: Transition from CELL_PCH to CELL_DCH: Success (frequency modification, start of E-DCH transmission)

8.3.1.42.1 Definition

All UEs which support FDD and HS-PDSCH and E-DPDCH and all UEs which support TDD and HS-PDSCH and E-PUCH..

8.3.1.42.2 Conformance requirement

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

…

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

…

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

…

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1>act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

2> if the IE "Frequency info" is included in the message:

3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

4> act on the IE "Frequency info" as specified in subclause 8.6.6.1 in TS 25.331.

…

If the IE "New H-RNTI" is included, the UE shall:

1> if the IE "Downlink HS-PDSCH Information" is also included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 of TS 25.331 applied on the received message:

2> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

1> for FDD:

2> if the IE "New Primary E-RNTI" and/or the IE "New Secondary E-RNTI" are/is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

3> store the new value(s) in the variable E_RNTI;

3> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

1> for TDD:

2> if the IE "New E-RNTI" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

3> store the new value in the variable E_RNTI;

3> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

When the variable E_DCH_TRANSMISSION is set to TRUE the UE shall:

1> for FDD:

2> use the value of the Primary E-RNTI and/or Secondary E-RNTI stored in the variable E_RNTI as UE identities in the E-AGCH reception procedure in the physical layer.

1> for TDD:

2> use the value of New E-RNTI stored in the variable E_RNTI as the UE identity in the E-AGCH reception procedure and the E-RUCCH transmission procedure in the physical layer.

…

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

1> for FDD, 3.84 Mcps TDD and 7.68 Mcps TDD, if the IE "Frequency info" is included; or

1> for 1.28 Mcps TDD, if the IE "Frequency info" is included and the "Second Frequency info" is not included:

2> if the frequency is different from the currently used frequency:

3> store and use the frequency indicated by the IE "Frequency Info";

3> if the received message is used to perform a Timing-maintained hard handover (see subclause 8.3.5.2), and IE "Timing maintained Synchronization indicator" is included:

4> not perform any physical layer synchronisation procedure (FDD only);

3> else:

4> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33 of TS 25.331.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34 of TS 25.331.

1> if the IE "HS-DSCH Timeslot Configuration" or "HS-PDSCH Midamble Configuration" is included:

2> store the received configuration;

2> determine the value for the HS_DSCH_RECEPTION variable and take actions as described in subclause 8.5.25.

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

1> in the case of TDD:

2> receive the HS-SCCH(s) according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> transmit the HS-SICH according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> for HS-SCCH power control the UE shall use the "BLER target" signalled in the first occurrence of the "HS-SCCH Set Configuration", and the UE shall also use the IE "Power Control GAP" for 1.28 Mcps TDD.

2> in 3.84 Mcps TDD and 7.68 Mcps TDD:

3> use the parameters specified in the IE "HS-SICH power control info" for open loop power control as defined in subclause 8.5.7.

2> in 1.28 Mcps TDD:

3> use the IE " $PRX_{HS-SICH}$ " to calculate and set an initial uplink transmission power;

3> use the IE " TPC step size" upon reception of TPC commands for closed loop power control;

3> perform closed loop power control on HS-SICH within the interval indicated in the IE "Power Control GAP";

3> use the IE "Pathloss compensation switch" to determine if the pathloss compensation from the beacon channel estimation should be taken into account for closed loop power control on HS-SICH;

3> use default value of "Uplink synchronisation frequency" and same value of "Uplink synchronisation step size" in "Uplink DPCH info" for HS-SICH upon reception of SS commands for closed loop uplink synchronisation on HS-SICH.

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

…

If the IE "E-DCH Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> for FDD:

2> if the IE "E-DPCCH Info" is included:

3> store the newly received E-DPCCH configuration.

2> if the IE "E-DPDCH Info" is included:

3> store the newly received E-DPDCH configuration.

…

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

…

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable E_DCH_TRANSMISSION is set to TRUE, the UE shall:

1>For FDD:

2> perform E_AGCH reception procedures according to the stored E_AGCH configuration as stated in:

3> subclause 8.6.3.14 for the IE "New Primary E-RNTI" and the IE "New Secondary E-RNTI".

2> perform E-HICH reception procedures for all radio links in the E-DCH active set;

2> perform E-RGCH reception procedures for all radio links in the active set for which an E-RGCH configuration has been provided;

2> perform E-DPCCH transmission procedures according to the stored E-DPCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-DPCCH Info".

2> perform E-DPDCH transmission procedures according to the stored E-DPDCH configuration as stated in:

3> subclause 8.6.5.16 for the IE "E-DCH Transmission Time Interval";

3> subclause 8.6.5.17 for the IE "HARQ info for E-DCH";

3> subclause 8.6.6.37 for the IE "E-DPDCH Info".

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

3> be performed in accordance with the received scheduling grant on E-AGCH/E-RGCH (see [15]); and

3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).

1>For TDD:

2>perform E-AGCH reception procedures according to the stored E_AGCH configuration as stated in:

3> subclause 8.6.3.14 for the IE "New E-RNTI".

2> Perform E-HICH reception;

2> for 3.84/7.68 Mcps TDD, perform E-RUCCH transmission procedures according to the stored E-RUCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-RUCCH Info".

2> for 1.28 Mcps TDD, perform E-RUCCH transmission procedure according to the stored PRACH configuration (see [60]) and the stored E-RUCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-RUCCH Info".

NOTE 1: The PRACH configuration is signalled directly to the UE in "E-RUCCH Info" IE in case of E-DCH serving cell change.

2> Perform E-PUCH transmission procedures according to the stored E-PUCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-PUCH Info".

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

3> be performed in accordance with the received scheduling grant on E-AGCH (see [15]); and

3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).

2> obtain and format the appropriate information on E-UCCH (see [15]). For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, the UE shall use the lowest E-DCH capability category, as specified in [35], to signal the UL control information on E-UCCH.

NOTE 2: For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, UTRAN should use the lowest E-DCH capability category when performing configuration, scheduling and reading the control information on E-UCCH, as it is not possible for Node B to be aware of the UE's E-DCH capability category during this period.

Reference

3GPP TS 25.331 clauses 8.2.2.3, 8.2.2.4, 8.3.1, 8.6.3.1,8.6.3.1b,8.6.3.14, 8.6.5.6,8.6.5.16, 8.6.5.17, 8.6.6.1, 8.6.6.32, 8.6.6.33, 8.6.6.34, 8.6.6.37.

8.3.1.42.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL UPDATE CONFIRM message with a physical channel configuration causing it to start E-DCH transmission and HS-DSCH reception on a different cell and frequency.

To confirm that the UE enters CELL_PCH state on another frequency and stops E-DCH transmission and HS-DSCH reception when it receives a RADIO BEARER RECONFIGURATION message.

8.3.1.42.4 Method of test

Initial Condition

System Simulator: 2 cells - cell 1 is active and cell 6 is inactive.

UE: PS-DCCH +DTCH_HS-DSCH +DTCH_E-DCH (state 6-18) under condition A13 for FDD or A12 for 1.28 Mcps TDD as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD or TDD
- UE supports HS-PDSCH

- UE supports E-DPDCH for FDD or E-PUCH for TDD

Test Procedure

Table 8.3.1.42

Parameter	Unit	Cell 1			Cell 6		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Frequency (f1)			High Range Frequency (f2)		
CPICH Ec (FDD)	dBm/3.84MHz	-60	-72	-60	Off	-55	-72
P-CCPCH RSCP (1.28 Mcps TDD)	dBm	-60	-72	-60	Off	-55	-72

Table 8.3.1.42 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The SS has configured its downlink transmission power setting according to columns "T0" in table 8.3.1.42. UE is in state 6-18 as specified in TS34.108 clause 7.4 in cell 1and has a radio bearer established mapped on E-DCH and HS-DSCH established with active E-DCH transmission and HS-DSCH reception.

The SS switches its downlink transmission power settings to columns "T1". The SS transmits a RADIO BEARER RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to CELL_PCH in cell 6. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC, selects cell 6 and enters CELL_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE then enters the CELL_FACH state to transmit a CELL UPDATE message to the SS on the uplink CCCH with the IE "Cell update cause" set to value "Paging response" in response to the paging.

The SS switches its downlink transmission power settings to columns "T2". The SS transmits CELL UPDATE CONFIRM message, which invokes UE to re-map the SRB's & the PS RAB on E-DCH/HS-DSCH for cell 1. Then the UE establishes HS-DSCH and E-DCH in cell 1, and resumes E-DCH transmission and transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH in cell 1.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_DCH state in cell 1 and the SS configures its downlink transmission power setting according to columns "T1" in table 8.3.1.42.
2	←		RADIO BEARER RECONFIGURATION	
3	→		RADIO BEARER RECONFIGURATION COMPLETE	After transmitting this message, the UE enters the CELL_PCH state in cell 6
4	SS			SS sends the L2 ack on the RADIO BEARER RECONFIGURATION COMPLETE message and then waits 5 seconds to allow the UE to read system information before the next step. Note: The SS should continue to keep the dedicated channel configuration during the time when the L2 ack is sent to the UE.
5	←		PAGING TYPE 1	
6	→		CELL UPDATE	The UE enters the CELL_FACH state.
7	SS			The SS switches its downlink transmission power settings to columns "T2" in table 8.3.1.42.
8	←		CELL UPDATE CONFIRM	
9	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE changes to cell 1, enters the CELL_DCH state and starts E-DCH transmission and HS-DSCH reception.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 2) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
RB information to reconfigure list	
- RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	2

Information Element	Value/remark
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4

Information Element	Value/remark
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE

Information Element	Value/remark
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted UL TrCH information	
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	1
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	2
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Maximum allowed UL TX power	Not Present

RADIO BEARER RECONFIGURATION (Step 2) (1.28 Mcps TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
RB information to reconfigure list	
- RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	2

Information Element	Value/remark
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4

Information Element	Value/remark
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE

Information Element	Value/remark
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted UL TrCH information	
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	1
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	2
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	
- CHOICE mode	TDD
- UARFCN(Nt)	Same UARFCN as used for cell 6
Maximum allowed UL TX power	Not Present

RADIO BEARER RECONFIGURATION (Step 2) (3.84 Mcps TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
RB information to reconfigure list	
- RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.3.4.5.1
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6.10 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.3.4.5.1
- MAC logical channel priority	2

Information Element	Value/remark
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6.10 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.3.4.5.1
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4

Information Element	Value/remark
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6.10 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.3.4.5.1
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6.10 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE

Information Element	Value/remark
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6.10 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted UL TrCH information	
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	1
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	2
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	
- CHOICE mode	TDD
- UARFCN(Nt)	Same UARFCN as used for cell 6
Maximum allowed UL TX power	Not Present

RADIO BEARER RECONFIGURATION (Step 2) (7.68 Mcps TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
RB information to reconfigure list	
- RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.11.6.4.5.1
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6.11 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.11.6.4.5.1
- MAC logical channel priority	2

Information Element	Value/remark
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6.11 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.11.6.4.5.1
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4

Information Element	Value/remark
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6.11 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.11.6.4.5.1
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6.11 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE

Information Element	Value/remark
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6.11 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted UL TrCH information	
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	1
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	2
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	
- CHOICE mode	TDD
- UARFCN(Nt)	Same UARFCN as used for cell 6
Maximum allowed UL TX power	Not Present

Paging Type 1 (Step 5)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 6)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 8) (FDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
New Primary E-RNTI	'0101 0101 0101 0101'
New Secondary E-RNTI	Not Present
RRC State indicator	CELL_DCH
RB information to reconfigure list	
- RB RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1

- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present

- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	256
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100

- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	7
- E-DCH MAC-d flow identity	2
- DDI	5
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	336 bits
- Include in scheduling info	TRUE
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	7
- RB stop/continue	Not Present
Added or Reconfigured UL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
Frequency info	Set to the frequency of cell 1
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
Downlink information common for all radio links	
- Downlink information for all radio link	
- CHOICE *DPCH info*	
- Downlink DPCH info for all RL	
- Timing Indication	Initialize
- Downlink DPCH power control information	
- DPC mode	0 (Single)
- CHOICE mode	FDD
- Power offset PPilot-DPDCH	0
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set

- CHOICE mode	FDD
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- SSDT information	Not present
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
- MAC-hs reset indicator	Not Present
Downlink information for each radio link list	
- Downlink information for each radio link	
- Choice mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the primary scrambling code of cell 1
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Serving HS-DSCH radio link indicator	TRUE
- Serving E-DCH radio link indicator	TRUE
- CHOICE DPCH info	
- Downlink DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	1
- Spreading factor	Reference to clause 6.10 Parameter Set
- Code number	0
- Scrambling code change	OMIT
- TPC combination index	0
- Closed loop timing adjustment mode	Not Present
- E-AGCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
- E-HICH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
- E-RGCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.

CELL UPDATE CONFIRM (Step 8) (1.28 Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
New E-RNTI	'0101 0101 0101 0101'
RRC State indicator	CELL_DCH
RB information to reconfigure list	
- RB RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH

- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)

- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	256
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present

- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	7
- E-DCH MAC-d flow identity	2
- DDI	5
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	336 bits
- Include in scheduling info	TRUE
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	7
- RB stop/continue	Not Present
Added or Reconfigured UL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Frequency info	Set to the frequency of cell 1
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Downlink information common for all radio links	
- Downlink information for all radio link	
- CHOICE *DPCH info*	
- Downlink DPCH info for all RL	
- Timing Indication	Initialize
Downlink information for each radio link list	
- Downlink information for each radio link	
- Choice mode	TDD
- Primary CCPCH info	
- CHOICE *TDD option*	1.28 Mcps TDD
- TSTD indicator	FALSE
- Cell parameters ID	Set to Cell parameters ID of cell 1
- SCTD indicator	FALSE
- Downlink DPCH info for each RL	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition

	A12.
- E-AGCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
- E-HICH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
- E-RGCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.

CELL UPDATE CONFIRM (Step 8) (3.84 Mcps TDD and 7.68Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
New E-RNTI	'0101 0101 0101 0101'
RRC State indicator	CELL_DCH
RB information to reconfigure list	
- RB RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH

- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)

- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	256
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present

- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	7
- E-DCH MAC-d flow identity	2
- DDI	5
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	336 bits
- Include in scheduling info	TRUE
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	7
- RB stop/continue	Not Present
Added or Reconfigured UL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Frequency info	Set to the frequency of cell 1
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Downlink information common for all radio links	
- Downlink information for all radio link	
- CHOICE *DPCH info*	
- Downlink DPCH info for all RL	
- Timing Indication	Initialize
Downlink information for each radio link list	
- Downlink information for each radio link	
- Choice mode	TDD
- Primary CCPCH info	
- CHOICE *TDD option*	3.84 and 7.68 Mcps TDD
- CHOICE sync case	Sync Case 2
- Timeslot	0
- TSTD indicator	FALSE
- Cell parameters ID	Set to Cell parameters ID of cell 1
- SCTD indicator	FALSE

- Downlink DPCH info for each RL	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
- E-AGCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
- E-HICH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
- E-RGCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.

8.3.1.42.5 Test requirement

After step 2, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 5, the UE shall transmit a CELL UPDATE message on the uplink CCCH.

After step 8, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC in cell 1.

8.3.1.42a Cell Update: Transition from CELL_PCH to CELL_DCH: Success (frequency modification, start of E-DCH transmission, F-DPCH Configured)

8.3.1.42a.1 Definition

All UEs which support FDD, HS-PDSCH, E-DPDCH and fully support F-DPCH.

8.3.1.42a.2 Conformance requirement

same conformance requirement as in clause 8.3.1.42.2

8.3.1.42a.3 Test purpose

same test purpose as in clause 8.3.1.42.3

8.3.1.42a.4 Method of test

Initial Condition

System Simulator: 2 cells - cell 1 is active and cell 6 is inactive.

UE: PS-DCCH +DTCH_HS-DSCH +DTCH_E-DCH (state 6-18) under condition A14 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH
- UE supports E-DPDCH
- UE fully supports F-DPCH

Test Procedure

Same test procedure as in clause 8.3.1.42.4

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 2)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
RB information to reconfigure list	
- RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	2

Information Element	Value/remark
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4

Information Element	Value/remark
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE

Information Element	Value/remark
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted UL TrCH information	
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	1
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	2
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	1
Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Maximum allowed UL TX power	Not Present

Paging Type 1 (Step 5)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 6)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
New Primary E-RNTI	'0101 0101 0101 0101'
New Secondary E-RNTI	Not Present
RRC State indicator	CELL_DCH
RB information to reconfigure list	
- RB RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present

- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present

- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	256
- Timer_RST	500

- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	7
- E-DCH MAC-d flow identity	2
- DDI	5
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	336 bits
- Include in scheduling info	TRUE
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	7
- RB stop/continue	Not Present
Added or Reconfigured UL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.
Frequency info	Set to the frequency of cell 1
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.
Downlink information common for all radio links	
- Downlink information for all radio link	
- CHOICE *DPCH info*	F-DPCH
- Downlink F-DPCH info for all RL	
- Timing Indication	Initialize
- Downlink F-DPCH power control information	
- DPC mode	0 (single)
- TPC command error rate target	0.04
- CHOICE mode	FDD
- DPCH compressed mode info	Not Present

- TX Diversity mode	None
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
- MAC-hs reset indicator	Not Present
Downlink information for each radio link list	
- Downlink information for each radio link	
- Choice mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the primary scrambling code of cell 1
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Serving HS-DSCH radio link indicator	TRUE
- Serving E-DCH radio link indicator	TRUE
- CHOICE DPCH info	F-DPCH
- Downlink F-DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- F-DPCH frame offset	Set to value Default F-DPCH Offset Value (as currently stored in SS) mod 38400
- Secondary CPICH info	Not Present
- Secondary scrambling code	Not Present
- Code number	12
- TPC combination index	0
- Closed loop timing adjustment mode	Not Present
- E-AGCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.
- E-HICH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.
- E-RGCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.

8.3.1.42a.5 Test requirement

same test requirement as in clause 8.3.1.42.5

8.3.1.42b Cell Update: Transition from CELL_PCH to CELL_DCH: Success (frequency modification, start of E-DCH transmission in the multi-frequency network environment, for 1.28Mcps TDD only)

8.3.1.42b.1 Definition

All UEs which support 1.28Mcps TDD and HS-PDSCH and E-PUCH..

8.3.1.42b.2 Conformance requirement

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

…

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

…

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

…

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1>act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

2> if the IE "Frequency info" is included in the message:

3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

4> act on the IE "Frequency info" as specified in subclause 8.6.6.1 in TS 25.331.

…

If the IE "New H-RNTI" is included, the UE shall:

1> if the IE "Downlink HS-PDSCH Information" is also included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 of TS 25.331 applied on the received message:

2> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

1> for FDD:

2> if the IE "New Primary E-RNTI" and/or the IE "New Secondary E-RNTI" are/is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

3> store the new value(s) in the variable E_RNTI;

3> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

1> for TDD:

2> if the IE "New E-RNTI" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

3> store the new value in the variable E_RNTI;

3> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

When the variable E_DCH_TRANSMISSION is set to TRUE the UE shall:

1> for FDD:

2> use the value of the Primary E-RNTI and/or Secondary E-RNTI stored in the variable E_RNTI as UE identities in the E-AGCH reception procedure in the physical layer.

1> for TDD:

2> use the value of New E-RNTI stored in the variable E_RNTI as the UE identity in the E-AGCH reception procedure and the E-RUCCH transmission procedure in the physical layer.

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33 of TS 25.331.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34 of TS 25.331.

1> if the IE "HS-DSCH Timeslot Configuration" or "HS-PDSCH Midamble Configuration" is included:

2> store the received configuration;

2> determine the value for the HS_DSCH_RECEPTION variable and take actions as described in subclause 8.5.25.

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

1> in the case of TDD:

2> receive the HS-SCCH(s) according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> transmit the HS-SICH according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.

2> for HS-SCCH power control the UE shall use the "BLER target" signalled in the first occurrence of the "HS-SCCH Set Configuration", and the UE shall also use the IE "Power Control GAP" for 1.28 Mcps TDD.

2> in 3.84 Mcps TDD and 7.68 Mcps TDD:

3> use the parameters specified in the IE "HS-SICH power control info" for open loop power control as defined in subclause 8.5.7.

2> in 1.28 Mcps TDD:

3> use the IE " $PRX_{HS-SICH}$ " to calculate and set an initial uplink transmission power;

3> use the IE " TPC step size" upon reception of TPC commands for closed loop power control;

3> perform closed loop power control on HS-SICH within the interval indicated in the IE "Power Control GAP";

3> use the IE "Pathloss compensation switch" to determine if the pathloss compensation from the beacon channel estimation should be taken into account for closed loop power control on HS-SICH;

3> use default value of "Uplink synchronisation frequency" and same value of "Uplink synchronisation step size" in "Uplink DPCH info" for HS-SICH upon reception of SS commands for closed loop uplink synchronisation on HS-SICH.

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

…

If the IE "E-DCH Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> for FDD:

2> if the IE "E-DPCCH Info" is included:

3> store the newly received E-DPCCH configuration.

2> if the IE "E-DPDCH Info" is included:

3> store the newly received E-DPDCH configuration.

…

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

…

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable E_DCH_TRANSMISSION is set to TRUE, the UE shall:

1>For FDD:

2> perform E_AGCH reception procedures according to the stored E_AGCH configuration as stated in:

3> subclause 8.6.3.14 for the IE "New Primary E-RNTI" and the IE "New Secondary E-RNTI".

2> perform E-HICH reception procedures for all radio links in the E-DCH active set;

2> perform E-RGCH reception procedures for all radio links in the active set for which an E-RGCH configuration has been provided;

2> perform E-DPCCH transmission procedures according to the stored E-DPCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-DPCCH Info".

2> perform E-DPDCH transmission procedures according to the stored E-DPDCH configuration as stated in:

3> subclause 8.6.5.16 for the IE "E-DCH Transmission Time Interval";

3> subclause 8.6.5.17 for the IE "HARQ info for E-DCH";

3> subclause 8.6.6.37 for the IE "E-DPDCH Info".

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

3> be performed in accordance with the received scheduling grant on E-AGCH/E-RGCH (see [15]); and

3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).

1>For TDD:

2>perform E-AGCH reception procedures according to the stored E_AGCH configuration as stated in:

3> subclause 8.6.3.14 for the IE "New E-RNTI".

2> Perform E-HICH reception;

2> for 3.84/7.68 Mcps TDD, perform E-RUCCH transmission procedures according to the stored E-RUCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-RUCCH Info".

2> for 1.28 Mcps TDD, perform E-RUCCH transmission procedure according to the stored PRACH configuration (see [60]) and the stored E-RUCCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-RUCCH Info".

NOTE 1: The PRACH configuration is signalled directly to the UE in "E-RUCCH Info" IE in case of E-DCH serving cell change.

2> Perform E-PUCH transmission procedures according to the stored E-PUCH configuration as stated in:

3> subclause 8.6.6.37 for the IE "E-PUCH Info".

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).

2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

3> be performed in accordance with the received scheduling grant on E-AGCH (see [15]); and

3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).

2> obtain and format the appropriate information on E-UCCH (see [15]). For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, the UE shall use the lowest E-DCH capability category, as specified in [35], to signal the UL control information on E-UCCH.

NOTE 2: For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, UTRAN should use the lowest E-DCH capability category when performing configuration, scheduling and reading the control information on E-UCCH, as it is not possible for Node B to be aware of the UE's E-DCH capability category during this period.

…

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

1> for FDD, 3.84 Mcps TDD and 7.68 Mcps TDD, if the IE "Frequency info" is included; or

1> for 1.28 Mcps TDD, if the IE "Frequency info" is included and the "Second Frequency info" is not included:

2> if the frequency is different from the currently used frequency:

3> store and use the frequency indicated by the IE "Frequency Info";

3> if the received message is used to perform a Timing-maintained hard handover (see subclause 8.3.5.2),and IE "Timing maintained Synchronization indicator" is included:

4> not perform any physical layer synchronization procedure (FDD only);

3> else:

4> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

2> if the frequency is the same as the currently used frequency:

3> continue to use the currently used frequency;

3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> for 1.28 Mcps TDD, if both the IE "Frequency info" and the IE "Second Frequency info" are included:

2> the frequency in IE "Frequency info" is used as the primary frequency, and the frequency in IE "Second Frequency info" is used as the secondary frequency;

2> store the primary frequency;

2> if the secondary frequency is different with the currently used frequency:

3> store and use the secondary frequency.

2> if the secondary frequency is the same as the currently used frequency:

3> continue to use the currently used frequency.

1> if the IE "Frequency info" is not included and the UE has a currently used frequency:

2> continue to use the currently used frequency;

…

If the IE "Second Frequency info" is included, the UE shall:

1> act as specified in section 8.6.6.1.

If the IE "FPACH Frequency info" is included, the UE shall:

1> store the FPACH frequency indicated in the IE "FPACH Frequency info".

If the IE "UpPCH Position Info" is included:

1> store and use the UpPCH position indicated by the IE "UpPCH Position Info ". The calculation of the uplink access position is described in [33].

If the IE "UpPCH Position Info" is not included:

1> use the UpPTS as the default UpPCH position.

Reference

3GPP TS 25.331 clauses 8.2.2.3, 8.2.2.4, 8.3.1, 8.6.3.1, 8.6.3.1b, 8.6.3.14, 8.6.5.6, 8.6.5.16, 8.6.5.17, 8.6.6.1, 8.6.6.32, 8.6.6.33, 8.6.6.34, 8.6.6.37.

8.3.1.42b.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL UPDATE CONFIRM message with a physical channel configuration causing it to start E-DCH transmission and HS-DSCH reception on a different cell and frequency in the multi-frequency network environment.

To confirm that the UE enters CELL_PCH state on another frequency and stops E-DCH transmission and HS-DSCH reception when it receives a RADIO BEARER RECONFIGURATION message in the multi-frequency network environment.

8.3.1.42b.4 Method of test

Initial Condition

System Simulator:

2 cells

-cell 1 is active, 3 frequency (one is primary frequency, others are secondary frequency)

- cell 6 is inactive, 1 frequency.

UE: PS-DCCH +DTCH_HS-DSCH +DTCH_E-DCH (state 6-18) under condition A12 for 1.28 Mcps TDD as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports TDD
- UE supports HS-PDSCH
- UE supports E-PUCH

Test Procedure

Table 8.3.1.42b

Parameter	Unit	Cell 1			Cell 6		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Frequency			High Range Frequency		
P-CCPCH RSCP (1.28 Mcps TDD)	dBm	-60	-72	-60	Off	-55	-72

Table 8.3.1.42b illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The SS has configured its downlink transmission power setting according to columns "T0" in table 8.3.1.42b. UE is in state 6-18 as specified in TS34.108 clause 7.4 in cell 1and has a radio bearer established mapped on E-DCH and HS-DSCH established with active E-DCH transmission and HS-DSCH reception at one secondary frequency.

The SS switches its downlink transmission power settings to columns "T1". The SS transmits a RADIO BEARER RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to CELL_PCH in cell 6. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC, selects cell 6 and enters CELL_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE then enters the CELL_FACH state to transmit a CELL UPDATE message to the SS on the uplink CCCH with the IE "Cell update cause" set to value "Paging response" in response to the paging.

The SS switches its downlink transmission power settings to columns "T2". The SS transmits CELL UPDATE CONFIRM message, which invokes UE to re-map the SRB's & the PS RAB on E-DCH/HS-DSCH for cell 1. Then the UE establishes HS-DSCH and E-DCH at one secondary frequency in cell 1, and resumes E-DCH transmission and transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH in cell 1.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_DCH state in cell 1 and the SS configures its downlink transmission power setting according to columns "T1" in table 8.3.1.42b.
2	←		RADIO BEARER RECONFIGURATION	
3	→		RADIO BEARER RECONFIGURATION COMPLETE	After transmitting this message, the UE enters the CELL_PCH state in cell 6
4	SS			SS sends the L2 ack on the RADIO BEARER RECONFIGURATION COMPLETE message and then waits 5 seconds to allow the UE to read system information before the next step. Note: The SS should continue to keep the dedicated channel configuration during the time when the L2 ack is sent to the UE.
5	←		PAGING TYPE 1	
6	→		CELL UPDATE	The UE enters the CELL_FACH state.
7	SS			The SS switches its downlink transmission power settings to columns "T2" in table 8.3.1.42b.
8	←		CELL UPDATE CONFIRM	
9	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE changes to cell 1, enters the CELL_DCH state and starts E-DCH transmission and HS-DSCH reception.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 2)

Use the same message sub-type titled "Packet to CELL_DCH from CELL_PCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
RB information to reconfigure list	
- RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	2

Information Element	Value/remark
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4

Information Element	Value/remark
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE

Information Element	Value/remark
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted UL TrCH information	
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	1
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	2
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	
- CHOICE mode	TDD
- UARFCN(Nt)	Same UARFCN as used for cell 6
Maximum allowed UL TX power	Not Present

Paging Type 1 (Step 5)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 6)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1
- SRNC Identity	Check to see if set to value assigned in cell 1
Cell Update Cause	Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
New E-RNTI	'0101 0101 0101 0101'
RRC State indicator	CELL_DCH
RB information to reconfigure list	
- RB RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH

- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)

- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	256
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present

- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	7
- E-DCH MAC-d flow identity	2
- DDI	5
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	336 bits
- Include in scheduling info	TRUE
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	7
- RB stop/continue	Not Present
Added or Reconfigured UL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Frequency info	
- UARFCN (Nt)	Same as primary frequency of the cell 1
Multi-frequency Info	
- Second Frequency Info	Same as one secondary frequency of the cell 1
- FPACH Frequency Info	Not present
- UpPCH Position Info	Not present
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
Downlink information common for all radio links	
- Downlink information for all radio link	
- CHOICE *DPCH info*	
- Downlink DPCH info for all RL	
- Timing Indication	Initialize
Downlink information for each radio link list	
- Downlink information for each radio link	
- Choice mode	TDD
- Primary CCPCH info	
- CHOICE *TDD option*	1.28 Mcps TDD

- TSTD indicator	FALSE
- Cell parameters ID	Set to Cell parameters ID of cell 1
- SCTD indicator	FALSE
- Downlink DPCH info for each RL	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
- E-AGCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
- E-HICH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.
- E-RGCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A12.

8.3.1.42b.5 Test requirement

After step 2, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 5, the UE shall transmit a CELL UPDATE message on the uplink CCCH.

After step 8, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC in cell 1.

8.3.1.43 Cell Update: Radio Link Failure, with active E-DCH transmission

8.3.1.43.1 Definition

All UEs which support FDD or TDD and HS-PDSCH and E-DPDCH for FDD or E-PUCH for TDD, and fully support F-DPCH (FDD only).

8.3.1.43.2 Conformance requirement

1> Radio link failure:

…

3> if the UE is in CELL_DCH state and the criteria for radio link failure are met as specified in subclause 8.5.6 of TS 25.331; or

…

4> perform cell update using the cause "radio link failure".

When initiating the URA update or cell update procedure, the UE shall:

…

1> if any IEs related to HS-DSCH are stored in the UE:

2> clear any stored IE "Downlink HS-PDSCH information";

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

1> if any IEs related to E-DCH are stored in the UE:

2> clear any stored IE "E-DCH info";

2> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

In CELL_DCH State, after receiving N313 consecutive "out of sync" indications from layer 1 for the established DPCCH or F-DPCH physical channel in FDD, and the physical channels associated with mapped DCCHs in TDD, the UE shall:

1> start timer T313;

1> upon receiving N315 successive "in sync" indications from layer 1 and upon change of UE state:

2> stop and reset timer T313.

1> if T313 expires:

2> consider it as a "Radio link failure".

Periods in time where neither "in sync" nor "out of sync" is reported by layer 1 do not affect the evaluation of the number of consecutive (resp. successive) "in sync" or "out of sync" indications.

When a radio link failure occurs, the UE shall:

1> clear the dedicated physical channel configuration;

1> perform actions as specified for the ongoing procedure;

1> if no procedure is ongoing or no actions are specified for the ongoing procedure:

2> perform a cell update procedure according to subclause 8.3.1 using the cause "radio link failure".

Reference

3GPP TS 25.331 clauses 8.3.1.2, 8.5.6.

8.3.1.43.3 Test purpose

1. To confirm that the UE detects the radio link failure condition when the F-DPCH physical channel is established (FDD only).
2. To confirm that the UE stops the E-DCH transmission and performs a Cell Update procedure after radio link failure.
3. To confirm that the UE keeps the radio bearer mapping option and transport channel configuration for E-DCH after the radio link failure. To confirm that the UE resumes the E-DCH transmission after the Cell Update procedure.

8.3.1.43.4 Method of test

Initial Condition

System Simulator: 1 cell – Cell 1

UE: PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD or 1.28 Mcps TDD
- UE supports HS-PDSCH
- UE supports E-DPDCH for FDD or E-PUCH for 1.28 Mcps TDD
- UE fully supports F-DPCH (FDD only)

Test Procedure

Table 8.3.1.43

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF
P-CCPCH RSCP (TDD)	dBm	-60	OFF

Table 8.3.1.43 illustrates the downlink power to be applied to Cell 1 at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is in CELL_DCH state and only signalling radio bearers have been established. The SS initiates P26 to make the UE move to state 6-18 as specified in TS 34.108 clause 7.4. The UE is now in the CELL_DCH state and has radio bearers mapped on E-DCH and HS-DSCH established with active E-DCH transmission and HS-DSCH reception.
The SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.43. After expiry of timer T313, the UE shall detect a radio link failure in Cell 1.

The SS waits for 10s (see Note 1) and then configures its downlink transmission power settings according to column "T0" in table 8.3.1.43. The UE shall then enter CELL_FACH state and transmit a CELL UPDATE message on the uplink CCCH in Cell 1.
The SS transmits a CELL UPDATE CONFIRM message, which requests the UE to transit to CELL_DCH state and provides the physical channel configuration to resume the interrupted radio bearer mapped on E-DCH / HS-DSCH.
The UE sets up the physical channels associated to E-DCH / HS-DSCH, enters CELL_DCH state and sends a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS calls for generic procedure C.3 to check that the UE is in CELL_DCH state.

NOTE 1: The 10s delay guarantees the expiry of timer T313 (default value = 3s) and the non-expiry of timer T315 (default value = 180s).

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P26	See below for the specific message content used in RADIO BEARER SETUP message.
1				The SS configures Cell 1 according to the "T1" power settings in table 8.3.1.43. The SS starts to listen to the uplink CCCH of Cell 1.
2				The UE detects the radio link failure and stops transmission of E-DCH.
3	→		CELL UPDATE	10s after step 1, the SS configures Cell 1 according to the "T0" power settings in table 8.3.1.43. The UE shall camp on Cell 1 and transmit a Cell Update message with the IE "Cell update cause" set to "radio link failure".
4	←		CELL UPDATE CONFIRM	The SS orders the UE to re-establish the E-DCH / HS-DSCH configuration.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
6	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 0) (FDD and 1.28Mcps TDD)

Use the same message as specified for "Packet to CELL_DCH / E-DCH / HS-DSCH using one multiplexing option (1/1) and SRBs mapped on E-DCH/HS-DSCH" in 34.108, with the exception of the following IEs:

Information Element	Value/remark
RB information to be affected	
- RB identity	1 (UM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	1
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB identity	2 (AM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	2
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1

- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB identity	3 (AM DCCH for NAS High Priority)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	3
- Uplink transport channel type	RACH
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB identity	4 (AM DCCH for NAS Low Priority)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	4
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	4

- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4

RADIO BEARER SETUP (Step 0) (3.84Mcps TDD and 7.68Mcps TDD)

Use the same message as specified for "Packet to CELL_DCH / E-DCH / HS-DSCH using one multiplexing option (1/1) and SRBs mapped on E-DCH/HS-DSCH" in 34.108, with the exception of the following IEs:

Information Element	Value/remark
RB information to be affected	
- RB identity	1 (UM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	1
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.3.4.1.2 for 3.84Mcps and 6.11.6.4.1.2 and 7.68Mcps (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB identity	2 (AM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	2
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.3.4.1.2 for 3.84Mcps and 6.11.6.4.1.2 and 7.68Mcps (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	2

- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB identity	3 (AM DCCH for NAS High Priority)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	3
- Uplink transport channel type	RACH
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.3.4.1.2 for 3.84Mcps and 6.11.6.4.1.2 and 7.68Mcps (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB identity	4 (AM DCCH for NAS Low Priority)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	4
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit List

- RLC size index	According to clause 6.10.3.4.1.2 for 3.84Mcps and 6.11.6.4.1.2 and 7.68Mcps (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in Cell 1.
- SRNC Identity	Check to see if set to value assigned in Cell 1.
Cell Update Cause	Check to see if set to “Radio link failure”

CELL UPDATE CONFIRM (Step 4) (FDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
New Primary E-RNTI	'1010 1010 1010 1010'
New Secondary E-RNTI	Not Present
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.
Downlink HS-PDSCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14 .
Downlink information common for all radio links	
- Downlink F-DPCH info common for all RL	
- Timing Indication	Initialise
- Downlink F-DPCH power control information	
- DPC mode	0 (single)
- TPC command error rate target	0.04
- CHOICE mode	FDD
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
- MAC-hs reset indicator	TRUE
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A14.

CELL UPDATE CONFIRM (Step 4) (1.28 Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
New E-RNTI	'1010 1010 1010 1010'
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
Downlink HS-PDSCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13 .
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indicator	Initialize
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- CHOICE mode	TDD
- TPC Step Size	1
- MAC-d HFN initial value	Not Present
- CHOICE mode	TDD
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- TSTD indicator	FALSE
- Default DPCH Offset Value	Arbitrary set to value 0..7
- MAC-hs reset indicator	TRUE
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.

CELL UPDATE CONFIRM (Step 4) (3.84Mcps TDD and 7.68Mcps TDD)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
New E-RNTI	'1010 1010 1010 1010'
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.
Downlink HS-PDSCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13 .
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indicator	Initialize
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- CHOICE mode	TDD
- TPC Step Size	1
- MAC-d HFN initial value	Not Present
- CHOICE mode	TDD
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps or 7.68Mcps TDD
- CHOICE sync case	Sync case 2
- Timeslot	0

Information Element	Value/remark
- Default DPCH Offset Value	Arbitrary set to value 0..7
- MAC-hs reset indicator	TRUE
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A13.

8.3.1.43.5 Test requirement

After step 2, the UE shall transmit a CELL UPDATE message.

After step 4, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and start transmission on E-DCH.

8.3.1.44 Cell Update: Transition from CELL_PCH to CELL_DCH: Success (frequency modification, start of discontinuous uplink transmission)

8.3.1.44.1 Definition

All UEs which support FDD and UL DTX.

8.3.1.44.2 Conformance requirement

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

…

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

…

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

…

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1>act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

2> if the IE "Frequency info" is included in the message:

3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

4> act on the IE "Frequency info" as specified in subclause 8.6.6.1 in TS 25.331.

…

If the IE "New H-RNTI" is included, the UE shall:

1> if the IE "Downlink HS-PDSCH Information" is also included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 of TS 25.331 applied on the received message:

2> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

If the IE "New Primary E-RNTI" and/or the IE “New Secondary E-RNTI” is included, the UE shall:

1> store the new value(s) in the variable E_RNTI;

When the variable E_DCH_TRANSMISSION is set to TRUE the UE shall:

1> use the value of the Primary E-RNTI and/or Secondary E-RNTI stored in the variable E_RNTI as identities in the E-AGCH reception procedure in the physical layer.

…

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

1> if the IE "Frequency info" is included:

2> if the frequency is different from the currently used frequency:

3> store and use the frequency indicated by the IE "Frequency Info"; and

3> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only).

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33 of TS 25.331.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34 of TS 25.331.

1> if the IE "HS-DSCH Timeslot Configuration" or "HS-PDSCH Midamble Configuration" is included:

2> store the received configuration;

2> determine the value for the HS_DSCH_RECEPTION variable and take actions as described in subclause 8.5.25.

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

…

If the IE "E-DCH Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> if the IE "E-DPCCH Info" is included:

2> store the newly received E-DPCCH configuration.

1> if the IE "E-DPDCH Info" is included:

2> store the newly received E-DPDCH configuration.

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

…

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable E_DCH_TRANSMISSION is set to TRUE, the UE shall:

1> perform E_AGCH reception procedures according to the stored E_AGCH configuration as stated in:

2> subclause 8.6.3.14 of TS 25.331 for the IE "New Primary E-RNTI" and the IE "New Secondary E-RNTI".

1> perform E-HICH reception procedures for all radio links in the active set for which an E-HICH configuration has been provided;

1> perform E-RGCH reception procedures for all radio links in the active set for which an E-RGCH configuration has been provided;

1> perform E-DPCCH transmission procedures according to the stored E-DPCCH configuration as stated in:

2> subclause 8.6.6.37 of TS 25.331 for the IE "E-DPCCH Info";

1> perform E-DPDCH transmission procedures according to the stored E-DPDCH configuration as stated in:

2> subclause 8.6.5.16 of TS 25.331 for the IE "E-DCH Transmission Time Interval";

2> subclause 8.6.5.17 of TS 25.331 for the IE "HARQ info for E-DCH";

2> subclause 8.6.6.37 of TS 25.331 for the IE "DPDCH Info".

1> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

2> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18 of TS 25.331).

1> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

2> be performed in accordance with the received scheduling grant on E-AGCH/E-RGCH (see [15]); and

2> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37 of TS 25.331).

…

…

If the IE "DTX-DRX timing information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> if the CHOICE "timing" is set to "New timing":

2> store the contents of the IE in the variable DTX_DRX_PARAMS.

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

…

If the IE "DTX–DRX information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the contents of the IE in the variable DTX_DRX_PARAMS;

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34;

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple of the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple or a divisor of the value of the IE "CQI Feedback cycle, k"; or

1> if the value of the IE "UE DPCCH burst 1" is greater than the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DPCCH burst 2" is greater than the value of the IE "UE DTX cycle 2"; or

1> if the IE "UE DTX long preamble length" is set to 4 or 15 slots and the value of the IE "Inactivity Threshold for UE DTX cycle 2" is less than 4 TTIs (for 10ms E-DCH TTI) or 8 TTIs (for 2ms E-DCH TTI); or

1> if the IE "UE DRX cycle" is not an integer multiple or a divisor of the value of the IE "UE DTX cycle 1"; or

1> if the IE "DRX Information" is included in this message while the IE "DTX information" is not included in this message; or

1> if the value of the IE "UE DTX cycle 1" is not an integer multiple or a divisor of the value of the IE "MAC DTX cycle":

2> the UE behaviour is unspecified.

Reference

3GPP TS 25.331 clauses 8.2.2.3, 8.2.2.4, 8.3.1, 8.6.3.1,8.6.3.1b,8.6.3.14, 8.6.5.6,8.6.5.16, 8.6.5.17, 8.6.6.1, 8.6.6.32, 8.6.6.33, 8.6.6.34, 8.6.6.37, 8.6.6.38, 8.6.6.39.

8.3.1.44.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL UPDATE CONFIRM message with a physical channel configuration causing it to start E-DCH transmission, HS-DSCH reception and configure UL DTX on a different cell and frequency.

To confirm that the UE enters CELL_PCH state on another frequency and stops E-DCH transmission and HS-DSCH reception when it receives a RADIO BEARER RECONFIGURATION message.

8.3.1.44.4 Method of test

Initial Condition

System Simulator: 2 cells - cell 1 is active and cell 6 is inactive.

UE: PS-DCCH +DTCH_HS-DSCH +DTCH_E-DCH (state 6-18), with UL DTX configured, under condition A20 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports discontinuous uplink transmission.

Test Procedure

Table 8.3.1.44

Parameter	Unit	Cell 1			Cell 6		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Frequency (f1)			High Range Frequency (f2)		
CPICH Ec	dBm/3.84MHz	-60	-72	-60	Off	-55	-72

Table 8.3.1.44 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The SS has configured its downlink transmission power setting according to columns "T0" in table 8.3.1.44. UE is in state 6-18 under condition A20 as specified in TS34.108 clause 7.4 in cell 1and has a radio bearer established mapped on E-DCH and HS-DSCH established with active E-DCH (DTX) transmission and HS-DSCH reception.

The SS switches its downlink transmission power settings to columns "T1". The SS transmits a RADIO BEARER RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to CELL_PCH in cell 6. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC, selects cell 6 and enters CELL_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE then enters the CELL_FACH state to transmit a CELL UPDATE message to the SS on the uplink CCCH with the IE "Cell update cause" set to value "Paging response" in response to the paging.

The SS switches its downlink transmission power settings to columns "T2". The SS transmits CELL UPDATE CONFIRM message, which invokes UE to re-map the SRB's and the PS RAB on E-DCH/HS-DSCH for cell 1. Then the UE establishes HS-DSCH and E-DCH and configures UL DTX in cell 1, and resumes E-DCH transmission and transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH in cell 1.

The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 320ms for 2ms TTI and 400ms for 10ms TTI.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_DCH state in cell 1, with UL DTX configured, and the SS changes its downlink transmission power setting according to columns “T1” in table 8.3.1.44.
2	←		RADIO BEARER RECONFIGURATION	
3	→		RADIO BEARER RECONFIGURATION COMPLETE	After transmitting this message, the UE enters the CELL_PCH state in cell 6
4	SS			SS sends the L2 ack on the RADIO BEARER RECONFIGURATION COMPLETE message and then waits 5 seconds to allow the UE to read system information before the next step. Note: The SS should continue to keep the dedicated channel configuration during the time when the L2 ack is sent to the UE.
5	→		PAGING TYPE 1	
6	→		CELL UPDATE	The UE enters the CELL_FACH state.
7	SS			The SS switches its downlink transmission power settings to columns “T2” in table 8.3.1.44.
8	←		CELL UPDATE CONFIRM	
9	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE changes to cell 1, enters the CELL_DCH state and starts E-DCH transmission, with UL DTX, and HS-DSCH reception.
10	SS			The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 320ms if 2ms TTI or 400ms if 10ms TTI is used (i.e. duration of 10 consecutive DTX cycle 2).

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 2)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
RB information to reconfigure list	
- RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1

Information Element	Value/remark
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15

Information Element	Value/remark
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200

Information Element	Value/remark
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted UL TrCH information	
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	1
- Uplink transport channel type	E-DCH
- E-DCH MAC-d flow identity	2
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	1
Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Maximum allowed UL TX power	Not Present

Paging Type 1 (Step 5)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 6)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
New Primary E-RNTI	'0101 0101 0101 0101'
New Secondary E-RNTI	Not Present
RRC State indicator	CELL_DCH
RB information to reconfigure list	
- RB RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	1
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2

- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	2
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	3
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128

- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	4
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	256
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present

- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	7
- E-DCH MAC-d flow identity	2
- DDI	5
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	336 bits
- Include in scheduling info	TRUE
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	0
- Logical channel identity	7
- RB stop/continue	Not Present
Added or Reconfigured UL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
Frequency info	Set to the frequency of cell 1
DTX-DRX timing information	
CHOICE *timing*	
- New timing	
- Enabling Delay	16 if 10ms TTI and 0 if 2ms TTI is used.
- UE DTX DRX Offset	0 if 10ms TTI and 1 if 2ms TTI is used.
DTX-DRX Information	
- CHOICE E-DCH TTI length	
- 10 ms if 10ms TTI and 2 ms for 2ms TTI is used.	
- UE DTX cycle 1	10 if 10ms TTI and 8 for 2ms TTI is used.
- UE DTX cycle 2	20 if 10ms TTI and 16 for 2ms TTI is used.
- MAC DTX cycle	10 if 10ms TTI and 8 for 2ms TTI is used.
- Inactivity Threshold for UE DTX cycle 2	8 if 10ms TTI and 32 for 2ms TTI is used.
- UE DTX long preamble length	4
- MAC Inactivity Threshold	8 if 10ms TTI and 1 for 2ms TTI is used.
- CQI DTX Timer	32
- UE DPCCH burst_1	1
- UE DPCCH burst_2	1
DRX Information	
- UE DRX cycle	10 if 10ms TTI and 32 for 2ms TTI is used.
- Inactivity Threshold for UE DRX cycle	32
- Inactivity Threshold for UE Grant Monitoring	8
- UE DRX Grant Monitoring	TRUE
Uplink DPCCH slot format information	1
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
Downlink HS-PDSCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
Downlink information common for all radio links	
- Downlink information for all radio link	
- CHOICE *DPCH info*	F-DPCH
- Downlink F-DPCH info for all RL	
- Timing Indication	Initialize
Downlink information for each radio link list	
- Downlink information for each radio link	
- Choice mode	FDD
- Primary CPICH info	

- Primary scrambling code	Set to the primary scrambling code of cell 1
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Serving HS-DSCH radio link indicator	TRUE
- Serving E-DCH radio link indicator	TRUE
- CHOICE DPCH info	F-DPCH
- Downlink F-DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- F-DPCH frame offset	Set to value Default F-DPCH Offset Value (as currently stored in SS) mod 38400
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present
- Secondary CPICH info	Not Present
- Secondary scrambling code	Not Present
- Code number	12
- TPC combination index	0
- Closed loop timing adjustment mode	Not Present
- E-AGCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
- E-HICH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
- E-RGCH Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.

8.3.1.44.5 Test requirement

At step 3, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

At step 6, the UE shall transmit a CELL UPDATE message on the uplink CCCH.

At step 9, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC in cell 1.

At step 10 the time between 11 consecutive CQI indications shall be 320ms for 2ms TTI and 400ms for 10ms TTI.

8.3.1.45 Cell Update: Radio Link Failure, with active discontinuous uplink transmission

8.3.1.45.1 Definition

All UEs which support FDD and UL DTX.

8.3.1.45.2 Conformance requirement

1> Radio link failure:

…

3> if the UE is in CELL_DCH state and the criteria for radio link failure are met as specified in subclause 8.5.6 of TS 25.331; or

…

4> perform cell update using the cause "radio link failure".

When initiating the URA update or cell update procedure, the UE shall:

…

1> if any IEs related to HS-DSCH are stored in the UE:

2> clear any stored IE "Downlink HS-PDSCH information";

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

1> if any IEs related to E-DCH are stored in the UE:

2> clear any stored IE "E-DCH info";

2> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

1> if any of the IEs "DTX-DRX timing information" or "DTX-DRX information" are stored in the UE:

2> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

1> if the IE "HS-SCCH less information" is stored in the UE:

2> determine the value for the HS_SCCH_LESS_STATUS variable and take the corresponding actions as described in subclause 8.5.35.

…

In CELL_DCH State, after receiving N313 consecutive "out of sync" indications from layer 1 for the established DPCCH or F-DPCH physical channel in FDD, and the physical channels associated with mapped DCCHs in TDD, the UE shall:

1> start timer T313;

1> upon receiving N315 successive "in sync" indications from layer 1 and upon change of UE state:

2> stop and reset timer T313.

1> if T313 expires:

2> consider it as a "Radio link failure".

Periods in time where neither "in sync" nor "out of sync" is reported by layer 1 do not affect the evaluation of the number of consecutive (resp. successive) "in sync" or "out of sync" indications.

When a radio link failure occurs, the UE shall:

1> clear the dedicated physical channel configuration;

1> perform actions as specified for the ongoing procedure;

1> if no procedure is ongoing or no actions are specified for the ongoing procedure:

2> perform a cell update procedure according to subclause 8.3.1 using the cause "radio link failure".

Reference

3GPP TS 25.331 clauses 8.3.1.2, 8.5.6.

8.3.1.45.3 Test purpose

1. To confirm that the UE stops the E-DCH transmission with DTX and performs a Cell Update procedure after radio link failure.
2. To confirm that the UE keeps the radio bearer mapping option and transport channel configuration for E-DCH after the radio link failure. To confirm that the UE resumes the E-DCH transmission and configures UL DTX after the Cell Update procedure.

8.3.1.45.4 Method of test

Initial Condition

System Simulator: 1 cell – Cell 1

UE: PS-DCCH_DCH (state 6-7) with SRBs mapped to E-DCH/HS-DSCH as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports discontinuous uplink transmission.

Test Procedure

Table 8.3.1.45

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF

Table 8.3.1.45 illustrates the downlink power to be applied to Cell 1 at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is in CELL_DCH state and only signalling radio bearers have been established. The SS initiates P26 to make the UE move to state 6-18 as specified in TS 34.108 clause 7.4. The UE is now in the CELL_DCH state and has radio bearers mapped on E-DCH and HS-DSCH established with active E-DCH (DTX) transmission and HS-DSCH reception.

The SS configures its downlink transmission power settings according to column “T1” in table 8.3.1.45. After expiry of timer T313, the UE shall detect a radio link failure in Cell 1.

The SS waits for 15s (see Note 1) and then configures its downlink transmission power settings according to column “T0” in table 8.3.1.45. The UE shall then enter CELL_FACH state and transmit a CELL UPDATE message on the uplink CCCH in Cell 1.

The SS transmits a CELL UPDATE CONFIRM message, which requests the UE to transit to CELL_DCH state and provides the physical channel configuration to resume the interrupted radio bearer mapped on E-DCH / HS-DSCH and configures UL DTX.

The UE sets up the physical channels associated to E-DCH / HS-DSCH, enters CELL_DCH state and sends a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 400ms.

The SS calls for generic procedure C.3 to check that the UE is in CELL_DCH state.

NOTE 1: The 15s delay guarantees the expiry of timer T313 (default value = 3s) and the non-expiry of timer T315 (default value = 180s).

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P26	See below for the specific message content used in RADIO BEARER SETUP message.
1				The SS configures Cell 1 according to the “T1" power settings in table 8.3.1.45. The SS starts to listen to the uplink CCCH of Cell 1.
2				The UE detects the radio link failure and stops transmission of E-DCH.
3	→		CELL UPDATE	15s after step 1, the SS configures Cell 1 according to the “T0” power settings in table 8.3.1.45. The UE shall camp on Cell 1 and transmit a Cell Update message with the IE "Cell update cause" set to "radio link failure".
4	←		CELL UPDATE CONFIRM	The SS orders the UE to re-establish the E-DCH / HS-DSCH configuration with DTX.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
6	SS			The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 400ms (i.e. duration of 10 consecutive DTX cycle 2).
7	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 0)

Use the same message as specified for "Packet to CELL_DCH / E-DCH / HS-DSCH using one multiplexing option (1/1) and SRBs mapped on E-DCH/HS-DSCH" in 34.108, with the exception of the following IEs:

Information Element	Value/remark
RB information to be affected	
- RB identity	1 (UM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	1
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB identity	2 (AM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	2
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1

- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB identity	3 (AM DCCH for NAS High Priority)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	3
- Uplink transport channel type	RACH
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB identity	4 (AM DCCH for NAS Low Priority)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	4
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	4

- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
DTX-DRX timing information	
CHOICE *timing*	
- New timing	
- Enabling Delay	16
- UE DTX DRX Offset	0
DTX-DRX Information	
- CHOICE E-DCH TTI length	10 ms
- UE DTX cycle 1	10
- UE DTX cycle 2	20
- MAC DTX cycle	10
- Inactivity Threshold for UE DTX cycle 2	8
- UE DTX long preamble length	4
- MAC Inactivity Threshold	8
- CQI DTX Timer	32
- UE DPCCH burst_1	1
- UE DPCCH burst_2	1
DRX Information	
- UE DRX cycle	10
- Inactivity Threshold for UE DRX cycle	32
- Inactivity Threshold for UE Grant Monitoring	8
- UE DRX Grant Monitoring	TRUE
Uplink DPCCH slot format information	1
Added or Reconfigured UL TrCH information	
- Uplink transport channel type	E-DCH
- CHOICE UL parameters	E-DCH
- E-DCH Transmission Time Interval	10ms

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in Cell 1.
- SRNC Identity	Check to see if set to value assigned in Cell 1.
Cell Update Cause	Check to see if set to “Radio link failure”

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
New Primary E-RNTI	'1010 1010 1010 1010'
New Secondary E-RNTI	Not Present
RRC State indicator	CELL_DCH
DTX-DRX timing information	
CHOICE timing	
- New timing	
- Enabling Delay	16
- UE DTX DRX Offset	0
DTX-DRX Information	
- CHOICE E-DCH TTI length	
- 10 ms	
- UE DTX cycle 1	10
- UE DTX cycle 2	20
- MAC DTX cycle	10
- Inactivity Threshold for UE DTX cycle 2	8
- UE DTX long preamble length	4
- MAC Inactivity Threshold	8
- CQI DTX Timer	32
- UE DPCCH burst_1	1
- UE DPCCH burst_2	1
DRX Information	
- UE DRX cycle	10
- Inactivity Threshold for UE DRX cycle	32
- Inactivity Threshold for UE Grant Monitoring	8
- UE DRX Grant Monitoring	TRUE
Uplink DPCCH slot format information	1
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
Downlink HS-PDSCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
Downlink information common for all radio links	
- Downlink F-DPCH info common for all RL	
- Timing Indication	Initialise
- Downlink F-DPCH power control information	
- DPC mode	0 (single)
- TPC command error rate target	0.04
- CHOICE mode	FDD
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
- MAC-hs reset indicator	TRUE
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.

8.3.1.45.5 Test requirement

At step 3, the UE shall transmit a CELL UPDATE message.

At step 5, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and start transmission on E-DCH. At step 6 the time between 11 consecutive CQI indications shall be 400ms.

8.3.1.46 Cell Update: Transition from URA_PCH to CELL_DCH: Success (start of discontinuous uplink transmission)

8.3.1.46.1 Definition

All UEs which support FDD and UL DTX.

8.3.1.46.2 Conformance requirement

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

…

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

…

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

…

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1>act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

2> if the IE "Frequency info" is included in the message:

3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

4> act on the IE "Frequency info" as specified in subclause 8.6.6.1 in TS 25.331.

…

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

1> if the IE "Frequency info" is included:

2> if the frequency is different from the currently used frequency:

3> store and use the frequency indicated by the IE "Frequency Info"; and

3> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only).

…

If the IE "New H-RNTI" is included, the UE shall:

3> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

If the IE "New Primary E-RNTI" and/or the IE “New Secondary E-RNTI” is included, the UE shall:

1> store the new value(s) in the variable E_RNTI;

When the variable E_DCH_TRANSMISSION is set to TRUE the UE shall:

1> use the value of the Primary E-RNTI and/or Secondary E-RNTI stored in the variable E_RNTI as identities in the E-AGCH reception procedure in the physical layer.

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33 of TS 25.331.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34 of TS 25.331.

1> if the IE "HS-DSCH Timeslot Configuration" or "HS-PDSCH Midamble Configuration" is included:

2> store the received configuration;

2> determine the value for the HS_DSCH_RECEPTION variable and take actions as described in subclause 8.5.25.

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

…

If the IE "Downlink information for each radio link" is included in a received message, the UE shall:

1> if the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message:

2> if the IE "Serving HS-DSCH radio link indicator" is set to 'TRUE':

3> consider this radio link as the serving HS-DSCH radio link.

2> if the IE "Serving E-DCH radio link indicator" is set to 'TRUE':

3> consider this radio link as the serving E-DCH radio link.

2> if the IE "E-AGCH Info" is included:

3> store the newly received E-AGCH configuration.

2> if the IE "E-HICH information" is included:

3> store this E-HICH configuration for the concerning radio link.

2> if the IE "E-RGCH information" is included:

3> store this E-RGCH configuration for the concerning radio link.

2> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

2> act on the other IEs contained in the IE "Downlink information for each radio link" as specified in subclause 8.6 applied on this radio link.

…

If the IE "E-DCH Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> if the IE "E-DPCCH Info" is included:

2> store the newly received E-DPCCH configuration.

1> if the IE "E-DPDCH Info" is included:

2> store the newly received E-DPDCH configuration.

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

…

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable E_DCH_TRANSMISSION is set to TRUE, the UE shall:

1> perform E_AGCH reception procedures according to the stored E_AGCH configuration as stated in:

2> subclause 8.6.3.14 of TS 25.331 for the IE "New Primary E-RNTI" and the IE "New Secondary E-RNTI".

1> perform E-HICH reception procedures for all radio links in the active set for which an E-HICH configuration has been provided;

1> perform E-RGCH reception procedures for all radio links in the active set for which an E-RGCH configuration has been provided;

1> perform E-DPCCH transmission procedures according to the stored E-DPCCH configuration as stated in:

2> subclause 8.6.6.37 of TS 25.331 for the IE "E-DPCCH Info";

1> perform E-DPDCH transmission procedures according to the stored E-DPDCH configuration as stated in:

2> subclause 8.6.5.16 of TS 25.331 for the IE "E-DCH Transmission Time Interval";

2> subclause 8.6.5.17 of TS 25.331 for the IE "HARQ info for E-DCH";

2> subclause 8.6.6.37 of TS 25.331 for the IE "DPDCH Info".

1> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:

2> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18 of TS 25.331).

1> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:

2> be performed in accordance with the received scheduling grant on E-AGCH/E-RGCH (see [15]); and

4> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37 of TS 25.331).

…

If the IE "DTX-DRX timing information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> if the CHOICE "timing" is set to "New timing":

2> store the contents of the IE in the variable DTX_DRX_PARAMS.

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

…

If the IE "DTX–DRX information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the contents of the IE in the variable DTX_DRX_PARAMS;

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34;

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple of the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple or a divisor of the value of the IE "CQI Feedback cycle, k"; or

1> if the value of the IE "UE DPCCH burst 1" is greater than the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DPCCH burst 2" is greater than the value of the IE "UE DTX cycle 2"; or

1> if the IE "UE DTX long preamble length" is set to 4 or 15 slots and the value of the IE "Inactivity Threshold for UE DTX cycle 2" is less than 4 TTIs (for 10ms E-DCH TTI) or 8 TTIs (for 2ms E-DCH TTI); or

1> if the IE "UE DRX cycle" is not an integer multiple or a divisor of the value of the IE "UE DTX cycle 1"; or

1> if the IE "DRX Information" is included in this message while the IE "DTX information" is not included in this message; or

1> if the value of the IE "UE DTX cycle 1" is not an integer multiple or a divisor of the value of the IE "MAC DTX cycle":

2> the UE behaviour is unspecified.

Reference

3GPP TS 25.331 clauses 8.2.2.3, 8.2.2.4, 8.3.1, 8.5.28, 8.6.3.14, 8.6.5.16, 8.6.5.17, 8.6.5.18, 8.6.6.37, 8.6.6.38, 8.6.6.39

8.3.1.46.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL UPDATE CONFIRM message with a physical channel configuration causing it to start E-DCH transmission, HS_DSCH reception and configures UL DTX.

To confirm that the UE executes a cell update procedure when the UE transmits uplink data if the UE is in URA_PCH state.

8.3.1.46.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents)

UE: PS-DCCH +DTCH_HS-DSCH +DTCH_E-DCH (state 6-18) under condition A20 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports discontinuous uplink transmission.

Test Procedure

The UE is in the CELL_DCH state and has a radio bearer mapped on E-DCH and HS-DSCH established with active E-DCH transmission and HS-DSCH reception. E-DCH transmission Time Interval is set to 10ms.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to URA_PCH. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters URA_PCH state.

The SS transmits a PAGING TYPE 1 message. The UE then enters the CELL_FACH state to transmit a CELL UPDATE message to the SS on the uplink CCCH with the IE "Cell update cause" set to value "Paging response" in response to the paging.

The SS transmits CELL UPDATE CONFIRM message, which includes HS-PDSCH and E-DPDCH physical channel parameters on the downlink DCCH with UL DTX. Then the UE resumes E-DCH transmission and HS-DSCH reception, and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 400ms. Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P26	See below for the specific message content used in RADIO BEARER SETUP message.
1	←		PHYSICAL CHANNEL RECONFIGURATION	
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the URA_PCH state
3	←		PAGING TYPE 1	
4	→		CELL UPDATE	The UE enters the CELL_FACH state.
5	←		CELL UPDATE CONFIRM	
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters the CELL_DCH state and starts E-DCH transmission with UL DTX and HS-DSCH reception.
7	SS			The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 400ms (i.e. duration of 10 consecutive DTX cycle 2).

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
-UE Timers and constants in connected mode - T312	 2

RADIO BEARER SETUP (Step 0) (FDD)

Use the same message as specified for "Packet to CELL_DCH / E-DCH / HS-DSCH with DTX/DRX using one multiplexing option (1/1) and SRBs mapped on E-DCH/HS-DSCH " in 34.108, with the exception of the following IEs:

Information Element	Value/remark
RB information to be affected	
- RB identity	1 (UM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1

- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	1
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB identity	2 (AM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	2
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB identity	3 (AM DCCH for NAS High Priority)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH

- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	3
- Uplink transport channel type	RACH
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB identity	4 (AM DCCH for NAS Low Priority)
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- DL HS-DSCH MAC-d flow identity	1
- Logical channel identity	4
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.2 (standalone 3.4 kbps signalling radio bearer)
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3
URA Identity	0000 0000 0000 0001B

Paging Type 1 (Step 3)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to “Paging response”

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
New Primary E-RNTI	'1010 1010 1010 1010'
New Secondary E-RNTI	Not Present
RRC State indicator	CELL_DCH
DTX-DRX timing information	
CHOICE *timing*	
- New timing	
- Enabling Delay	16
- UE DTX DRX Offset	0
DTX-DRX Information	
- CHOICE E-DCH TTI length	10ms
- UE DTX cycle 1	10
- UE DTX cycle 2	20
- MAC DTX cycle	10
- Inactivity Threshold for UE DTX cycle 2	8
- UE DTX long preamble length	4
- MAC Inactivity Threshold	8
- CQI DTX Timer	32
- UE DPCCH burst_1	1
- UE DPCCH burst_2	1
DRX Information	
- UE DRX cycle	10
- Inactivity Threshold for UE DRX cycle	32
- Inactivity Threshold for UE Grant Monitoring	8

- UE DRX Grant Monitoring	TRUE
Uplink DPCCH slot format information	1
Uplink DPCH info	Not Present
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
Downlink HS-PDSCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20 except for the following IEs.
- Timing indicator	Initialize
- Default DPCH Offset Value	Not Present
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A20.

8.3.1.46.5 Test requirement

At step 2, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

At step 4, the UE shall transmit a CELL UPDATE message on uplink CCCH.

At step 6, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

At step 7 the time between 11 consecutive CQI indications shall be 400ms.

8.3.1.47 Cell Update: cell reselection in CELL_FACH (Reselection between cell not supporting HS-PDSCH in CELL_FACH and cell supporting HS-PDSCH is CELL_FACH)

8.3.1.47.1 Definition and applicability

All UEs which support FDD and HS-PDSCH in CELL_FACH.

8.3.1.47.2 Conformance requirement

In the CELL_FACH state the UE shall perform the following actions:

1) NOTE: DCCH and, if configured, DTCH are available in this state.

1> if the UE is "in service area":

2> maintain up-to-date system information as broadcast by the serving cell as specified in subclause 8.1.1;

2> perform cell reselection process as specified in [4];

…

The UE shall set the IEs in the CELL UPDATE message as follows:

..

1> if the UE supports HS-DSCH reception in CELL_FACH state:

5> 2> include the IE "HS-PDSCH in CELL_FACH" and set it to TRUE.

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

..

If the UE after state transition remains in CELL_FACH state, it shall

1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select PRACH according to subclause 8.5.17;

1> for TDD; or

1> for FDD, if the UE does not support HS-DSCH reception; or

1> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:

2> select Secondary CCPCH according to subclause 8.5.19;

2> take the actions related to the HS_DSCH_RECEPTION_GENERAL variable as described in subclause 8.5.37a.

1> else:

2> if the RBs have the multiplexing option with transport channel type "HS-DSCH" for the DL and transport channel type "RACH" in the UL; and

2> if variable H_RNTI and variable C_RNTI are set:

3> start to receive HS-DSCH according to the procedure in subclause 8.5.36.

2> else:

3> clear variable C_RNTI and delete any stored C-RNTI value;

3> clear variable H_RNTI and delete any stored H-RNTI value;

3> clear any stored IEs "HARQ info";

3> set the variable INVALID_CONFIGURATION to TRUE.

…

The variable HS_DSCH_RECEPTION_CELL_FACH_STATE shall be set to TRUE only when all the following conditions are met:

1> the UE is in CELL_FACH;

1> the variable H_RNTI is set;

1> the variable C_RNTI is set;

1> System Information Block type 5 or System Information Block type 5bis includes IE "HS-DSCH common system information".

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION_CELL_FACH_STATE is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION_CELL_FACH_STATE to FALSE;

1> if the UE is in CELL_FACH and variable HS_DSCH_RECEPTION_OF_CCCH_ENABLED is set to FALSE:

2> set the variable HS_DSCH_RECEPTION_GENERAL to FALSE;

2> stop any HS_SCCH reception procedures;

2> stop any HS-DSCH reception procedures;

2> clear the variable H_RNTI and remove any stored H-RNTI;

2> reset the MAC-ehs entity [15];

2> release all HARQ resources;

2> clear any stored IEs "HARQ info";

Whenever the variable HS_DSCH_RECEPTION_CELL_FACH_STATE is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION_GENERAL to TRUE;

1> use the IE "HS-DSCH common system information" in System Information Block type 5 or System Information Block type 5bis;

1> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving cell applying the scrambling code as received in the IE "DL Scrambling code" as received in IE "HS-DSCH common system information";

1> perform HS-DSCH reception procedures:

2> if the UE has a stored IE "HARQ info":

3> act on subclause 8.6.5.6b for the stored IE "HARQ info".

2> else:

3> act on subclause 8.6.5.20 for the IE "HARQ System info" as received in IE "HS-DSCH common system information".

2> and use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

1> and for BCCH reception perform HS-DSCH reception procedures by listening to the first indexed HS-SCCH code listed in the IE "HS-SCCH channelisation code" with "BCCH specific H-RNTI" as received in IE "HS-DSCH common system information".

Whenever the variable HS_DSCH_RECEPTION_CELL_FACH_STATE is set to FALSE, the UE shall:

1> if the UE is in CELL_FACH and variable HS_DSCH_RECEPTION_OF_CCCH_ENABLED is set to FALSE:

2> not perform HS_SCCH reception procedures;

2> not perform HS-DSCH reception procedures.

…

When UE does not support HS-DSCH reception or when the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis, the UE shall:

1> set HS_DSCH_RECEPTION_OF_CCCH_ENABLED to FALSE;

1> set the variable HS_DSCH_RECEPTION_GENERAL to FALSE.

When HS_DSCH_RECEPTION_OF_CCCH_ENABLED is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION_GENERAL to TRUE;

1> use the IE "HS-DSCH common system information" in System Information Block type 5 or System Information Block type 5bis;

1> configure the HARQ according to IE "HARQ System info" as defined in subclause 8.6.5.20;

1> configure the common MAC-ehs reordering queues according to IE "Common MAC-ehs reordering queues" as defined in subclauses 8.6.5.22; and then

1> receive the CCCH according to IE "CCCH mapping info" as defined in subclause 8.6.5.21;

1> if the UE is RRC Connected mode:

2> select a common H-RNTI as specified in 8.5.38;

2> receive the SRB1 according to IE "SRB1 mapping info" as defined in subclause 8.6.5.19.

1> else:

2> select a common H-RNTI as specified in [4].

1> and start to receive the HS-SCCH(s) with selected H-RNTI according to the IE "HS-SCCH channelisation code" on the selected cell applying the scrambling code as received in the IE "DL Scrambling code";

1> configure the MAC flow for BCCH reception as specified in [15];

1> and start to receive the first indexed HS-SCCH code listed in the IE "HS-SCCH channelisation code" with "BCCH specific H-RNTI" as received in IE "HS-DSCH common system information".

…

In FDD and 1.28 Mcps TDD, the MAC PDU header for DTCH and DCCH mapped on HS-DSCH CELL_FACH, CELL_PCH state is as shown in figure 9.2.1.1c-1.

- there is no MAC-d header included for DTCH and DCCH.
- there is no MAC-c header included for DTCH and DCCH when UE dedicated H-RNTI is used.
- the U-RNTI is only included as MAC-c header to MAC-d PDU for DCCH (SRB#1 only)when common H-RNTI is used

Reference

3GPP TS 25.331 clauses 7.2.2.2, 8.3.1.3 8.3.1.6, 8.5.36, 8.5.37

3GPP TS 25.321 clause 9.2.1.1c

8.3.1.47.3 Test purpose

1. To confirm that the UE starts reception of HS-PDSCH in CELL_FACH state, after reselecting to a cell supporting HS-PDSCH in CELL_FACH.
2. To confirm that the UE performs the cell reselection procedure while receiving HS-PDSCH in CELL_FACH state.
3. To confirm that the UE can receive data on DCCH (SRB#1) HS-DSCH using common H-RNTI in CELL_FACH state.

8.3.1.47.4 Method of test

Initial Condition

System Simulator: 2 cells: Cell 1 sends the default system information (HS-DSCH for CELL_FACH not configured), Cell 6 configures HS-DSCH for CELL_FACH in System Information Type 5.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

For cell 2, the following parameters are specific for the system information

Parameter	Value
T302	8000 ms

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH in CELL_FACH

Test Procedure

Table 8.3.1.47

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		High Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-70	-70	-60

Table 8.3.1.47 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The SS has configured its downlink transmission power according to column "T0" in table 8.3.1.47. UE is in state 6-11 in cell 1 as specified in clause 7.4 of TS 34.108 and has a radio bearer established mapped on RACH and FACH.

The SS transmits updated SYSTEM INFORMATION TYPE5/5bis message which includes HS-DSCH reception in cell FACH state. The SS switches its downlink transmission power settings to column "T1".

UE finds cell 6 as a better cell and reselects to Cell 6. The UE transmits CELL UPDATE message on uplink CCCH of cell 6 with the IE "Cell update cause" set to "cell reselection". The SS then transmits a CELL UPDATE CONFIRM which includes the IE RRC State Indicator" set to "CELL_FACH", but with unmatched UE Id in MAC-c header, to the UE on the downlink DCCH. The UE does not respond to this. After expiry of T302 the UE shall transmit another CELL UPDATE. The SS then transmits a CELL UPDATE CONFIRM which includes the IE RRC State Indicator" set to "CELL_FACH", but this time with matched UE Id in MAC-c header, to the UE on the downlink DCCH. Then UE shall respond by transmitting a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH.

The SS switches its downlink transmission power settings to column "T0". UE finds cell 1 as a better cell for service and reselects to Cell 1.

The UE transmits CELL UPDATE message on uplink CCCH of cell 1 with the IE "Cell update cause" set to "cell reselection". The SS then transmits a CELL UPDATE CONFIRM which includes the IE RRC State Indicator" set to "CELL_FACH", to the UE on the downlink DCCH. Then UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

The SS checks that the UE is in Cell FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0				The UE is in CELL_FACH state in cell 1
0a	←		SYSTEM INFORMATION BLOCK TYPE 4 SYSTEM INFORMATION BLOCK TYPE 11	SS transmits modified SIB 4 and 11, with contents given in specific message contents. Transmitted on Cell1 and Cell6
1	←		SYSTEM INFORMATION TYPE 5/5bis	Transmitted on cell 6. Includes configuration for HS-DSCH reception in CELL_FACH state
2				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.47. The UE shall find that the cell 6 is better for service and perform reselection. SS waits for the maximum duration required for the UE to camp to cell 6.
3	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” is set to TRUE.
4	←		CELL UPDATE CONFIRM	Transmitted by the SS on SRB1 using common H-RNTI but unmatched UE-ID in MAC-c header. IE "RRC State Indicator" is set to "CELL_FACH".
5	→		CELL UPDATE	After expiry of T302. Value "cell reselection" shall be indicated in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” is set to TRUE
6	←		CELL UPDATE CONFIRM	Transmitted by the SS on SRB1 using common H-RNTI but with matched UE-ID in MAC-c header. IE "RRC State Indicator" is set to "CELL_FACH".
7	→		RADIO BEARER RECONFIGURATION COMPLETE	Transmitted by the UE on RACH.
8				SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.47. The UE shall find that the cell 1 is better for service and perform reselection. SS waits for the maximum duration required for the UE to camp to cell 1.
9	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” is set to TRUE.
10	←		CELL UPDATE CONFIRM	Transmitted by the SS on FACH / S-CCPCH. IE "RRC State Indicator" is set to "CELL_FACH".
11	→		UTRAN MOBILITY INFORMATION CONFIRM	Transmitted by the UE on RACH.
12	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

SYSTEM INFORMATION TYPE 5/ SYSTEM INFORMATION TYPE 5bis (Step 2)

Use the same message as specified for “Only for cells which configure HS-DSCH reception in CELL_FACH “ in 34.108, clause 6.1.0b

System Information Block type 4 (Step 0a)

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

- Qqualmin	-16

System Information Block type 11 (Step 0a)

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present

CELL UPDATE (Steps 3, 5 and 9)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
Cell Update Cause	Check to see if set to 'Cell Re-selection'
HS-PDSCH in CELL_FACH	Check to see if set to TRUE

CELL UPDATE CONFIRM (Step 4 and 6)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the DL CCCH, with the exception of the following IEs:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'
New H-RNTI	'1110 1010 1010 1010'
RB information to be affected list	
- RB information to be affected	(UM DCCH for RRC)
- RB identity	1
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	According to clause 6.10.2.4.4.1 (combinations on PRACH in TS 34.108)
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1

- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	Explicit list
- RLC size index	According to clause 6.10.2.4.4.1
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	
- DL DSCH Transport channel identity	
- CHOICE *DL MAC header type*	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	1
- RB information to be affected	(AM DCCH for RRC)
- RB identity	2
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.4.1 (combinations on PRACH in TS 34.108)
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present

- DL DSCH Transport channel identity	Not Present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	2
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.4.1 (combinations on PRACH in TS 34.108)
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB information to be affected	(AM DCCH for NAS_DT High priority)
- RB identity	3
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.4.1 (combinations on PRACH)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	3
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.4.1 (combinations on PRACH in TS 34.108)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB information to be affected	(AM DCCH for NAS_DT High priority)
- RB identity	4
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.4.1 (Combinations on PRACH)
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH

- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	4
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.4.1 (Combinations on PRACH)
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4
- RB information to be affected	(AM DTCH)
- RB identity	25
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.4.1 (Combinations on PRACH)
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	2
- Logical channel identity	7
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.4.1 (Combinations on PRACH)
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7

RADIO BEARER RECONFIGURATION COMPLETE (Step 7)

Use the same default message as specified in TS 34.108, clause 9.

CELL UPDATE CONFIRM (Step 10)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

8.3.1.47.5 Test requirements

At step 3 the UE shall reselect to cell 6 and then it shall transmit a CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” set to TRUE.

At step 5 the UE shall not respond to the CELL UPDATE CONFIRM in step 4. The UE will instead transmit CELL UPDATE after expiry of T302.

At step 7 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM on UL using the PRACH physical resource.

At step 9 the UE shall reselect to cell 1 and then it shall transmit a CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” set to TRUE.

8.3.1.48 Cell Update: Radio Link Failure, UM RLC Re-establishment

8.3.1.48.1 Definition

All UEs which support CS over HSPA.

8.3.1.48.2 Conformance requirement

The cell update procedure may also include:

- a re-establish of AM RLC entities;
- a re-establish of UM RLC entities;
- a radio bearer release, radio bearer reconfiguration, transport channel reconfiguration or physical channel reconfiguration.

…

A UE shall initiate the cell update procedure in the following cases:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_DCH state and the criteria for radio link failure are met as specified in subclause 8.5.6; or

3> if the transmission of the UE CAPABILITY INFORMATION message fails as specified in subclause 8.1.6.6; or

3> if the UE detects PDCP Unrecoverable Error [36] in a PDCP entity::

4> perform cell update using the cause "radio link failure".

…

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission the UE RRC shall start timer T304 and set counter V304 to 1.

…

T304 timeout

Upon expiry of timer T304, the UE shall check the value of V304 and:

1> if V304 is smaller than or equal to N304:

2> prior to retransmitting the UE CAPABILITY INFORMATION message:

3> if the IE "Status" in the variable INTEGRITY_PROTECTION_INFO has the value "Started":

4> include the same IEs as in the last unsuccessful attempt of this message, except for the IE "Integrity check info", which is set as specified in subclause 8.5.10.

3> else:

4> include the same IEs as in the last unsuccessful attempt of this message.

2> send the UE CAPABILITY INFORMATION message on signalling radio bearer RB2;

2> restart timer T304;

2> increment counter V304.

1> if V304 is greater than N304:

2> initiate the Cell update procedure as specified in subclause 8.3.1, using the cause "Radio link failure".

…

When the UTRAN receives a CELL UPDATE/URA UPDATE message, the UTRAN should:

1> in case the procedure was triggered by reception of a CELL UPDATE:

…

1> if the radio bearer is connected to a CS domain radio access bearer and the radio bearer uses UM RLC:

2> the UM RLC entity should be re-established in UTRAN.

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

the UE shall:

1> stop timer T302;

…

1> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":

2> if the variable PDCP_SN_INFO is empty:

3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".

2> else:

3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";

3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".

2> re-establish the RLC entity for RB2;

2> clear all entries in the table "Processed transactions" in the variable TRANSACTIONS;

2> for the downlink and the uplink, apply the ciphering configuration as follows:

3> if the received re-configuration message included the IE "Ciphering Mode Info":

4> use the ciphering configuration in the received message when transmitting the response message.

3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:

4> if the previous SECURITY MODE COMMAND was received due to new keys being received:

5> consider the new ciphering configuration to include the received new keys;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.

4> else if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:

5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.

4> apply the new ciphering configuration immediately following RLC re-establishment.

3> else:

4> continue using the current ciphering configuration.

2> set the new uplink and downlink HFN component of the COUNT-C of RB2 to MAX(uplink HFN component of the COUNT-C of RB2, downlink HFN component of the COUNT-C of RB2);

2> increment by one the downlink and uplink values of the HFN component of the COUNT-C for RB2;

2> calculate the START value according to subclause 8.5.9;

2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in any response message transmitted below.

1> else if the radio bearer is connected to a CS domain radio access bearer and the radio bearer uses UM RLC:

2> re-establish the UM RLC entity;

2> if the value of the IE "Status" in the variable CIPHERING_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS is set to "Started":

3> set the HFN component of the respective COUNT-C values for the UM RLC entity equal to the START value included in this CELL UPDATE message for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS;

3> set the remaining bits of the HFN component of the COUNT-C values of the UM RLC entity to zero.

…

For 1.28 Mcps TDD, when the variable E_DCH_TRANSMISSION is set to TRUE (see subclause 8.5.28) and the UE has stored the IE "E-RUCCH info", a "Radio link failure" shall be triggered as below:

1> if the E-RUCCH transmission counter is added greater than N_RUCCH, another hysteresis Timer with the value of N-RUCCH times of T-RUCCH period shall be started:

2> upon the hysteresis Timer expires and still no Grant has been received for the whole time duration since the last E-RUCCH transmission:

3> consider it as a "Radio link failure", refer to [59].

For FDD in CELL_DCH state and in TDD when a radio link failure occurs, the UE shall:

1> clear the dedicated physical channel configuration;

1> perform actions as specified for the ongoing procedure;

1> if no procedure is ongoing or no actions are specified for the ongoing procedure:

2> perform a cell update procedure according to subclause 8.3.1 using the cause "radio link failure".

For FDD, in CELL_FACH state and Idle mode, in conjunction with the Enhanced Uplink in CELL_FACH state, after receiving an indication from layer 1 that physical layer transmission stopped caused by an DL out-of-synchronisation, the UE shall:

1> consider it as a "Radio link failure".

Reference

3GPP TS 25.331 clauses 8.3.1.1, 8.3.1.2, 8.3.1.5, 8.3.1.6, 8.1.6.6.

8.3.1.48.3 Test purpose

1. To confirm that UE performs UM RLC re-establishment on CS over HSPA RAB following CELL UPDATE with cause "radio link failure".

8.3.1.48.4 Method of test

Initial Condition

System Simulator: 1 cell – Cell 1

UE is in Idle mode (state 2 or state 7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports CS over HSPA.

Test Procedure

The SS setups a circuit switched session including radio bearer and UE test loop mode 1 in RLC UM using Common test procedures for mobile terminated CS switched sessions. Usage of "PDCP AMR Data" PDU has been configured by higher layers.

The SS sends valid AMR data packets.

The received data shall be looped back by the UE via its PDCP configuration using PDCP AMR Data PDU.

The SS transmits UE CAPABILITY ENQUIRY and UE responds with UE CAPABILITY INFORMATION and starts timer T304 to wait for UE CAPABILITY INFORMATION CONFIRM from SS. SS does not transmit UE CAPABILITY INFORMATION CONFIRM message which cause UE to re-transmit UE CAPABILITY INFORMATION message after T304 expiry. After N304 + 1 transmissions, the UE triggers CELL UPADTE message on the uplink CCCH.

The SS transmits a CELL UPDATE CONFIRM message, which requests the UE to transit to CELL_DCH state and provides the physical channel configuration to resume the interrupted CS radio bearer mapped on E-DCH / HS-DSCH.

The UE sets up the physical channels associated to E-DCH / HS-DSCH, enters CELL_DCH state and sends a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS sends valid AMR data packet.

The received data shall be looped back by the UE via its PDCP configuration using PDCP AMR Data PDU. SS verifies the content of the AMR data is the same as originally transmitted.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
Setup a UE terminated CS session (using UE test loop mode 1). Refer to section 7.3.1 of TS 34.123-1 for common test procedure sequence. Refer to specific message contents below for SECURITY MODE COMMAND				
1	←		PDCP Data	The SS sends a PDCP AMR Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 010 (PDCP AMR Data PDU) CS counter = first to fifth LSBs of the CFN at which the packet has been received from higher layers
2	→		PDCP Data	The UE loops back PDCP AMR Data PDU with the following content back to the SS: PDU type = 010 (PDCP AMR Data PDU) CS counter = first to fifth LSBs of the CFN at which the packet has been received from higher layers data: previously received AMR frames
				Steps 2-3 are repeated 4 times, with 500 ms between the sending of each AMR data packet in the downlink
3	←		UE CAPABILITY ENQUIRY	
4	→		UE CAPABILITY INFORMATION	The UE transmits the message UE CAPABILITY INFORMATION and then UE RRC starts timer T304
4a				SS does not transmit UE CAPABILITY INFORMATION CONFIRM message , which causes timer T304 in UE to expire and trigger the re-transmission. After N304+1 transmissions, UE detects the radio link failure and stops transmission of E-DCH
5	→		CELL UPDATE	The UE shall transmit a Cell Update message with the IE "Cell update cause" set to "radio link failure".
6	←		CELL UPDATE CONFIRM	UM RLC associated with CS RAB should be re-established following CELL UPDATE CONFIRM
7	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
8	←		PDCP Data	The SS sends a PDCP AMR Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 010 (PDCP AMR Data PDU) CS counter = first to fifth LSBs of the CFN at which the packet has been received from higher layers
9	→		PDCP Data	The UE loops back PDCP AMR Data PDU with the following content back to the SS: PDU type = 010 (PDCP AMR Data PDU) CS counter = first to fifth LSBs of the CFN at which the packet has been received from higher layers data: previously received AMR frames
				Steps 8-9 are repeated 4 times, with 500 ms between the sending of each AMR data packet in the downlink
Deactivate a UE terminated CS session (using UE test loop mode 1). Refer to section 7.3.1 of TS 34.123-1 for common test procedure.				

Specific Message Contents

SECURITY MODE COMMAND (Preamble Step for UE terminated CS session using UE test loop mode 1)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE with the exception of the following IEs:

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
- Message authentication code	Calculated result in SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	Next RRC SN
Security Capability	
- Ciphering algorithm capability	
- UEA0	If the UE has indicated support for ciphering algorithm UEA0 in the IE "security capability" in the RRC CONNECTION SETUP COMPLETE message, this IE is set to TRUE.
- UEA1	If the UE has indicated support for ciphering algorithm UEA1 in the IE "security capability" in the RRC CONNECTION SETUP COMPLETE message, this IE is set to TRUE.
- UEA2	If the UE has indicated that "Security capability indication" of "UE radio access capability compressed" is set to TRUE in the RRC CONNECTION SETUP COMPLETE message, this IE is set to TRUE.
- Spare	Spare 3-15 = FALSE
- Integrity protection algorithm capability	
- UIA1	TRUE
- UIA2	If the UE has indicated that "Security capability indication" of "UE radio access capability compressed" is set to TRUE in the RRC CONNECTION SETUP COMPLETE message, this IE is set to TRUE.
Ciphering mode info	
- Ciphering mode command	Start
- Ciphering algorithm	UEA1 or UEA2. UEA2 is selected if "Security capability indication" is TRUE in the RRC CONNECTION SETUP COMPLETE message otherwise UEA1.
- Ciphering activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	
- RB Identity	1
- RLC sequence number	Current RLC SN
- RB Identity	2
- RLC sequence number	Current RLC SN + 2
- RB Identity	3
- RLC sequence number	Current RLC SN
- RB Identity	4
- RLC sequence number	Current RLC SN
Integrity protection mode info	
- Integrity protection mode command	Start
- Downlink integrity protection activation info	Not Present
- Integrity protection algorithm	UIA2 if indicated that "Security capability indication" of "UE radio access capability compressed" is set to TRUE in the RRC CONNECTION SETUP COMPLETE message, this IE is set to TRUE otherwise UIA1.
- Integrity protection initialisation number	SS selects an arbitrary 32 bits number for FRESH
CN domain identity	CS Domain
UE system specific security capability	Not Present in condition A1
UE system specific security capability	Present In condition A2
- Inter-RAT UE security capability	
- CHOICE *system*	GSM
- GSM security capability	The indicated algorithms must be the same as the algorithms supported by the UE as indicated in the IE " UE system specific capability " in the RRC CONNECTION SETUP COMPLETE message.

Condition	Explanation
A1	UE not supporting GSM
A2	UE supporting GSM

RADIO BEARER SETUP message

Speech to CELL_DCH / E-DCH / HS-DSCH CS RAB with DTX/DRX and enhanced data rate using one multiplexing option (1/1) and SRBs mapped on E-DCH/HS-DSCH (Condition A23), with the following exceptions

Information Element	Value/remark
- RAB information for setup	
- CS-HSPA information	
- UL AMR rate	Not Present
- Max CS delay	100
- RB information to be affected	
- RB identity	1 (UM DCCH for RRC)
- Information for each multiplexing option	2 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	1
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present

- Logical channel identity	1
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.3 (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RB identity	2 (AM DCCH for RRC)
- Information for each multiplexing option	2 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	2
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.3 (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB identity	3 (AM DCCH for RRC)
- Information for each multiplexing option	2 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	3

- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.3 (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB identity	4 (AM DCCH for RRC)
- Information for each multiplexing option	2 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	4
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.10.2.4.1.3 (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4

UE CAPABILITY ENQUIRY (Step 3)

Use the same message content found in TS 34.108 clause 9

UE CAPABILITYINFORMATION (Step 4)

Use the same message content found in TS 34.108 clause 9

CELL UPDATE (Step 5)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in Cell 1.
- SRNC Identity	Check to see if set to value assigned in Cell 1.
Cell Update Cause	Check to see if set to “Radio link failure”

CELL UPDATE CONFIRM (Step 6)

Use the same message content found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
New Primary E-RNTI	'1010 1010 1010 1010'
RRC State indicator	CELL_DCH
DTX-DRX timing information	
CHOICE timing	
- New timing	
- Enabling Delay	16
- UE DTX DRX Offset	1 if 2ms TTI selected, otherwise 0
DTX-DRX Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A23.
DRX Information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A23.
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A23.
Uplink DPCH info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A23.
E-DCH Info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A23.
Downlink HS-PDSCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A23.
Downlink information common for all radio links	
- Downlink F-DPCH info common for all RL	
- Timing Indication	Initialise
- Downlink F-DPCH power control information	
- DPC mode	0 (single)
- TPC command error rate target	0.04
- CHOICE mode	FDD
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
- MAC-hs reset indicator	TRUE
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A23.

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 7)

Use the same message content found in TS 34.108 clause 9

Content of PDCP Data PDU (Step 8)

Information Element	Value/remark
PDU type	010
CS counter	first to fifth LSBs of the CFN at which the packet has been received from higher layers
Data	244 bits of AMR data + 4 bits of padding

Content of PDCP Data PDU (Step 9)

Information Element	Value/remark
PDU type	010
CS counter	first to fifth LSBs of the CFN at which the packet has been received from higher layers
Data	Same content as Data from PDCP Data PDU at Step 8

8.3.1.48.5 Test requirement

At step 5, the UE shall transmit a CELL UPDATE message with cause radio link failure.

At steps 8 and 9 the UE shall successfully loop back all the data packets after UM RLC re-establishment.

8.3.1.49 Cell Update: Intra Frequency cell reselection in Enhanced CELL_FACH with DRX configured

8.3.1.49.1 Definition

8.3.1.49.2 Conformance requirement

The UE should store all relevant IEs included in this system information block. The UE shall

…

1> if the UE is in CELL_FACH state or Idle mode; and

1> if the UE does support E-DCH transmission in CELL_FACH state and Idle mode; and

1> if the IE "HS-DSCH common system information" is included in system information block type 5 or 5bis; and

1> if the IE "Common E-DCH system info" is included system information block type 5 or 5bis:

2> use the Enhanced Uplink in CELL_FACH state and Idle mode as specified in section 8.5.45 for FDD or 8.5.45a for 1.28 Mcps TDD and [15] for DTCH, DCCH and CCCH transmission.

[…]

The HS_DSCH_DRX_CELL_FACH_STATUS variable shall be set to TRUE only when the following conditions are met:

1> the UE supports HS-DSCH DRX operation in CELL_FACH state;

1> the UE is in CELL_FACH state;

1> the UE has a dedicated H-RNTI configured;

1> the IE "HS-DSCH DRX in CELL_FACH Information" for FDD or IE "HS-DSCH DRX in CELL_FACH Information 1.28 Mcps TDD" for 1.28 Mcps TDD has been received from System Information Block Type 5 or System Information Block Type 5bis;

1> for 1.28 Mcps TDD, UE with dedicated H-RNTI configured, after transiting from CELL_PCH to CELL_FACH state, has detected its dedicated H-RNTI on HS-SCCH indicating HS-DSCH reception;

1> for FDD, either of the following conditions is met:

2> the value of the IE "DRX Interruption by HS-DSCH data" received from System Information Block Type 5 or System Information Block Type 5bis has been set to TRUE; or

2> the UE supports common E-DCH transmission and the IE "Common E-DCH system info" is included in System Information Block type 5 or System Information Block Type 5bis.

If any of the above conditions is not met and the HS_DSCH_DRX_CELL_FACH_STATUS variable is set to TRUE, the UE shall:

1> stop any ongoing CELL_FACH HS-DSCH DRX operation;

1> set the HS_DSCH_DRX_CELL_FACH_STATUS to FALSE;

1> stop the timer T321, if it is ongoing.

[…]

The CELL_FACH HS-DSCH DRX operation determines the occasions in which the UE is allowed to discontinuously receive HS-DSCH in CELL_FACH state.

1> if E-DCH enhanced random access process termination information is received from lower layers:

2> if the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED is FALSE:

3> start the timer T321.

1> if the value of the IE "DRX Interruption by HS-DSCH data" received from System Information Block Type 5 or System Information Block Type 5bis is TRUE:

2> if the UE does not have an E-DCH resource assigned and data is received on HS-DSCH:

3> if the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED is FALSE:

4> start or, if the timer is running, restart the timer T321 at the end of the HS-SCCH subframe addressed to this UE.

3> continuously receive HS-DSCH.

Upon timer T321 expiry; or

Upon state transition to CELL_FACH if HS_DSCH_DRX_CELL_FACH_STATUS is set to TRUE and if the UE does not support E-DCH transmission in CELL_FACH state and Idle mode and if IE "DRX Interruption by HS-DSCH data" received from System Information Block Type 5 or System Information Block Type 5bis is set TRUE:

1> the UE shall receive HS-DSCH during the frame(s) with the SFN value fulfilling the following inequality:

$$(SFN - H\text{-}RNTI) \bmod DRX\_cycle < Rx\_burst$$

where:

- H-RNTI is the value stored in the variable H_RNTI;
- DRX_cycle is the length of the DRX cycle in radio frames, signalled by the IE "HS-DSCH DRX $cycle_{FACH}$";
- Rx burst is the period in frames within the DRX cycle, in which the UE receives HS-DSCH, signalled by the IE "HS-DSCH Rx $burst_{FACH}$".

For FDD when in CELL_FACH state, when the variable HS_DSCH_RECEPTION_CELL_FACH_STATE is set to TRUE and the variable HS_DSCH_DRX_CELL_FACH_STATUS is set to TRUE,
then the UE in FDD mode shall perform measurements as specified in subclauses 8.4.1.6 and 8.4.1.9, according to the requirements in [19].

The UE may omit the inter-frequency and inter-RAT measurements specified according to the requirements in [19] in subclauses 8.4.1.6 and 8.4.1.9, when the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED is TRUE.

[…]

A UE shall initiate the cell update procedure in the following cases:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

[…]

If the UE after state transition remains in CELL_FACH state, it shall

1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select PRACH according to TS 25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

1> not prohibit periodical status transmission in RLC;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> ignore that IE and stop using DRX.

[…]

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list"; and
- includes the IE "RB information to reconfigure list"; or
- includes the IE "RB information to be affected list":

the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message using AM RLC.

Reference

3GPP TS 25.331 clause 8.1.1.6.5, 8.5.48, 8.5.49, 8.3.1

8.3.1.49.3 Test purpose

1. To confirm that the UE performs Intra Frequency cell reselection in Enhanced CELL_FACH state when Enhanced DRX is configured.

8.3.1.49.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 configures Common E-DCH / HS-DSCH for CELL_FACH in System Information Type 5 with Enhanced DRX and Cell 2 configures Common E-DCH / HS-DSCH for CELL_FACH in System Information Type 5

UE: PS-DCCH Enhanced CELL_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 with SRB mapping on common E-DCH (DCCH)/HS-DSCH (DCCH). UE does not have common E-DCH resource.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

SYSTEM INFORMATION BLOCK TYPE 5 (see specific message contents).

SYSTEM INFORMATION BLOCK TYPE 11 (see specific message contents).

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-DSCH DRX operation

Test Procedure

Table 8.3.1.49

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-70	-70	-60

Table 8.3.1.49 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in Enhanced CELL_FACH state (SRB mapping on common E-DCH/HS-DSCH) state with Enhanced DRX configured and camped onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in Table 8.3.1.49. The UE shall find Cell 2 to be more suitable for service and perform a cell reselection. After the completion of cell reselection, the UE shall transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 2 using common E-DCH and set IE "Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_FACH" with valid "New C-RNTI", "New H-RNTI" and "New Primary E-RNTI" to the UE on the downlink DCCH. SS verifies that the UE sends UTRAN MOBILITY INFORMATION CONFIRM . Finally CALL C.2 procedure is executed to check that UE is in Enhanced CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in Enhanced CELL_FACH state (common E-DCH / HS-DSCH) in cell 1 with Enhanced DRX configured.
2				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.49. The UE shall find that the cell 2 is better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
3	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
4	←		CELL UPDATE CONFIRM	Transmitted by the UE on the DL DCCH (SRB#1), New C-RNTI, New H-RNTI and New Primary E-RNTI identity is assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH".
5	→		UTRAN MOBILITY INFORMATION CONFIRM	
6	←→		CALL C.2	If the test result of C.2 indicates that UE is in Enhanced CELL_FACH state with common E-DCH in UL and HS_DSCH in DL, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

System Information Block type 5 (FDD)

Use the default parameter values for the system information block 5 with the same type specified in clause

6.1.1 of TS 34.108 for common E-DCH and HS-DSCH reception in CELL_FACH, with the following exceptions:

Information Element	Value/remark
HS-DSCH DRX in CELL_FACH Information	
-T321	200 ms
- HS-DSCH DRX $cycle_{FACH}$	4
- HS-DSCH Rx $burst_{FACH}$	1
- DRX Interruption by HS-DSCH data	FALSE

System Information Block type 11 (FDD)

Use the default parameter values for the system information block 11 with the same type specified in clause

6.1.1 of TS 34.108 with the following exception:

Information Element	Value/remark
FACH measurement occasion info	Not Present

CELL UPDATE (Step 3)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'.
Cell Update Cause	
HS-PDSCH in CELL_FACH	TRUE
Support of common E-DCH	TRUE
Support of HS-DSCH DRX operation	TRUE
Support of MAC-i/is	TRUE

CELL UPDATE CONFIRM (Step 4)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the DL DCCH (SRB#1), with the exception of the following IEs

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'
New H-RNTI	'1110 1010 1010 1010'
New Primary E-RNTI	'1110 1010 1010 1010'

8.3.1.49a Cell Update: Inter Frequency cell reselection in Enhanced CELL_FACH with DRX configured

8.3.1.49a.1 Definition

8.3.1.49a.2 Conformance requirement

The UE should store all relevant IEs included in this system information block. The UE shall

…

1> if the UE is in CELL_FACH state or Idle mode; and

1> if the UE does support E-DCH transmission in CELL_FACH state and Idle mode; and

1> if the IE "HS-DSCH common system information" is included in system information block type 5 or 5bis; and

1> if the IE "Common E-DCH system info" is included system information block type 5 or 5bis:

3> use the Enhanced Uplink in CELL_FACH state and Idle mode as specified in section 8.5.45 for FDD or 8.5.45a for 1.28 Mcps TDD and [15] for DTCH, DCCH and CCCH transmission.

[…]

The HS_DSCH_DRX_CELL_FACH_STATUS variable shall be set to TRUE only when the following conditions are met:

1> the UE supports HS-DSCH DRX operation in CELL_FACH state;

1> the UE is in CELL_FACH state;

1> the UE has a dedicated H-RNTI configured;

1> the IE "HS-DSCH DRX in CELL_FACH Information" for FDD or IE "HS-DSCH DRX in CELL_FACH Information 1.28 Mcps TDD" for 1.28 Mcps TDD has been received from System Information Block Type 5 or System Information Block Type 5bis;

1> for 1.28 Mcps TDD, UE with dedicated H-RNTI configured, after transiting from CELL_PCH to CELL_FACH state, has detected its dedicated H-RNTI on HS-SCCH indicating HS-DSCH reception;

1> for FDD, either of the following conditions is met:

2> the value of the IE "DRX Interruption by HS-DSCH data" received from System Information Block Type 5 or System Information Block Type 5bis has been set to TRUE; or

2> the UE supports common E-DCH transmission and the IE "Common E-DCH system info" is included in System Information Block type 5 or System Information Block Type 5bis.

If any of the above conditions is not met and the HS_DSCH_DRX_CELL_FACH_STATUS variable is set to TRUE, the UE shall:

1> stop any ongoing CELL_FACH HS-DSCH DRX operation;

1> set the HS_DSCH_DRX_CELL_FACH_STATUS to FALSE;

1> stop the timer T321, if it is ongoing.

[…]

The CELL_FACH HS-DSCH DRX operation determines the occasions in which the UE is allowed to discontinuously receive HS-DSCH in CELL_FACH state.

1> if E-DCH enhanced random access process termination information is received from lower layers:

2> if the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED is FALSE:

3> start the timer T321.

1> if the value of the IE "DRX Interruption by HS-DSCH data" received from System Information Block Type 5 or System Information Block Type 5bis is TRUE:

2> if the UE does not have an E-DCH resource assigned and data is received on HS-DSCH:

3> if the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED is FALSE:

4> start or, if the timer is running, restart the timer T321 at the end of the HS-SCCH subframe addressed to this UE.

3> continuously receive HS-DSCH.

Upon timer T321 expiry; or

Upon state transition to CELL_FACH if HS_DSCH_DRX_CELL_FACH_STATUS is set to TRUE and if the UE does not support E-DCH transmission in CELL_FACH state and Idle mode and if IE "DRX Interruption by HS-DSCH data" received from System Information Block Type 5 or System Information Block Type 5bis is set TRUE:

1> the UE shall receive HS-DSCH during the frame(s) with the SFN value fulfilling the following inequality:

$$(SFN - H\text{-}RNTI) \bmod DRX\_cycle < Rx\_burst$$

where:

- H-RNTI is the value stored in the variable H_RNTI;
- DRX_cycle is the length of the DRX cycle in radio frames, signalled by the IE "HS-DSCH DRX cycle$_{FACH}$";
- Rx burst is the period in frames within the DRX cycle, in which the UE receives HS-DSCH, signalled by the IE "HS-DSCH Rx burst$_{FACH}$".

For FDD when in CELL_FACH state, when the variable HS_DSCH_RECEPTION_CELL_FACH_STATE is set to TRUE and the variable HS_DSCH_DRX_CELL_FACH_STATUS is set to TRUE,
then the UE in FDD mode shall perform measurements as specified in subclauses 8.4.1.6 and 8.4.1.9, according to the requirements in [19].

The UE may omit the inter-frequency and inter-RAT measurements specified according to the requirements in [19] in subclauses 8.4.1.6 and 8.4.1.9, when the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED is TRUE.

[…]

A UE shall initiate the cell update procedure in the following cases:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

[…]

If the UE after state transition remains in CELL_FACH state, it shall

1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select PRACH according to TS 25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

1> not prohibit periodical status transmission in RLC;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

3> ignore that IE and stop using DRX.

[…]

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list"; and
- includes the IE "RB information to reconfigure list"; or
- includes the IE "RB information to be affected list":

the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message using AM RLC.

Reference

3GPP TS 25.331 clause 8.1.1.6.5, 8.5.48, 8.5.49, 8.3.1

8.3.1.49a.3 Test purpose

1. To confirm that the UE performs Inter-frequency measurements when Enhanced DRX is configured in Enhanced Cell_FACH state.
2. To confirm that the UE performs Inter Frequency cell reselection in Enhanced CELL_FACH state.

8.3.1.49a.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 configures Common E-DCH / HS-DSCH for CELL_FACH in System Information Type 5 with Enhanced DRX and Cell 2 also configures Common E-DCH / HS-DSCH for CELL_FACH in System Information Type 5

UE: PS-DCCH Enhanced CELL_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 with SRB mapping on common E-DCH (DCCH)/HS-DSCH (DCCH). UE does not have common E-DCH resource.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

SYSTEM INFORMATION BLOCK TYPE 5 (see specific message contents).

SYSTEM INFORMATION BLOCK TYPE 11 (see specific message contents).

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-DSCH DRX operation

Test Procedure

Table 8.3.1.49a

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		High Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-70	-70	-60

Table 8.3.1.49a illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in Enhanced CELL_FACH state (SRB mapping on common E-DCH/HS-DSCH) state with Enhanced DRX configured and camped onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in Table 8.3.1.49a. The UE shall find Cell 2 to be more suitable for service and perform a cell reselection. After the completion of cell reselection, the UE shall transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 2 using common E-DCH and set IE "Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_FACH" with valid "New C-RNTI", "New H-RNTI" and "New Primary E-RNTI" to the UE on the downlink DCCH. SS verifies that the UE sends UTRAN MOBILITY INFORMATION CONFIRM . Finally CALL C.2 procedure is executed to check that UE is in Enhanced CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in Enhanced CELL_FACH state (common E-DCH / HS-DSCH) in cell 1 with Enhanced DRX configured.
2				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.49a. The UE shall find that the cell 2 is better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
3	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
4	←		CELL UPDATE CONFIRM	New C-RNTI, New H-RNTI and New Primary E-RNTI identity is assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH".
5	→		UTRAN MOBILITY INFORMATION CONFIRM	
6	←→		CALL C.2	If the test result of C.2 indicates that UE is in Enhanced CELL_FACH state with common E-DCH in UL and HS_DSCH in DL, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

System Information Block type 5 (FDD)

Use the default parameter values for the system information block 5 with the same type specified in clause

6.1.1 of TS 34.108 for common E-DCH and HS-DSCH reception in CELL_FACH, with the following exceptions:

Information Element	Value/remark
HS-DSCH DRX in CELL_FACH Information	
-T321	200 ms
- HS-DSCH DRX cycle$_{FACH}$	4
- HS-DSCH Rx burst$_{FACH}$	1
- DRX Interruption by HS-DSCH data	FALSE

System Information Block type 11 (FDD)

Use the default parameter values for the system information block 11 with the same type specified in clause

6.1.1 of TS 34.108 with the following exception

Information Element	Value/remark
FACH measurement occasion info	Not Present

CELL UPDATE (Step 3)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'.
Cell Update Cause	
HS-PDSCH in CELL_FACH	TRUE
Support of common E-DCH	TRUE
Support of HS-DSCH DRX operation	TRUE
Support of MAC-i/is	TRUE

CELL UPDATE CONFIRM (Step 4)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the DL DCCH (SRB#1), with the exception of the following IEs

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'
New H-RNTI	'1110 1010 1010 1010'
New Primary E-RNTI	'1110 1010 1010 1010'

8.3.1.50 Cell Update: Cell reselection in CELL_FACH when common E-DCH resource is released

8.3.1.50.1 Definition and applicability

UE supports FDD and Enhanced Uplink in CELL_FACH state.

8.3.1.50.2 Conformance requirement

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during the preceding time interval Treselection. For UE in RRC connected mode states CELL_PCH or URA_PCH the interval Treselection$_{s,PCH}$ applies, if provided in SIB4 [see 4], while for UE in RRC connected mode state CELL_FACH the interval Treselection$_{s,FACH}$ applies, if provided in SIB4 [see 4]. For hierarchical cell structures when high-mobility state has not been detected, if according to the HCS rules the serving cell is not ranked then all the ranked cells are considered to be better ranked than the serving cell. In case the UE reselects to a cell on an MBMS preferred frequency to receive an MBMS service not available on the current frequency the UE may reduce interval Treselection$_S$, Treselection$_{S,PCH}$ and Treselection$_{S,FACH}$.

Additionally the UE shall apply the following scaling rules to $Treselection_s$ or $Treselection_{s,PCH}$ or $Treselection_{s,FACH}$:

- For intra-frequency cells and high-mobility state not detected:
  - no scaling applied.
- For intra-frequency cells and high-mobility state is detected:
  - multiply $Treselection_s$ or $Treselection_{s,PCH}$ or $Treselection_{s,FACH}$ by the IE "Speed dependent ScalingFactor for_Treselection" if sent on system information.
- For inter-frequency cells and high-mobility state not detected:
  - multiply $Treselection_s$ or $Treselection_{s,PCH}$ or $Treselection_{s,FACH}$ by the IE "Inter-Frequency ScalingFactor for Treselection" if sent on system information.
- For inter-frequency cells and high-mobility state is detected:
  - multiply $Treselection_s$ or $Treselection_{s,PCH}$ or $Treselection_{s,FACH}$ by both the IEs "Speed dependent ScalingFactor for_Treselection" if sent on system information and "Inter-Frequency ScalingFactor for Treselection" if sent on system information.
- For inter-RAT cells and high-mobility state not detected:
  - multiply $Treselection_s$ or $Treselection_{s,PCH}$ or $Treselection_{s,FACH}$ by the IE "Inter-RAT ScalingFactor for Treselection" if sent on system information.
- For inter-RAT cells and high-mobility state is detected:
  - multiply $Treselection_s$ or $Treselection_{s,PCH}$ or $Treselection_{s,FACH}$ by both the IEs “Speed dependent ScalingFactor for_Treselection” if sent on system information and “Inter-RAT ScalingFactor for Treselection" if sent on system information.

In case scaling is applied to $Treselection_s$ or $Treselection_{s,PCH}$, the UE shall round up the result after all scalings to the nearest second. In case scaling is applied to $Treselection_{s,FACH}$, the UE shall round up the result after all scalings to the nearest 0.2 seconds.

- more than 1 second has elapsed since the UE camped on the current serving cell.
- For FDD the UE does not have an allocated common E-DCH resource.
- For 1.28 Mcps TDD, the UE does not have CELL Reselection Indication procedure ongoing.

For FDD the UE continues taking intra-frequency measurements and ranking cells while it has an allocated common E-DCH resource.

Reference

3GPP TS 25.304 clause 5.2.6.1.4

8.3.1.50.3 Test purpose

1. To confirm that the UE performs cell reselection in Enhanced CELL_FACH state when common E-DCH resource is released.

8.3.1.50.4 Method of test

Initial Condition

System Simulator: 2 cells – Both cells configure Common E-DCH for CELL_FACH in System Information Type 5.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

SYSTEM INFORMATION BLOCK TYPE 5 (see specific message contents).

SYSTEM INFORMATION BLOCK TYPE 3/4 (see specific message contents).

UE: PS-DCCH Enhanced CELL_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 with SRB mapping on common E-DCH /HS-DSCH

$T_{reselect\_period}$ = 120 seconds (sufficient time interval for UE to detect a suitable cell and perform cell reselection)

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports common E-DCH

Test Procedure

Table 8.3.1.50: downlink power to be applied

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-70	-70	-60

Table 8.3.1.50 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denotes the initial condition.

The UE is in Enhanced CELL_FACH state camped onto cell 1 with common E-DCH resource (note that common E-DCH resource has not been implicitly released by UE or explicitly released by SS at this stage. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.50. The UE shall find Cell 2 to be more suitable for service but shall not send CELL UPDATE. The SS sends Explicit Release on E-AGCH with the UE's E-RNTI to release the common E-DCH resource. UE shall reselect to Cell 2 by sending CELL_UPDATE on the uplink CCCH of cell 2 and set IE "Cell update cause" to "Cell Reselection" within $T_{reselect\_period}$. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_FACH" with valid "New C-RNTI", "New H-RNTI" and "New Primary E-RNTI" to the UE on the downlink DCCH. SS verifies that the UE sends UTRAN MOBILITY INFORMATION CONFIRM. Finally CALL C.2 procedure is executed to check that UE is in Enhanced CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in Enhanced CELL_FACH state camped on cell 1 with allocated common E-DCH resource and HS-DSCH configured.
2				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.50.
3			Absolute grant	SS sends Explicit Release on E-AGCH to release the common E-DCH resource.
4	←		Wait for $T_{reselect\_period}$ seconds	UE shall not send CELL UPDATE even though Cell 2 is suitable according to normal cell reselection criteria.
5	→		CELL UPDATE	UE performs cell reselection to cell 2 within $T_{reselect\_period}$. Value "cell reselection" shall be indicated in IE "Cell update cause"
6	←		CELL UPDATE CONFIRM	Transmitted on DL CCH (SRB#1) .New C-RNTI, New H-RNTI and New Primary E-RNTI identity is assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH".
7	→		UTRAN MOBILITY INFORMATION CONFIRM	
8	←→		CALL C.2	If the test result of C.2 indicates that UE is in Enhanced CELL_FACH state with common E-DCH in UL and HS_DSCH in DL, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

System Information Block type 3/4 (FDD)

Use the default system information block with the same type specified in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- $Treselection_{s,FACH}$	120 seconds

System Information Block type 5 (FDD)

Use the default parameter values for the system information block 5 with the same type specified in clause

6.1.0b of TS 34.108 for common E-DCH and HS-DSCH reception in CELL_FACH, with the following exceptions:

Information Element	Value/Remark
- Common EDCH System Info - E-DCH transmission continuation back off	 Infinity

CELL UPDATE (Step 5)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause HS-PDSCH in CELL_FACH Support of common E-DCH Support of MAC-i/is	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001'. Check to see if set to 'Cell Re-selection' TRUE TRUE TRUE

CELL UPDATE CONFIRM (Step 6)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the DL DCCH (SRB#1), with the exception of the following IEs

Information Element	Value/remark
New C-RNTI New H-RNTI New Primary E-RNTI	'1010 1010 1010 1010' '1110 1010 1010 1010' '1110 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 7)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink DCCH,

8.3.1.50.5 Test Requirement

At step 3, UE should release the common E-DCH resource after reception of explicit release command on E-AGCH from SS.

At step 5, UE reselects the Cell 2 and sends Cell Update with cause "Cell reselection"

8.3.1.51 Cell Update: Cell reselection in CELL_FACH (Reselection between cell not supporting HS-PDSCH and E-DCH in CELL_FACH and cell supporting HS-PDSCH and E-DCH in CELL_FACH)

8.3.1.51.1 Definition and applicability

All UEs which support LCR TDD and HS-PDSCH and E-DCH in CELL_FACH.

8.3.1.51.2 Conformance requirement

In the CELL_FACH state the UE shall perform the following actions:

NOTE: DCCH and, if configured, DTCH are available in this state.

1> if the UE is "in service area":

2> maintain up-to-date system information as broadcast by the serving cell as specified in subclause 8.1.1;

2> perform cell reselection process as specified in [4];

2> perform measurements process according to measurement control information as specified in subclause 8.4 and in subclause 14.4;

2> run timer T305 (periodical cell update);

2> select and configure the RB multiplexing options applicable for the transport channels to be used in this RRC state;

2> for 3.84 Mcps and 7.68 Mcps TDD; or

2> for FDD and 1.28 Mcps TDD, if the UE does not support HS-DSCH reception in CELL_FACH state; or

2> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis; or

2> for 1.28 Mcps TDD, if the IE "common E-DCH system info" is not included in System Information Block type 5:

3> listen to all FACH transport channels mapped on the S-CCPCH selected by the UE according to the procedure in subclause 8.5.19.

2> else:

3> if variable H_RNTI is set:

4> receive physical channels HS-SCCH(s) using the value of the variable H_RNTI as UE identity and parameters given by the IE(s) "HS-DSCH common system information" according to the procedure in subclause 8.5.36.

3> else:

4> if the variable HS_DSCH_RECEPTION_OF_CCCH_ENABLED or the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED is set to TRUE:

5> receive physical channel(s) of type HS-SCCH with selected common H-RNTI using parameters given by the IE(s) "HS-DSCH common system information" according to the procedure in subclause 8.5.37.

…

The UE shall set the IEs in the CELL UPDATE message as follows:

..

1> if the UE supports HS-DSCH reception in CELL_FACH state:

2> include the IE "HS-PDSCH in CELL_FACH" and set it to TRUE.

1> if the UE supports Enhanced Uplink in CELL_FACH state and Idle mode:

2> include the IE "Support of common E-DCH" and set it to TRUE.

…

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

..

If the UE after state transition remains in CELL_FACH state, it shall

1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> if variable READY_FOR_COMMON_EDCH is set to TRUE:

2> configure the Enhanced Uplink in CELL_FACH state and Idle mode as specified in subclause 8.5.45 for FDD and 8.5.45a for 1.28 Mcps TDD.

1> else:

2> select PRACH according to subclause 8.5.17;

1> for 3.84 Mcps TDD and 7.68 Mcps TDD; or

1> for FDD and 1.28 Mcps TDD, if the UE does not support HS-DSCH reception in CELL_FACH state; or

1> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis; or

1> for 1.28 Mcps TDD, if the IE "Common E-DCH system info" is not included in System Information Block type 5:

2> select Secondary CCPCH according to subclause 8.5.19;

2> take the actions related to the HS_DSCH_RECEPTION_GENERAL variable as described in subclause 8.5.37a.

1> else:

2> For FDD, if the RBs have the multiplexing option with transport channel type "HS-DSCH" for the DL and transport channel type "RACH" in the UL; and

2> if the UE does not supports E-DCH transmission in CELL_FACH state and Idle mode or the IE "Common E-DCH system info" is not included system information block type 5 or 5bis; and

2> if variable H_RNTI and variable C_RNTI are set:

3> start to receive HS-DSCH according to the procedure in subclause 8.5.36.

2> else:

3> if the RBs have the multiplexing option with transport channel type "HS-DSCH" for the DL and transport channel type "E-DCH" in the UL; and

3> if variable READY_FOR_COMMON_EDCH is set to TRUE; and

3> if variable H_RNTI and variable C_RNTI and variable E-RNTI are set:

4> start to receive HS-DSCH according to the procedure in subclause 8.5.36.

3> else:

4> clear variable C_RNTI and delete any stored C-RNTI value;

4> clear variable H_RNTI and delete any stored H-RNTI value;

4> clear variable E_RNTI and delete any stored E-RNTI value;

4> clear any stored IEs "HARQ info";

4> set the variable INVALID_CONFIGURATION to TRUE.

…

The variable HS_DSCH_RECEPTION_CELL_FACH_STATE shall be set to TRUE only when all the following conditions are met:

1> the UE is in CELL_FACH;

1> the variable H_RNTI is set;

1> the variable C_RNTI is set;

1> System Information Block type 5 or System Information Block type 5bis includes IE "HS-DSCH common system information";

1> for 1.28 Mcps TDD, System Information Block type 5 includes IE "Common E-DCH system info".

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION_CELL_FACH_STATE is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION_CELL_FACH_STATE to FALSE;

1> if the UE is in CELL_FACH and variable HS_DSCH_RECEPTION_OF_CCCH_ENABLED is set to FALSE:

2> set the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED to FALSE;

2> set the variable HS_DSCH_RECEPTION_GENERAL to FALSE;

2> stop any HS-SCCH reception procedures;

2> stop any HS-DSCH reception procedures;

2> clear the variable H_RNTI and remove any stored H-RNTI;

2> reset the MAC-ehs entity [15];

2> release all HARQ resources;

2> clear any stored IEs "HARQ info";

Whenever the variable HS_DSCH_RECEPTION_CELL_FACH_STATE is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION_GENERAL to TRUE;

1> use the IE "HS-DSCH common system information" in System Information Block type 5 or System Information Block type 5bis;

1> for FDD, receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving cell applying the scrambling code as received in the IE "DL Scrambling code" as received in IE "HS-DSCH common system information";

1> for 1.28 Mcps TDD, receive the HS-SCCH(s) according to the stored HS-SCCH configuration, applying the HS-PDSCH midamble code according to the stored HS-PDSCH midamble configuration;

1> perform HS-DSCH reception procedures:

2> if the UE has a stored IE "HARQ info":

3> act on subclause 8.6.5.6b for the stored IE "HARQ info".

2> else:

3> act on subclause 8.6.5.20 for the IE "HARQ System info" as received in IE "HS-DSCH common system information".

2> and use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

1> and for FDD, for BCCH reception perform HS-DSCH reception procedures by listening to the first indexed HS-SCCH code listed in the IE "HS-SCCH channelisation code" with "BCCH specific H-RNTI" as received in IE "HS-DSCH common system information".

1> and for 1.28 Mcps TDD, for BCCH reception perform HS-DSCH reception procedures by listening to the first indexed HS-SCCH according to the stored HS-SCCH configuration with "BCCH specific H-RNTI" as received in IE "HS-DSCH common system information".

NOTE: For 1.28 Mcps TDD, when performing HS-DSCH reception in CELL_FACH state, the UE shall use the table of transport block size for the HS-DSCH physical layer category 9 as specified in [15].

Whenever the variable HS_DSCH_RECEPTION_CELL_FACH_STATE is set to FALSE, the UE shall:

1> if the UE is in CELL_FACH and variable HS_DSCH_RECEPTION_OF_CCCH_ENABLED is set to FALSE:

2> not perform HS-SCCH reception procedures;

2> not perform HS-DSCH reception procedures.

…

When UE does not support HS-DSCH reception in CELL_FACH state or when the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis, the UE shall:

1> set the variable HS_DSCH_RECEPTION_OF_CCCH_ENABLED to FALSE;

1> set the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED to FALSE;

1> set the variable HS_DSCH_RECEPTION_GENERAL to FALSE.

When the variable HS_DSCH_RECEPTION_OF_CCCH_ENABLED or the variable HS_DSCH_RECEPTION_OF_ETWS_ENABLED is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION_GENERAL to TRUE;

1> use the IE "HS-DSCH common system information" in System Information Block type 5 or System Information Block type 5bis;

1> configure the HARQ according to IE "HARQ System info" as defined in subclause 8.6.5.20;

1> configure the common MAC-ehs reordering queues according to IE "Common MAC-ehs reordering queues" as defined in subclauses 8.6.5.22; and then

1> receive the CCCH according to IE "CCCH mapping info" as defined in subclause 8.6.5.21;

1> if the UE is RRC Connected mode:

2> select a common H-RNTI as specified in 8.5.38;

2> if the variable HS_DSCH_RECEPTION_OF_CCCH_ENABLED is set to TRUE:

3> receive the SRB1 according to IE "SRB1 mapping info" as defined in subclause 8.6.5.19.

1> else:

2> select a common H-RNTI as specified in [4].

1> and for FDD, start to receive the HS-SCCH(s) with selected H-RNTI according to the IE "HS-SCCH channelisation code" on the selected cell applying the scrambling code as received in the IE "DL Scrambling code";

1> and for 1.28 Mcps TDD, start to receive the HS-SCCH(s) with selected H-RNTI according to the IE "HS-SCCH system info" on primary frequency in the selected cell applying the midamble code as received in the IE "HS-PDSCH Midamble Configuration";

1> configure the MAC flow for BCCH reception as specified in [15];

1> and for FDD, start to receive the first indexed HS-SCCH code listed in the IE "HS-SCCH channelisation code" with "BCCH specific H-RNTI" as received in IE "HS-DSCH common system information".

1> and for 1.28 Mcps TDD, for BCCH reception perform HS-DSCH reception procedures by listening to the first indexed HS-SCCH according to the IE "HS-SCCH system info" with "BCCH specific H-RNTI" as received in IE "HS-DSCH common system information".

NOTE: For 1.28 Mcps TDD, when performing HS-DSCH reception in CELL_FACH state, the UE shall use the table of transport block size for the HS-DSCH physical layer category 9 as specified in [15].

…

In FDD and 1.28 Mcps TDD, the MAC PDU header for DTCH and DCCH mapped on HS-DSCH CELL_FACH, CELL_PCH state is as shown in figure 9.2.1.1c-1.

- there is no MAC-d header included for DTCH and DCCH.

- there is no MAC-c header included for DTCH and DCCH when UE dedicated H-RNTI is used.
- the U-RNTI is only included as MAC-c header to MAC-d PDU for DCCH (SRB#1 only)when common H-RNTI is used

Reference

3GPP TS 25.331 clauses 7.2.2.2, 8.3.1.3 8.3.1.6, 8.5.36, 8.5.37

3GPP TS 25.321 clause 9.2.1.1c

8.3.1.51.3 Test purpose

1. To confirm that the UE starts reception of HS-PDSCH in CELL_FACH state, after reselecting to a cell supporting HS-PDSCH in CELL_FACH.
2. To confirm that the UE performs the cell reselection procedure while receiving HS-PDSCH in CELL_FACH state.
3. To confirm that the UE can receive data on DCCH (SRB#1) HS-DSCH using common H-RNTI in CELL_FACH state.

8.3.1.51.4 Method of test

Initial Condition

System Simulator: 2 cells: Cell 1 sends the default system information (HS-DSCH for CELL_FACH not configured), Cell 6 configures HS-DSCH for CELL_FACH in System Information Type 5.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

For cell 2, the following parameters are specific for the system information

Parameter	Value
T302	8000 ms

Related ICS/IXIT statement(s)

- UE supports 1.28Mcps TDD
- UE supports HS-PDSCH in CELL_FACH
- UE supports E-DCH in CELL_FACH

Test Procedure

Table 8.3.1.51

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		High Range Test Frequency	
P-CCPCH RSCP	dBm	-60	-70	-70	-60

Table 8.3.1.51 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The SS has configured its downlink transmission power according to column “T0” in table 8.3.1.51. UE is in state 6-11 in cell 1 as specified in clause 7.4 of TS 34.108 and has a radio bearer established mapped on RACH and FACH.

The SS switches its downlink transmission power settings to column “T1”. The SS transmits updated SYSTEM INFORMATION TYPE5/5bis message which includes HS-DSCH and common E-DCH reception in cell FACH state.

UE finds cell 6 as a better cell and reselects to Cell 6. The UE transmits CELL UPDATE message on uplink CCCH of cell 6 with the IE “Cell update cause” set to “cell reselection”. The SS then transmits a CELL UPDATE CONFIRM which includes the IE RRC State Indicator" set to "CELL_FACH", but with unmatched UE Id in MAC-c header, to the

UE on the downlink DCCH. The UE does not respond to this. After expiry of T302 the UE shall transmit another CELL UPDATE. The SS then transmits a CELL UPDATE CONFIRM which includes the IE RRC State Indicator" set to "CELL_FACH", but this time with matched UE Id in MAC-c header, to the UE on the downlink DCCH. Then UE shall respond by transmitting a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH.

The SS switches its downlink transmission power settings to column “T0”. UE finds cell 1 as a better cell for service and reselects to Cell 1.

The UE transmits CELL UPDATE message on uplink CCCH of cell 1 with the IE “Cell update cause” set to “cell reselection”. The SS then transmits a CELL UPDATE CONFIRM which includes the IE RRC State Indicator" set to "CELL_FACH", to the UE on the downlink DCCH. Then UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

The SS checks that the UE is in Cell FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0				The UE is in CELL_FACH state in cell 1
1				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.51. The UE shall find that the cell 6 is better for service and perform reselection. SS waits for the maximum duration required for the UE to camp to cell 6.
2	←		SYSTEM INFORMATION TYPE 5/5bis	Transmitted on cell 6. Includes configuration for HS-DSCH reception in CELL_FACH state
3	→		CELL UPDATE	Transmitted by the UE on common E-DCH. Value "cell reselection" shall be indicated in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” is set to TRUE, and “Support of common E-DCH” is set to TRUE.
4	←		CELL UPDATE CONFIRM	Transmitted by the SS on SRB1 using common H-RNTI but unmatched UE-ID in MAC-c header. IE "RRC State Indicator" is set to "CELL_FACH".
5	→		CELL UPDATE	After expiry of T302. Transmitted by the UE on common E-DCH. Value "cell reselection" shall be indicated in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” is set to TRUE, and “Support of common E-DCH” is set to TRUE
6	←		CELL UPDATE CONFIRM	Transmitted by the SS on SRB1 using common H-RNTI but with matched UE-ID in MAC-c header. IE "RRC State Indicator" is set to "CELL_FACH".
7	→		RADIO BEARER RECONFIGURATION COMPLETE	Transmitted by the UE on dedicated E-DCH.
8				SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.51. The UE shall find that the cell 1 is better for service and perform reselection. SS waits for the maximum duration required for the UE to camp to cell 1.
9	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” is set to TRUE, and “Support of common E-DCH” is set to TRUE.
10	←		CELL UPDATE CONFIRM	Transmitted by the SS on FACH / S-CCPCH. IE "RRC State Indicator" is set to "CELL_FACH".
11	→		UTRAN MOBILITY INFORMATION CONFIRM	Transmitted by the UE on RACH.
12	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

SYSTEM INFORMATION TYPE 5/ SYSTEM INFORMATION TYPE 5bis (Step 2)

Use the same message as specified for "Only for cells which configure HS-DSCH reception in CELL_FACH " in 34.108, clause 6.1.0b

CELL UPDATE (Steps 3, 5 and 9)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
Cell Update Cause	Check to see if set to 'Cell Re-selection'
HS-PDSCH in CELL_FACH	Check to see if set to TRUE
Support of common E-DCH	Check to see if set to TRUE

CELL UPDATE CONFIRM (Step 4 and 6)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the DL CCCH, with the exception of the following IEs:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'
New H-RNTI	'1110 1010 1010 1010'
RB information to be affected list	
- RB information to be affected	(UM DCCH for RRC)
- RB identity	1
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	1
- CHOICE RLC size list	According to clause 6.11.5.4.5.2 (combinations on PRACH in TS 34.108)
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	1
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- CHOICE RLC size	Flexible size
- Length indicator size	According to clause 6.11.5.4.7 TS 34.108
- Minimum UL RLC PDU size	According to clause 6.11.5.4.7 TS 34.108
- Largest UL RLC PDU size	According to clause 6.11.5.4.7 TS 34.108
- Include in Scheduling Info	TRUE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	1
- RB information to be affected	(AM DCCH for RRC)
- RB identity	2
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOption

- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	2
- CHOICE RLC size	Flexible size
- Length indicator size	According to clause 6.11.5.4.7 TS 34.108
- Minimum UL RLC PDU size	According to clause 6.11.5.4.7 TS 34.108
- Largest UL RLC PDU size	According to clause 6.11.5.4.7 TS 34.108
- Include in Scheduling Info	TRUE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	2
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	2
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.11.5.4.5.2 (combinations on PRACH in TS 34.108)
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	2
- RB information to be affected	(AM DCCH for NAS_DT High priority)
- RB identity	3
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	3
- CHOICE RLC size	Flexible size
- Length indicator size	According to clause 6.11.5.4.7 TS 34.108
- Minimum UL RLC PDU size	According to clause 6.11.5.4.7 TS 34.108
- Largest UL RLC PDU size	According to clause 6.11.5.4.7 TS 34.108
- Include in Scheduling Info	TRUE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present

- DL DSCH Transport channel identity	Not Present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	3
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.11.5.4.5.2 (combinations on PRACH in TS 34.108)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RB information to be affected	(AM DCCH for NAS_DT High priority)
- RB identity	4
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	4
- CHOICE RLC size	Flexible size
- Length indicator size	According to clause 6.11.5.4.7 TS 34.108
- Minimum UL RLC PDU size	According to clause 6.11.5.4.7 TS 34.108
- Largest UL RLC PDU size	According to clause 6.11.5.4.7 TS 34.108
- Include in Scheduling Info	TRUE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE DL MAC header type	MAC-ehs
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	4
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	4
- CHOICE RLC size list	Explicit List
- RLC size index	According to clause 6.11.5.4.5.2 (Combinations on PRACH)
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	4

RADIO BEARER RECONFIGURATION COMPLETE (Step 7)

Use the same default message as specified in TS 34.108, clause 9.

CELL UPDATE CONFIRM (Step 10)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

8.3.1.51.5 Test requirements

At step 3 the UE shall reselect to cell 6 and then it shall transmit a CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” and “Support of common E-DCH” set to TRUE.

At step 5 the UE shall not respond to the CELL UPDATE CONFIRM in step 4. The UE will instead transmit CELL UPDATE after expiry of T302.

At step 7 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM on UL using the PRACH physical resource.

At step 9 the UE shall reselect to cell 1 and then it shall transmit a CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause" and “HS-PDSCH in CELL_FACH” and “Support of common E-DCH” set to TRUE.

8.3.1.52 Cell Update: Inter Frequency cell reselection in CELL_FACH based on absolute priority

8.3.1.52.1 Definition and applicability

All UEs which support FDD and Rel 8 RAT priority cell reselection.

8.3.1.52.2 Conformance requirement

5.2.6.1.2a Measurement rules for inter-frequency and inter-RAT cell reselection when absolute priorities are used

…

If the UE has received absolute priority information for inter-frequency layers, the UE shall follow these rules:

- The UE shall perform measurements of inter-frequency layers with a priority higher than the priority of the current serving layer.

NOTE: The rate of these measurements may vary depending on whether Srxlev and Squal of the serving cell are above or below $S_{prioritysearch1}$ and $S_{prioritysearch2}$. This is specified in [10].

…

- For inter-frequency layers with a priority equal or lower than the priority of the current serving layer:
  - If $Srxlev_{ServingCell} > S_{prioritysearch1}$ and $Squal_{ServingCell} > S_{prioritysearch2}$ the UE may choose not to perform measurements of inter-frequency layers of equal or lower priority.
  - If $Srxlev_{ServingCell} <= S_{prioritysearch1}$ or $Squal_{ServingCell} <= S_{prioritysearch2}$ the UE shall perform measurements of

inter-frequency layers of equal or lower priority.

- The UE shall not perform measurements of inter-frequency layers for which the UE has no absolute priority.

…

5.2.6.1.4a Absolute priority based criteria for inter-frequency and inter-RAT cell reselection

Absolute priorities of different absolute priority layers may be provided to the UE. The following cell reselection

criteria are used for inter-frequency cells if absolute priority information for inter-frequency is available to the UE, and

inter-RAT cells if absolute priority information for inter-RAT is available to the UE.

If System Information Block 18 with UTRAN information is provided then the UE shall apply the inter-frequency priority rules below only to UTRAN cells of the selected PLMN or equivalent PLMNs. If System Information Block 18 is not provided, or is provided but contains no information for UTRAN, then the rules below apply for the entire UTRAN RAT.

…

If priority information is provided for any inter-frequency layers, cells belonging to inter-frequency layers for which no priority or no threshold is assigned shall not be considered for reselection.

…

If none of the inter-frequency layers in UTRAN are provided with both priority and threshold parameters, the cell reselection criteria in subclause 5.2.6.1.4 shall apply for inter-frequency layers in UTRAN.

…

If both criteria in subclause 5.2.6.1.4 and criteria in subclause 5.2.6.1.4a are simultaneously fulfilled, the order in which the reselection criteria are evaluated is left to UE implementation.

...

The UE may apply either priorities broadcast in system information or priorities received through dedicated signalling.

The rules regarding which set of priorities shall apply are defined in [4]. UE specific priorities are only valid in the RPLMN, and shall be cleared when the validity time of the UE specific priorities expires, or when leaving the RPLMN.

UE specific priorities are not applied in camped on any cell state.

…

The following definitions apply for the layers for which $Thresh_{x,high2}$ or $Thresh_{x,low2}$ are not provided:

- Criterion 1: the $Srxlev_{nonServingCell,x}$ of a cell on an evaluated higher absolute priority layer is greater than $Thresh_{x,high}$ during a time interval Treselection;

- Criterion 2: $Srxlev_{ServingCell} < Thresh_{serving,low}$ or $Squal_{ServingCell} < 0$ and the $Srxlev_{nonServingCell,x}$ of a inter-frequency cell on an evaluated equal absolute priority layer is greater than $Thresh_{x,low}$ during a time interval Treselection;

- Criterion 3: $Srxlev_{ServingCell} < Thresh_{serving,low}$ or $Squal_{ServingCell} < 0$ and the $Srxlev_{nonServingCell,x}$ of a cell on an evaluated lower absolute priority layer is greater than $Thresh_{x,low}$ during a time interval Treselection;

The following definitions apply for the layers for which both $Thresh_{x,high2}$ and $Thresh_{x,low2}$ are provided:

- Criterion 4: the $Squal_{nonServingCell,x}$ of a cell on an evaluated higher absolute priority layer is greater than $Thresh_{x,high2}$ during a time interval Treselection;

- Criterion 5: $Squal_{ServingCell} < Thresh_{serving,low2}$ and the $Squal_{nonServingCell,x}$ of a cell on an evaluated lower absolute priority layer is greater than $Thresh_{x,low2}$ during a time interval Treselection;

Cell reselection to a cell on a higher absolute priority layer than the camped frequency shall be performed if criterion 1 or 4 is fulfilled.

Cell reselection to an inter-frequency cell on an equal absolute priority layer to the camped frequency shall be performed if criterion 2 is fulfilled.

Cell reselection to a cell on a lower absolute priority layer than the camped frequency shall be performed if criterion 3 or 5 is fulfilled.

If more than one cell meets the above criteria, the UE shall reselect the cell with the highest $Srxlev_{nonServingCell,x}$ among the cells meeting the criteria on the highest absolute priority layer.

The UE shall not perform cell reselection to cells for which the cell selection criterion S is not fulfilled.

The UE shall not perform cell reselection until more than 1 second has elapsed since the UE camped on the current serving cell.

The UE should not perform cell reselection while the UE has an allocated common E-DCH resource.

For UE in RRC connected mode states CELL_PCH or URA_PCH the interval $Treselection_{s,PCH}$ applies, if provided in SIB4 (see [4]), while for UE in RRC connected mode state CELL_FACH the interval $Treselection_{s,FACH}$ applies, if provided in SIB4 (see [4]).

In all the above criteria the values of $Treselection_S$, $Treselection_{S,PCH}$ or $Treselection_{S,FACH}$ apply for Treselection and are scaled according to the UE mobility state and target RAT, as specified in 5.2.6.1.1a.

8.6.7.3a UTRA priority info list

If the IE "UTRA priority info list" is received in System Information Block Type 19, the UE shall:

1> if the value of the IE "Priority status" in the variable PRIORITY_INFO_LIST equals "dedicated_priority":

2> store the value of the IEs "$S_{prioritysearch1}$", "$S_{prioritysearch2}$", "$Thresh_{serving,low}$" and "$Thresh_{serving,low2}$" in the IE "UTRA Serving Cell" in the variable PRIORITY_INFO_LIST;

2> if any of the values in any of the occurrences of the IE "Frequency List" in any occurrence of the IE "Priority Info List" within the variable PRIORITY_INFO_LIST is the frequency of the serving cell:

3> store the value of the IE "priority" in the IE "UTRA Serving Cell" in the variable PRIORITY_INFO_LIST.

2> otherwise:

3> clear the value of the IE "priority" in the IE "UTRA Serving Cell" in the variable PRIORITY_INFO_LIST.

2> for each occurrence of the IE "UTRAN FDD Frequencies":

3> if the value of the IE "UARFCN" exists in the list of UTRA FDD priorities in the PRIORITY_INFO_LIST then, in the occurrence of IE "Frequency List" within the variable PRIORITY_INFO_LIST with that value of the IE "UARFCN":

4> store the value of the IEs "$Thresh_{x,high}$", "$Thresh_{x,low}$", "QqualminFDD" and "QrxlevminFDD".

2> for each occurrence of the IE "UTRAN TDD Frequencies":

3> if the value of the IE "UARFCN" exists in the list of UTRA TDD priorities in the PRIORITY_INFO_LIST then, in the occurrence of IE "Frequency List" within the variable PRIORITY_INFO_LIST with that value of the IE "UARFCN":

4> store the value of the IEs "$Thresh_{x,high}$", "$Thresh_{x,low}$" and "QrxlevminTDD".

1> otherwise:

2> update the PRIORITY_INFO_LIST IE "Priority status" to cause "sys_info_priority".

2> store information in the IE "UTRA Serving Cell" in the IE "UTRA Serving Cell" within the variable PRIORITY_INFO_LIST;

2> for each occurrence of the IE "UTRAN FDD Frequencies":

3> if an entry already exists in the IE "Priority Info List" in the variable PRIORITY_INFO_LIST with the same priority value as indicated in the IE "priority" and has the CHOICE "Radio Access Technology" set to "UTRA FDD":

4> create a new entry in the IE "Frequency List" in that occurrence of IE "Priority Info List", and store the value of "UARFCN" in the IE "UARFCN" in this occurrence of the IE "Frequency List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> store the IEs "$Thresh_{x,high}$", "$Thresh_{x,low}$", "QqualminFDD" and "QrxlevminFDD".

3> otherwise:

4> create a new entry in the IE "Priority Info List" and store the value of "priority" in the IE "priority" in this occurrence of the IE "Priority Info List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> set the CHOICE "Radio Access Technology" to "UTRA FDD" and store the value of "UARFCN" in the IE "UARFCN" in the first occurrence of the IE "Frequency List";

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$", "QqualminFDD" and "QrxlevminFDD" in that occurrence of the IE "Frequency List".

2> for each occurrence of the IE "UTRAN TDD Frequencies":

3> if an entry already exists in the IE "Priority Info List" in the variable PRIORITY_INFO_LIST with the same priority value as indicated in the IE "priority" and has the CHOICE "Radio Access Technology" set to "UTRA TDD":

4> create a new entry in the IE "Frequency List" in that occurrence of IE "Priority Info List", and store the value of "UARFCN" in the IE "UARFCN" in this occurrence of the IE "Frequency List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$" and "QrxlevminTDD".

3> otherwise:

4> create a new entry in the IE "Priority Info List" and store the value of "priority" in the IE "priority" in this occurrence of the IE "Priority Info List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> set the CHOICE "Radio Access Technology" to "UTRA TDD" and store the value of "UARFCN" in the IE "UARFCN" in the first occurrence of the IE "Frequency List";

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$" and "QrxlevminTDD" in that occurrence of the IE "Frequency List".

References

1. TS 25.304, 5.2.6.1.2a
2. TS 25.304, 5.2.6.1.4a
3. TS 25.331, 8.6.7.3a

8.3.1.52.3 Test purpose

1. To confirm that UE does not perform higher priority cell reselection based on absolute priority in CELL_FACH state, when power levels do not meet cell reselection criteria.
2. To confirm that UE performs higher priority cell reselection based on absolute priority in CELL_FACH state, when power levels meet cell reselection criteria.

8.3.1.52.4 Method of test

Initial conditions

System Simulator:

- 2 cells Cell 1 and Cell 4
- Cell 2 is mapped to cell 4 (inter frequency) of 34.108 clause 6.1 and both cells belong to different frequency bands.
- Cell 1 as the active cell with SS downlink transmission power settings according to “T0” in table 8.3.1.x below.
- SIB19 to be transmitted by both cells.

MASTER INFORMATION BLOCK

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	Set to (Current MIB value tag + 1)
SB 1 Cell Value tag	Set to (Current SIB4 value tag + 1)

SCHEDULING BLOCK 1

Information Element	Value/remark
SIB 11 Cell Value Tag	Set to (Current SIB 11 value tag + 1)

System Information Block type 11

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info - FACH Measurement occasion cycle length coefficient - Inter-frequency FDD measurement indicator - Inter-frequency TDD measurement indicator - Inter-RAT measurement indicators	 3 TRUE FALSE Not Present

SYSTEM INFORMATION CHANGE INDICATION

Information Element	Value/remark
Message Type BCCH modification info MIB Value tag	 Set equal to Value tag sent in modified MIB

User Equipment:

- UE is brought to CELL_FACH state on Cell 1 with "T0" in table 8.3.1.x below.
- UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD.

Test procedure

Table 8.3.1.52

Parameter	Unit	Cell 1			Cell 4		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			High Range Test Frequency		
CPICH Ec	dBm/3.84MHz	-60	-60	-60	-90	-77	-65
Srxlev*	dB	21	21	21	-9	4	16
qRxLevMinFDD	dB	-81			-81		
Note-Srxlev is calculated in UE. During T1, UE does not perform cell reselection to High priority cell 4. During T2, UE performs cell reselection to High priority cell 4.							

SS transmits MIB with the "MIB Value Tag" IE different from the original setting and the SIB TYPE 19 with cell 4 as the higher priority cell and cell 1 as the lower priority cell (See specific message contents). SS notifies the UE by sending a SYSTEM INFORMATION CHANGE INDICATION with the BCCH modification. SS waits for 5s to ensure UE reads all the SIB information.

SS configures downlink transmission power settings according to columns "T1" in the table 8.3.1.x. UE does not reselect to higher priority cell 4 as power levels of cell 4 do not meet the absolute priority cell reselection criteria defined in SIB TYPE 19. UE should not be sending a CELL UPDATE in this case on cell 4.

SS configures the downlink transmission power settings according to columns “T2” from table 8.3.1.x. UE performs cell reselection to higher priority cell 4 as power levels of cell 4 now meet the absolute priority cell reselection criteria defined in SIB TYPE 19. UE sends a CELL UPDATE with cause: cell reselection. SS responds with CELL UPDATE CONFIRM. SS releases the RRC connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		SYSTEM INFORMATION BLOCK TYPE 19	SS transmits MIB with the "MIB Value Tag" IE different from the original setting and the SIB TYPE 19 with cell 4 as the higher priority cell and cell 1 as the lower priority cell (See specific message contents).
2	←		SYSTEM INFORMATION CHANGE INDICATION	SS notifies the UE by sending a SYSTEM INFORMATION CHANGE INDICATION with the BCCH modification (See specific message contents) and waits for 5s for UE to read all SIB information.
3	SS			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.52.
4	UE			UE does not perform cell reselection to High Priority cell 4 as absolute priority cell reselection criterion is not satisfied.
5	SS			SS configures its downlink transmission power settings according to columns "T2" in table 8.3.1.52.
6	→		CELL UPDATE	UE performs cell reselection to Higher Priority cell 4 and sends CELL UPDATE on the new serving cell 4 and value "cell reselection" shall be indicated in IE "Cell update cause"
7	←		CELL UPDATE CONFIRM	
8	←		RRC CONNECTION RELEASE	SS releases the RRC connection.
9	→		RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents

The contents of the SYSTEM INFORMATION BLOCK TYPE 19 message in this test case is identical to TS 34.108 clause 6.1.0b, with the following exceptions:

System Information Block type19 (step 1)

Information Element	Value/remark	Version
SysInfoType19		REL-8 or later
utra-PriorityInfoList		
utra-ServingCell		
Priority	[4]	
s-PrioritySearch1	[8 (16 dB)]	
s-PrioritySearch2	Not present	
threshServingLow	[10 (20 dB)]	
utran-FDD-FrequencyList		
uarfcn	Same downlink uarfcn as used for cell 4	
priority	[5]	
threshXhigh	[5 (10 dB)]	
threshXlow	[1 (2 dB)]	
qQualMinFDD	-24 dB	
qRxLevMinFDD	-81 dBm	
utran-TDD-FrequencyList	Not present	
gsm-PriorityInfoList	Not present	
eutra-FrequencyAndPriorityInfoList	Not present	

System Information Change Indication (Step 2)

Information Element	Value/remark
Message Type	
Paging record list	Not Present
BCCH modification info	
MIB Value Tag	Set to (Current MIB value tag + 1)
BCCH Modification time	Not Present

8.3.1.52.5 Test requirements

1. At step 4, UE does not perform cell reselection to high priority cell 4, as cell reselection criterion is not satisfied.
2. At step 6, UE reselects to higher priority cell 4, as cell reselection criteria matches and sends a CELL UPDATE with cause: cell reselection.

8.3.1.53 Cell Update: Absolute priority based cell reselection failure to inter-frequency cell for which no priority or no threshold is assigned

8.3.1.53.1 Definition and applicability

All UEs which support FDD and Rel 8.

8.3.1.53.2 Conformance requirement

5.2.6.1.2a Measurement rules for inter-frequency and inter-RAT cell reselection when absolute priorities are used

…

If the UE has received absolute priority information for inter-frequency layers, the UE shall follow these rules:

- The UE shall perform measurements of inter-frequency layers with a priority higher than the priority of the current serving layer.

NOTE: The rate of these measurements may vary depending on whether Srxlev and Squal of the serving cell are above or below Sprioritysearch1 and Sprioritysearch2. This is specified in [10].

…

- For inter-frequency layers with a priority equal or lower than the priority of the current serving layer:

- If Srxlev**ServingCell** > Sprioritysearch1 and Squal**ServingCell** > Sprioritysearch2 the UE may choose not to perform measurements of inter-frequency layers of equal or lower priority.

- If Srxlev**ServingCell** <= Sprioritysearch1 or Squal**ServingCell** <= Sprioritysearch2 the UE shall perform measurements of

inter-frequency layers of equal or lower priority.

- The UE shall not perform measurements of inter-frequency layers for which the UE has no absolute priority.

…

5.2.6.1.4a Absolute priority based criteria for inter-frequency and inter-RAT cell reselection

Absolute priorities of different absolute priority layers may be provided to the UE. The following cell reselection criteria are used for inter-frequency cells if absolute priority information for inter-frequency is available to the UE, and inter-RAT cells if absolute priority information for inter-RAT is available to the UE.

If System Information Block 18 with UTRAN information is provided then the UE shall apply the inter-frequency priority rules below only to UTRAN cells of the selected PLMN or equivalent PLMNs. If System Information Block 18 is not provided, or is provided but contains no information for UTRAN, then the rules below apply for the entire UTRAN RAT.

…

If priority information is provided for any inter-frequency layers, cells belonging to inter-frequency layers for which no priority or no threshold is assigned shall not be considered for reselection.

…

If none of the inter-frequency layers in UTRAN are provided with both priority and threshold parameters, the cell reselection criteria in subclause 5.2.6.1.4 shall apply for inter-frequency layers in UTRAN.

…

If both criteria in subclause 5.2.6.1.4 and criteria in subclause 5.2.6.1.4a are simultaneously fulfilled, the order in which the reselection criteria are evaluated is left to UE implementation.

...

The UE may apply either priorities broadcast in system information or priorities received through dedicated signalling. The rules regarding which set of priorities shall apply are defined in [4]. UE specific priorities are only valid in the RPLMN, and shall be cleared when the validity time of the UE specific priorities expires, or when leaving the RPLMN. UE specific priorities are not applied in camped on any cell state.

…

The following definitions apply for the layers for which Threshx,high2 or Threshx,low2 are not provided:

- Criterion 1: the SrxlevnonServingCell,x of a cell on an evaluated higher absolute priority layer is greater than Threshx,high during a time interval Treselection;

- Criterion 2: SrxlevServingCell < Threshserving,low or SqualServingCell < 0 and the SrxlevnonServingCell,x of a inter-frequency cell on an evaluated equal absolute priority layer is greater than Threshx,low during a time interval Treselection;

- Criterion 3: SrxlevServingCell < Threshserving,low or SqualServingCell < 0 and the SrxlevnonServingCell,x of a cell on an evaluated lower absolute priority layer is greater than Threshx,low during a time interval Treselection;

The following definitions apply for the layers for which both Threshx,high2 and Threshx,low2 are provided:

- Criterion 4: the SqualnonServingCell,x of a cell on an evaluated higher absolute priority layer is greater than Threshx,high2 during a time interval Treselection;

- Criterion 5: SqualServingCell < Threshserving,low2 and the SqualnonServingCell,x of a cell on an evaluated lower absolute priority layer is greater than Threshx,low2 during a time interval Treselection;

Cell reselection to a cell on a higher absolute priority layer than the camped frequency shall be performed if criterion 1 or 4 is fulfilled.

Cell reselection to an inter-frequency cell on an equal absolute priority layer to the camped frequency shall be performed if criterion 2 is fulfilled.

Cell reselection to a cell on a lower absolute priority layer than the camped frequency shall be performed if criterion 3 or 5 is fulfilled.

If more than one cell meets the above criteria, the UE shall reselect the cell with the highest SrxlevnonServingCell,x among the cells meeting the criteria on the highest absolute priority layer.

The UE shall not perform cell reselection to cells for which the cell selection criterion S is not fulfilled.

The UE shall not perform cell reselection until more than 1 second has elapsed since the UE camped on the current serving cell.

The UE should not perform cell reselection while the UE has an allocated common E-DCH resource.

For UE in RRC connected mode states CELL_PCH or URA_PCH the interval Treselections,PCH applies, if provided in SIB4 (see [4]), while for UE in RRC connected mode state CELL_FACH the interval Treselections,FACH applies, if provided in SIB4 (see [4]).

In all the above criteria the values of Treselections, Treselections,PCH or Treselections,FACH apply for Treselection and are scaled according to the UE mobility state and target RAT, as specified in 5.2.6.1.1a.

8.6.7.3a UTRA priority info list

If the IE "UTRA priority info list" is received in System Information Block Type 19, the UE shall:

1> if the value of the IE "Priority status" in the variable PRIORITY_INFO_LIST equals "dedicated_priority":

2> store the value of the IEs "$S_{prioritysearch1}$", "$S_{prioritysearch2}$", "$Thresh_{serving,low}$" and "$Thresh_{serving,low2}$" in the IE "UTRA Serving Cell" in the variable PRIORITY_INFO_LIST;

2> if any of the values in any of the occurrences of the IE "Frequency List" in any occurrence of the IE "Priority Info List" within the variable PRIORITY_INFO_LIST is the frequency of the serving cell:

3> store the value of the IE "priority" in the IE "UTRA Serving Cell" in the variable PRIORITY_INFO_LIST.

2> otherwise:

3> clear the value of the IE "priority" in the IE "UTRA Serving Cell" in the variable PRIORITY_INFO_LIST.

2> for each occurrence of the IE "UTRAN FDD Frequencies":

3> if the value of the IE "UARFCN" exists in the list of UTRA FDD priorities in the PRIORITY_INFO_LIST then, in the occurrence of IE "Frequency List" within the variable PRIORITY_INFO_LIST with that value of the IE "UARFCN":

4> store the value of the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$", "QqualminFDD" and "QrxlevminFDD".

2> for each occurrence of the IE "UTRAN TDD Frequencies":

3> if the value of the IE "UARFCN" exists in the list of UTRA TDD priorities in the PRIORITY_INFO_LIST then, in the occurrence of IE "Frequency List" within the variable PRIORITY_INFO_LIST with that value of the IE "UARFCN":

4> store the value of the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$" and "QrxlevminTDD".

1> otherwise:

2> update the PRIORITY_INFO_LIST IE "Priority status" to cause "sys_info_priority".

2> store information in the IE "UTRA Serving Cell" in the IE "UTRA Serving Cell" within the variable PRIORITY_INFO_LIST;

2> for each occurrence of the IE "UTRAN FDD Frequencies":

3> if an entry already exists in the IE "Priority Info List" in the variable PRIORITY_INFO_LIST with the same priority value as indicated in the IE "priority" and has the CHOICE "Radio Access Technology" set to "UTRA FDD":

4> create a new entry in the IE "Frequency List" in that occurrence of IE "Priority Info List", and store the value of "UARFCN" in the IE "UARFCN" in this occurrence of the IE "Frequency List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$", "QqualminFDD" and "QrxlevminFDD".

3> otherwise:

4> create a new entry in the IE "Priority Info List" and store the value of "priority" in the IE "priority" in this occurrence of the IE "Priority Info List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> set the CHOICE "Radio Access Technology" to "UTRA FDD" and store the value of "UARFCN" in the IE "UARFCN" in the first occurrence of the IE "Frequency List";

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$", "QqualminFDD" and "QrxlevminFDD" in that occurrence of the IE "Frequency List".

2> for each occurrence of the IE "UTRAN TDD Frequencies":

3> if an entry already exists in the IE "Priority Info List" in the variable PRIORITY_INFO_LIST with the same priority value as indicated in the IE "priority" and has the CHOICE "Radio Access Technology" set to "UTRA TDD":

4> create a new entry in the IE "Frequency List" in that occurrence of IE "Priority Info List", and store the value of "UARFCN" in the IE "UARFCN" in this occurrence of the IE "Frequency List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$" and "QrxlevminTDD".

3> otherwise:

4> create a new entry in the IE "Priority Info List" and store the value of "priority" in the IE "priority" in this occurrence of the IE "Priority Info List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> set the CHOICE "Radio Access Technology" to "UTRA TDD" and store the value of "UARFCN" in the IE "UARFCN" in the first occurrence of the IE "Frequency List";

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$" and "QrxlevminTDD" in that occurrence of the IE "Frequency List".

References

1. TS 25.304, 5.2.6.1.2a
2. TS 25.304, 5.2.6.1.4a
3. TS 25.331, 8.6.7.3a

8.3.1.53.3 Test purpose

1. To confirm that if priority information is provided for any inter-frequency layers, cells belonging to inter-frequency layers for which no priority or no threshold is assigned shall not be considered for reselection.

2. To confirm that UE performs higher priority cell reselection based on absolute priority in CELL_FACH state, when priority is assigned to the cell.

8.3.1.53.4 Method of test

Initial conditions

System Simulator:

2 cells Cell 1 and Cell 4

Cell5 is a dummy cell referenced in SIB-19

Cell 1 is the active cell with SS downlink transmission power settings according to “T0” in table 8.3.1.53 below.

System Information Block type 11

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present

User Equipment:

UE supports FDD and Rel-8 RAT priority cell reselection.

UE is brought to CELL_FACH state on Cell 1 with "T0" in table 8.3.1.53 below.

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD.

Test Procedure

Table 8.3.1.53

Parameter	Unit	Cell 1		Cell 4	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		High Range Test Frequency	
CPICH Ec	dBm/3.84MHz	-60	-60	-90	-65
Srxlev*	dB	21	21	-9	16
qRxLevMinFDD	dB	-81		-81	
Note-Srxlev is calculated in UE. During T1, Cell 4 meets the criteria for higher priority cell reselection					

SS transmits MIB with the "MIB Value Tag" IE different from the original setting and the SIB TYPE 19 with cell 5(dummy cell which does not exist) as the higher priority cell and cell 1 as the lower priority cell (See specific message contents). SS notifies the UE by sending a SYSTEM INFORMATION CHANGE INDICATION with the BCCH modification. SS waits for 5s to ensure UE reads all the SIB information.

SS configures downlink transmission power settings according to columns "T1" in the table 8.3.1.53. UE does not reselect to cell 4 although it fulfils the cell reselection criteria, as no priority is assigned to this cell in SIB19. UE should not be sending a CELL UPDATE in this case on cell 4.

SS transmits MIB with the "MIB Value Tag" IE different from the original setting and the SIB TYPE 19 with cell 4 as the higher priority cell and cell 1 as the lower priority cell (See specific message contents). SS notifies the UE by sending a SYSTEM INFORMATION CHANGE INDICATION with the BCCH modification. SS waits for 5s to ensure UE reads all the SIB information.

UE performs cell reselection to higher priority cell 4 since priority is now assigned to this cell in SIB TYPE 19. UE sends a CELL UPDATE with cause: cell reselection. SS responds with CELL UPDATE CONFIRM. SS releases the RRC connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		

1	←	SYSTEM INFORMATION BLOCK TYPE 19	SS transmits MIB with the "MIB Value Tag" IE different from the original setting and the SIB TYPE 19 with cell 4 as the higher priority cell and cell 1 as the lower priority cell (See specific message contents).
2	←	SYSTEM INFORMATION CHANGE INDICATION	SS notifies the UE by sending a SYSTEM INFORMATION CHANGE INDICATION with the BCCH modification (See specific message contents) and waits for 5s for UE to read all SIB information.
3	SS		SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.53.
4	UE		UE does not perform cell reselection to cell 4 although it fulfils the higher priority cell reselection criteria, since no priority is assigned to this cell in SIB TYPE 19.
5	←	SYSTEM INFORMATION BLOCK TYPE 19	SS transmits MIB with the "MIB Value Tag" IE different from the original setting and the SIB TYPE 19 with cell 4 as the higher priority cell and cell 1 as the lower priority cell (See specific message contents).
6	←	SYSTEM INFORMATION CHANGE INDICATION	SS notifies the UE by sending a SYSTEM INFORMATION CHANGE INDICATION with the BCCH modification (See specific message contents) and waits for 5s for UE to read all SIB information.
7	→	CELL UPDATE	UE performs cell reselection to Higher Priority cell 4 and sends CELL UPDATE on the new serving cell 4 and value "cell reselection" shall be indicated in IE "Cell update cause"
8	←	CELL UPDATE CONFIRM	
9	←	RRC CONNECTION RELEASE	SS releases the RRC connection.
10	→	RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents

The contents of the SYSTEM INFORMATION BLOCK TYPE 19 message in this test case is identical to TS 34.108 clause 6.1.0b, with the following exceptions:

SYSTEM INFORMATION BLOCK TYPE 19 (Step 1)

Information Element	Value/remark	Version
SysInfoType19 ::= SEQUENCE {		REL-8 or later
utra-PriorityInfoList ::= SEQUENCE {		
utra-ServingCell ::= SEQUENCE {		
Priority	[4]	
s-PrioritySearch1	[8 (16 dB)]	
s-PrioritySearch2	Not present	
threshServingLow	[10 (20 dB)]	
}		
utran-FDD-FrequencyList		
uarfcn	Same downlink uarfcn as used for cell 5	
priority	[5]	
threshXhigh	[5 (10 dB)]	
threshXlow	[1 (2 dB)]	
qQualMinFDD	-24 dB	
qRxLevMinFDD	-81 dBm	
utran-TDD-FrequencyList	Not present	
}		
gsm-PriorityInfoList	Not present	
eutra-FrequencyAndPriorityInfoList ::= SEQUENCE (SIZE (1..maxNumEUTRAFreqs) OF SEQUENCE {	Not present	

SYSTEM INFORMATION BLOCK TYPE 19 (Step 5)

Information Element	Value/remark	Version
SysInfoType19 ::= SEQUENCE {		REL-8 or later
utra-PriorityInfoList ::= SEQUENCE {		
utra-ServingCell ::= SEQUENCE {		
Priority	[4]	
s-PrioritySearch1	[8 (16 dB)]	
s-PrioritySearch2	Not present	
threshServingLow	[10 (20 dB)]	
}		
utran-FDD-FrequencyList		
uarfcn	Same downlink uarfcn as used for cell 4	
priority	[5]	
threshXhigh	[5 (10 dB)]	
threshXlow	[1 (2 dB)]	
qQualMinFDD	-24 dB	
qRxLevMinFDD	-81 dBm	
utran-TDD-FrequencyList	Not present	
}		
gsm-PriorityInfoList	Not present	
eutra-FrequencyAndPriorityInfoList ::= SEQUENCE (SIZE (1..maxNumEUTRAFreqs) OF SEQUENCE {	Not present	

SYSTEM INFORMATION CHANGE INDICATION (Step 2, Step 6)

Information Element	Value/remark
Message Type	
Paging record list	Not Present
BCCH modification info	
MIB Value Tag	Set to (Current MIB value tag + 1)
BCCH Modification time	Not Present

8.3.1.53.5 Test requirements

1) At step 4, UE does not perform cell reselection to cell 4, as no priority is assigned to this cell in SIB TYPE 19 at step 1.

2) At step 7, UE reselects to higher priority cell 4, as priority is now assigned to this cell and sends a CELL UPDATE with cause: cell reselection.

8.3.1.54 Cell Update: Absolute priority based cell reselection when more than one cell meets the criterion.

8.3.1.54.1 Definition and applicability

All UEs which support FDD and Rel 8.

8.3.1.54.2 Conformance requirement

5.2.6.1.2a Measurement rules for inter-frequency and inter-RAT cell reselection when absolute priorities are used

…

If the UE has received absolute priority information for inter-frequency layers, the UE shall follow these rules:

- The UE shall perform measurements of inter-frequency layers with a priority higher than the priority of the current serving layer.

NOTE: The rate of these measurements may vary depending on whether Srxlev and Squal of the serving cell are above or below $S_{prioritysearch1}$ and $S_{prioritysearch2}$. This is specified in [10].

…

- For inter-frequency layers with a priority equal or lower than the priority of the current serving layer:

- If $Srxlev_{\mathbf{ServingCell}} > S_{prioritysearch1}$ and $Squal_{\mathbf{ServingCell}} > S_{prioritysearch2}$ the UE may choose not to perform measurements of inter-frequency layers of equal or lower priority.

- If $Srxlev_{\mathbf{ServingCell}} <= S_{prioritysearch1}$ or $Squal_{\mathbf{ServingCell}} <= S_{prioritysearch2}$ the UE shall perform measurements of inter-frequency layers of equal or lower priority.

- The UE shall not perform measurements of inter-frequency layers for which the UE has no absolute priority.

…

5.2.6.1.4a Absolute priority based criteria for inter-frequency and inter-RAT cell reselection

Absolute priorities of different absolute priority layers may be provided to the UE. The following cell reselection criteria are used for inter-frequency cells if absolute priority information for inter-frequency is available to the UE, and inter-RAT cells if absolute priority information for inter-RAT is available to the UE.
If System Information Block 18 with UTRAN information is provided then the UE shall apply the inter-frequency priority rules below only to UTRAN cells of the selected PLMN or equivalent PLMNs. If System Information Block 18 is not provided, or is provided but contains no information for UTRAN, then the rules below apply for the entire UTRAN RAT.
…
If priority information is provided for any inter-frequency layers, cells belonging to inter-frequency layers for which no priority or no threshold is assigned shall not be considered for reselection.
…

If none of the inter-frequency layers in UTRAN are provided with both priority and threshold parameters, the cell reselection criteria in subclause 5.2.6.1.4 shall apply for inter-frequency layers in UTRAN.

…
If both criteria in subclause 5.2.6.1.4 and criteria in subclause 5.2.6.1.4a are simultaneously fulfilled, the order in which the reselection criteria are evaluated is left to UE implementation.
...

The UE may apply either priorities broadcast in system information or priorities received through dedicated signalling. The rules regarding which set of priorities shall apply are defined in [4]. UE specific priorities are only valid in the RPLMN, and shall be cleared when the validity time of the UE specific priorities expires, or when leaving the RPLMN. UE specific priorities are not applied in camped on any cell state.
…
The following definitions apply for the layers for which $Thresh_{x,high2}$ or $Thresh_{x,low2}$ are not provided:
- Criterion 1: the $Srxlev_{nonServingCell,x}$ of a cell on an evaluated higher absolute priority layer is greater than $Thresh_{x,high}$ during a time interval Treselection;
- Criterion 2: $Srxlev_{ServingCell} < Thresh_{serving,low}$ or $Squal_{ServingCell} < 0$ and the $Srxlev_{nonServingCell,x}$ of a inter-frequency cell on an evaluated equal absolute priority layer is greater than $Thresh_{x,low}$ during a time interval Treselection;
- Criterion 3: $Srxlev_{ServingCell} < Thresh_{serving,low}$ or $Squal_{ServingCell} < 0$ and the $Srxlev_{nonServingCell,x}$ of a cell on an evaluated lower absolute priority layer is greater than $Thresh_{x,low}$ during a time interval Treselection;
The following definitions apply for the layers for which both $Thresh_{x,high2}$ and $Thresh_{x,low2}$ are provided:
- Criterion 4: the $Squal_{nonServingCell,x}$ of a cell on an evaluated higher absolute priority layer is greater than $Thresh_{x,high2}$ during a time interval Treselection;
- Criterion 5: $Squal_{ServingCell} < Thresh_{serving,low2}$ and the $Squal_{nonServingCell,x}$ of a cell on an evaluated lower absolute priority layer is greater than $Thresh_{x,low2}$ during a time interval Treselection;

Cell reselection to a cell on a higher absolute priority layer than the camped frequency shall be performed if criterion 1 or 4 is fulfilled.
Cell reselection to an inter-frequency cell on an equal absolute priority layer to the camped frequency shall be performed if criterion 2 is fulfilled.
Cell reselection to a cell on a lower absolute priority layer than the camped frequency shall be performed if criterion 3 or 5 is fulfilled.

If more than one cell meets the above criteria, the UE shall reselect the cell with the highest $Srxlev_{nonServingCell,x}$ among the cells meeting the criteria on the highest absolute priority layer.
The UE shall not perform cell reselection to cells for which the cell selection criterion S is not fulfilled.
The UE shall not perform cell reselection until more than 1 second has elapsed since the UE camped on the current serving cell.
The UE should not perform cell reselection while the UE has an allocated common E-DCH resource.
For UE in RRC connected mode states CELL_PCH or URA_PCH the interval $Treselection_{s,PCH}$ applies, if provided in SIB4 (see [4]), while for UE in RRC connected mode state CELL_FACH the interval $Treselection_{s,FACH}$ applies, if provided in SIB4 (see [4]).
In all the above criteria the values of $Treselection_s$, $Treselection_{s,PCH}$ or $Treselection_{s,FACH}$ apply for Treselection and are scaled according to the UE mobility state and target RAT, as specified in 5.2.6.1.1a.

8.6.7.3a UTRA priority info list

If the IE "UTRA priority info list" is received in System Information Block Type 19, the UE shall:

1> if the value of the IE "Priority status" in the variable PRIORITY_INFO_LIST equals "dedicated_priority":

2> store the value of the IEs "$S_{prioritysearch1}$", "$S_{prioritysearch2}$", "$Thresh_{serving,low}$" and "$Thresh_{serving,low2}$" in the IE "UTRA Serving Cell" in the variable PRIORITY_INFO_LIST;

2> if any of the values in any of the occurrences of the IE "Frequency List" in any occurrence of the IE "Priority Info List" within the variable PRIORITY_INFO_LIST is the frequency of the serving cell:

3> store the value of the IE "priority" in the IE "UTRA Serving Cell" in the variable PRIORITY_INFO_LIST.

2> otherwise:

3> clear the value of the IE "priority" in the IE "UTRA Serving Cell" in the variable PRIORITY_INFO_LIST.

2> for each occurrence of the IE "UTRAN FDD Frequencies":

3> if the value of the IE "UARFCN" exists in the list of UTRA FDD priorities in the PRIORITY_INFO_LIST then, in the occurrence of IE "Frequency List" within the variable PRIORITY_INFO_LIST with that value of the IE "UARFCN":

4> store the value of the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$", "QqualminFDD" and "QrxlevminFDD".

2> for each occurrence of the IE "UTRAN TDD Frequencies":

3> if the value of the IE "UARFCN" exists in the list of UTRA TDD priorities in the PRIORITY_INFO_LIST then, in the occurrence of IE "Frequency List" within the variable PRIORITY_INFO_LIST with that value of the IE "UARFCN":

4> store the value of the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$" and "QrxlevminTDD".

1> otherwise:

2> update the PRIORITY_INFO_LIST IE "Priority status" to cause "sys_info_priority".

2> store information in the IE "UTRA Serving Cell" in the IE "UTRA Serving Cell" within the variable PRIORITY_INFO_LIST;

2> for each occurrence of the IE "UTRAN FDD Frequencies":

3> if an entry already exists in the IE "Priority Info List" in the variable PRIORITY_INFO_LIST with the same priority value as indicated in the IE "priority" and has the CHOICE "Radio Access Technology" set to "UTRA FDD":

4> create a new entry in the IE "Frequency List" in that occurrence of IE "Priority Info List", and store the value of "UARFCN" in the IE "UARFCN" in this occurrence of the IE "Frequency List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$", "QqualminFDD" and "QrxlevminFDD".

3> otherwise:

4> create a new entry in the IE "Priority Info List" and store the value of "priority" in the IE "priority" in this occurrence of the IE "Priority Info List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> set the CHOICE "Radio Access Technology" to "UTRA FDD" and store the value of "UARFCN" in the IE "UARFCN" in the first occurrence of the IE "Frequency List";

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$", "QqualminFDD" and "QrxlevminFDD" in that occurrence of the IE "Frequency List".

2> for each occurrence of the IE "UTRAN TDD Frequencies":

3> if an entry already exists in the IE "Priority Info List" in the variable PRIORITY_INFO_LIST with the same priority value as indicated in the IE "priority" and has the CHOICE "Radio Access Technology" set to "UTRA TDD":

4> create a new entry in the IE "Frequency List" in that occurrence of IE "Priority Info List", and store the value of "UARFCN" in the IE "UARFCN" in this occurrence of the IE "Frequency List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> store the IEs "$Thresh_{x, high}$", "$Thresh_{x, low}$" and "QrxlevminTDD".

3> otherwise:

4> create a new entry in the IE "Priority Info List" and store the value of "priority" in the IE "priority" in this occurrence of the IE "Priority Info List" within the variable PRIORITY_INFO_LIST, and in that new entry:

5> set the CHOICE "Radio Access Technology" to "UTRA TDD" and store the value of "UARFCN" in the IE "UARFCN" in the first occurrence of the IE "Frequency List";

5> store the IEs "$Thresh_{x,high}$", "$Thresh_{x,low}$" and "QrxlevminTDD" in that occurrence of the IE "Frequency List".

References

1. TS 25.304, 5.2.6.1.2a
2. TS 25.304, 5.2.6.1.4a
3. TS 25.331, 8.6.7.3a

8.3.1.54.3 Test purpose

To confirm that if more than one cell meets the absolute priority based cell reselection criteria, the UE shall reselect the cell with the highest $Srxlev_{nonServingCell,x}$ among the cells meeting the criteria on the highest absolute priority layer.

8.3.1.54.4 Method of test

Initial conditions

System Simulator:

- 3 cells Cell 1, Cell 4 and Cell 5
- Cell 1 is the active cell with SS downlink transmission power settings according to "T0" in table 8.3.1.54 below.
- All cells to be configured to transmit SIB 19 with default contents as in 34.108.

System Information Block type 11

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present

User Equipment:

- UE supports FDD and Rel-8 RAT priority cell reselection.
- UE is brought to CELL_FACH state on Cell 1 with "T0" in table 8.3.1.54 below.
- UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD.

Test Procedure

Table 8.3.1.54

Parameter	Unit	Cell 1		Cell 4		Cell 5	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		High Range Test Frequency		High Range Test Frequency	
CPICH Ec	dBm/3.84MHz	-60	-60	-90	-65	-90	-70
Srxlev*	dB	21	21	-9	16	-9	11
qRxLevMinFDD	dB	-81		-81		-81	
Note-Srxlev is calculated in UE. During T1, cell 4 and cell 5 meet the higher priority cell reselection criterion.							

SS transmits MIB with the "MIB Value Tag" IE different from the original

setting and the SIB TYPE 19 with cell 4 and cell 5 as the higher priority cells and cell 1 as the lower priority cell (See specific message contents). SS notifies the UE by sending a SYSTEM INFORMATION CHANGE INDICATION with the BCCH modification. SS waits for 5s to ensure UE reads all the SIB information.

SS configures the downlink transmission power settings according to columns "T1" from table 8.3.1.x. UE now performs cell reselection to cell 4 as Srxlev of cell 4 is higher than that of cell 5 even though both the cells fulfil the absolute priority cell reselection criteria defined in SIB TYPE 19. UE sends a CELL UPDATE with cause: cell reselection. SS responds with CELL UPDATE CONFIRM. SS releases the RRC connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	SYSTEM INFORMATION BLOCK TYPE 19	SS transmits MIB with the "MIB Value Tag" IE different from the original setting and the SIB TYPE 19 with cell 4 and cell 5 as the higher priority cells and cell 1 as the lower priority cell (See specific message contents).
2		←	SYSTEM INFORMATION CHANGE INDICATION	SS notifies the UE by sending a SYSTEM INFORMATION CHANGE INDICATION with the BCCH modification (See specific message contents) and waits for 5s for UE to read all SIB information.
3		SS		SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.54.
4		→	CELL UPDATE	UE performs cell reselection to Higher Priority cell 4 and sends CELL UPDATE on the new serving cell 4 and value "cell reselection" shall be indicated in IE "Cell updatecause"
5		←	CELL UPDATE CONFIRM	
6		←	RRC CONNECTION RELEASE	SS releases the RRC connection.
7		→	RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents

The contents of the SYSTEM INFORMATION BLOCK TYPE 19 message in this test case is identical to TS 34.108 clause 6.1.0b, with the following exceptions:

SYSTEM INFORMATION BLOCK TYPE 19 (step 1)

Information Element	Value/remark	Version
SysInfoType19		REL-8 or later
utra-PriorityInfoList		
utra-ServingCell		
Priority	[4]	
s-PrioritySearch1	[8 (16 dB)]	
s-PrioritySearch2	Not present	
threshServingLow	[10 (20 dB)]	
utran-FDD-FrequencyList		
uarfcn	Same downlink uarfcn as used for cell 4	
priority	[5]	
threshXhigh	[5 (10 dB)]	
threshXlow	[1 (2 dB)]	
qQualMinFDD	-24 dB	
qRxLevMinFDD	-81 dBm	
uarfcn	Same downlink uarfcn as used for cell 5	
priority	[5]	
threshXhigh	[5 (10 dB)]	
threshXlow	[1 (2 dB)]	
qQualMinFDD	-24 dB	
qRxLevMinFDD	-81 dBm	
utran-TDD-FrequencyList	Not present	
gsm-PriorityInfoList	Not present	
eutra-FrequencyAndPriorityInfoList	Not present	

SYSTEM INFORMATION CHANGE INDICATION (Step 2)

Information Element	Value/remark
Message Type	
Paging record list	Not Present
BCCH modification info	
MIB Value Tag	Set to (Current MIB value tag + 1)
BCCH Modification time	Not Present

8.3.1.54.5 Test requirements

1) At step 4, UE reselects to higher priority cell 4, and sends a CELL UPDATE with cause: cell reselection.

8.3.2 URA Update

8.3.2.1 URA Update: Change of URA

8.3.2.1.1 Definition

-

8.3.2.1.2 Conformance requirement

A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

1> URA reselection:

2> if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or

2> if the list of URA identities in system information block type 2 is empty; or

2> if the system information block type 2 can not be found:

…

3> perform URA update using the cause "change of URA".

When initiating the URA update procedure, the UE shall:

1> stop timer T305;

1> set the variables PROTOCOL_ERROR_INDICATOR, FAILURE_INDICATOR, UNSUPPORTED_CONFIGURATION and INVALID_CONFIGURATION to FALSE;

1> move to CELL_FACH state, if not already in that state;

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a URA update procedure:

2> set the contents of the URA UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the URA UPDATE message for transmission on the uplink CCCH.

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

In case of URA update procedure the UE shall transmit a URA UPDATE message.

The UE shall set the IEs in the URA UPDATE message as follows:

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

1> set the IE "URA update cause" corresponding to which cause as specified in TS 25.331 subclause 8.3.1.2 that is valid when the URA UPDATE message is submitted to lower layers for transmission;

2> if the value of the variable PROTOCOL_ERROR_INDICATOR is TRUE:

…

2> if the value of the variable PROTOCOL_ERROR_INDICATOR is FALSE:

3> if the value of the variable INVALID_CONFIGURATION is TRUE:

…

3> if the value of the variable INVALID_CONFIGURATION is FALSE:

4> set the IE "Protocol error indicator" to FALSE.

If the URA UPDATE CONFIRM message:

- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New U-RNTI"; and
- does not include the IE "New C-RNTI":

the UE shall:

1> transmit no response message.

…

If any or several of the following conditions are true:

…

- reselection to another UTRA cell (including the previously serving cell) before completion of the cell update or URA update procedure;

the UE shall:

…

1> check whether it is still in "in service area" (see TS 25.331 subclause 8.5.5.2);

…

1> in case of a URA update procedure:

2> clear any entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.

If the UE detects "in service area" if it has not entered idle mode, and:

1> if V302 is equal to or smaller than N302, the UE shall:

2> if the UE performed cell re-selection:

3> delete its C-RNTI.

…

2> in case of a URA update procedure:

3> set the contents of the URA UPDATE message according to TS 25.331 subclauses 8.3.1.3 and 8.5.10;

3> if a URA UPDATE CONFIRM message was received and caused the IE "Reconfiguration" in the variable CIPHERING_STATUS to be set to TRUE and/or the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:

…

3> submit the URA UPDATE message for transmission on the uplink CCCH.

…

The UE shall:

1> if the IE "URA identity" is included in a received message:

2> if the IE "RRC State Indicator" is included and set to "URA_PCH":

3> store this URA identity in the variable URA_IDENTITY;

3> after sending a possible message to UTRAN and entering URA_PCH state as specified elsewhere, read system information block type 2 in the selected cell;

3> if the stored URA identity in the variable URA_IDENTITY is not included in the list of URA identities in System Information Block type 2 in the selected cell, the list of URA identities in system information block type 2 is empty or if the system information block type 2 can not be found, a confirmation error of URA identity list has occurred:

4> if no URA update procedure is ongoing:

…

4> if a URA update procedure is ongoing:

5> take actions as specified in TS 25.331 subclause 8.3.1.10.

If the URA UPDATE CONFIRM message causes a confirmation error of URA identity list as specified in TS 25.331 subclause 8.6.2.1 the UE shall:

1> check the value of V302; and

1> if V302 is smaller or equal than N302:

…

2> set the IEs in the URA UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the URA UPDATE message for transmission on the uplink CCCH;

…

Reference

3GPP TS 25.331 clause 8.3.1.2, 8.3.1.12, 8.6.2.1

8.3.2.1.3 Test purpose

1. To confirm that the UE executes an URA update procedure after the successful change of URA.
2. To confirm that the UE performs an URA update procedure after it detects that SIB 2 is not broadcasted.
3. To confirm that the UE performs an URA update procedure after it detects a confirmation error of URA identity list.

8.3.2.1.4 Method of test

Initial Condition

System Simulator: 2 cells: The URA-ID and transmission power for each cell is shown in Table 8.3.2.1, where the initial condition is shown in column "T0".

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, with URA-ID 1 from the list of URA-ID in cell 1.

Test Procedure

Parameter	Unit	Cell 1								Cell 2							
		T0	T1	T2	T3	T4	T5	T6	T7	T0	T1	T2	T3	T4	T5	T6	T7
UTRA RF Channel Number		Ch. 1								Ch. 1							
CPICH Ec	dBm/3.84MHz	-60	-69		-60	-69	-60		-69	-69	-60		-69	-60	-69		-60
P-CCPCH RSCP (TDD)	dBm	-60	-69		-60	-69	-60		-69	-69	-60		-69	-60	-69		-60
URA ID		URA-ID 1	URA-ID 2							URA-ID 1,3 and 4						no SIB2	

The test begins with the downlink power transmission of both cells set according to 'T0' column in table 8.3.2.1. The UE is in the URA_PCH state and assigned with only 1 URA identity in cell 1: URA-ID 1. The SS then adjusts the transmission power again according to the 'T1' column. This is expected to cause the UE to perform a cell reselection to cell 2. Since URA-ID 1 is also broadcasted in cell 2, the UE shall not perform any URA update procedure due to the change of URA. Starting from time 'T2', SS modifies the system information in cell 1, so that URA-ID 2 is the only URA identity in that cell. Next SS adjusts the transmission power according to 'T3' column. UE shall perform a cell reselection to cell 1 and when the UE finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it moves to CELL_FACH state and transmits a URA UPDATE message on the uplink CCCH. After the SS receives this message, it transmits a URA UPDATE CONFIRM message, which includes the IEs "RRC State Indicator" and IE "URA-ID" to the UE on the downlink CCCH. The IE "RRC State Indicator" is set to "URA_PCH". UE returns to URA_PCH state in cell 1 without sending any uplink response message. Next SS adjusts the transmission power according to 'T4' column. UE shall re-select to cell 2 and transmit a URA UPDATE message to SS. However, SS do not acknowledge but adjusts the transmission power according to 'T5' column. UE shall perform cell re-selection to cell 1 and then send a URA UPDATE message to SS. SS shall transmit URA UPDATE CONFIRM message to UE on the downlink CCCH. Starting from time 'T6', SS modifies the system information in cell 2, so that no SIB 2 is sent in that

cell. Next the SS adjusts the transmission power according to the 'T7' column. The UE shall re-select to cell 2 and send a URA UPDATE message since no SIB2 is broadcasted in this cell. When the UE receives a URA UPDATE CONFIRM message including a URA identity, the UE will again send a URA UPDATE message. When receiving this last message, the SS shall transmit RRC Connection Release message on downlink CCCH to release the RRC connection.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is updated with only 1 URA identity carried currently by cell 1. The starting state of the UE is URA_PCH
2				SS set the power transmission and system information of all cells according to column 'T1' of table 8.3.2.1.
3				UE shall perform a cell reselection but shall not transmit URA UPDATE message with the update cause of "change of URA".
3a				Starting from time 'T2', SS modifies the system information in cell 1, so that URA-ID 2 is the only URA identity in that cell
4				SS set the power transmission and system information of all cells according to column 'T3' of table 8.3.2.1.
5	→		URA UPDATE	The UE shall perform a cell reselection first and when it finds that its current URA-ID 1 is not in the newly broadcasted list of URA-IDs, it shall then transmit this message and set value "change of URA" into IE "URA update cause".
6	←		URA UPDATE CONFIRM	Message comprises IE "RRC State Indicator" set to "URA_PCH", and also IE "URA Identity" equal to "URA-ID 2".
7				SS set the power transmission and system information of all cells according to column 'T4' of table 8.3.2.1.
8	→		URA UPDATE	
9				SS do not respond to the URA UPDATE message from UE and set the power transmission and system information of all cells according to column 'T5' of table 8.3.2.1.
10	→		URA UPDATE	
11	←		URA UPDATE CONFIRM	
11a				Starting from time 'T6', SS modifies the system information in cell 2, so that no SIB 2 is sent in that cell.
12				SS set the power transmission and system information of all cells according to column 'T7' of table 8.3.2.1.
13	→		URA UPDATE	The UE shall perform a cell reselection first and when it finds that no URA-ID is broadcasted in this cell, it shall then transmit this message and set value "change of URA" into IE "URA update cause".

Step	Direction		Message	Comment
	UE	SS		
14	←		URA UPDATE CONFIRM	Message comprises IE "RRC State Indicator" set to "URA_PCH", and also IE "URA Identity" equals to "URA-ID 2".
15	→		URA UPDATE	
16	←		RRC CONNECTION RELEASE	This message is sent on CCCH.
17	→		Void	
18				UE enters idle mode

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 2

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exceptions.

Cell 1, time T0-T1:

Information Element	Value/remark
- URA identity list - URA identity	 0000 0000 0000 0001B

Cell 2, time T0-T5:

Information Element	Value/remark
- URA identity list - URA identity - URA identity - URA identity	 0000 0000 0000 0011B 0000 0000 0000 0001B 0000 0000 0000 0100B

Cell 1, time T2-T7 (step 3a):

Information Element	Value/remark
- URA identity list - URA identity	 0000 0000 0000 0010B

Cell 2, time T6-T7 (step 11a):

No SYSTEM INFORMATION BLOCK TYPE 2 is broadcasted in cell 2 during this time period.

URA UPDATE (Step 5, 8, 10, 13, and 15)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI URA Update Cause	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001' Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Step 6, 11 and 14)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
URA identity	URA-ID 2

8.3.2.1.5 Test requirement

After step 2 the UE shall not transmit a URA UPDATE message with update cause "change of URA".

After step 4 the UE shall find that URA-ID 2 is not in its maintained list of URA-IDs. After cell reselection, the UE shall move to CELL_FACH state and transmit a URA UPDATE message setting value "change of URA" into IE "URA update cause".

After step 7 the UE shall find that URA-ID 1 is not in its maintained list of URA-IDs. After cell reselection, the UE shall move to CELL_FACH state and a transmit URA UPDATE message setting value "change of URA" into IE "URA update cause".

After step 9 the UE shall find the new cell and transmit a URA UPDATE message setting value "change of URA" into IE "URA update cause".

After step 12 the UE shall find that no URA-ID is broadcasted in the cell, move to CELL_FACH state and transmit a URA UPDATE message setting the update cause to "change of URA".

After step 14 the UE shall find that no URA-ID is broadcasted in the cell and transmit a URA UPDATE message setting the update cause to "change of URA".

8.3.2.1a URA Update: Change of URA (Cells belong to different frequency bands)

8.3.2.1a.1 Definition

This test case is identical to test case 8.3.2.1 except that the cells belong to different frequency bands.

NOTE: The test case 8.3.2.1 is an intra frequency test.

8.3.2.1a.2 Conformance requirement

Same conformance requirement as in clause 8.3.2.1.2

8.3.2.1a.3 Test purpose

Same test purpose as in clause 8.3.2.1.3 except that the cells belong to different frequency bands

8.3.2.1a.4 Method of test

Initial Condition

Same initial conditions as in clause 8.3.2.1.4 except, Cell 2 is mapped to cell 4 (inter frequency) of 34.108 clause 6.1 and both cells belong to different frequency bands.

System Information Block type 3

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/Remarks
-Qualmin	-16dB

Related ICS/IXIT statement(s)

- UE supports multiple bands simultaneously yes/no

Test Procedure

Same test procedure as in clause 8.3.2.1.4 with the following exception

After step 8, SS shall send URA UPDATE CONFIRM message to the UE.

NOTE: If the UE supports more than 2 frequency bands, the test may be executed for various band combinations.

Expected sequence

Same expected sequence as in clause 8.3.2.1.4 with the following additional / modified test steps

Step	Direction		Message	Comment
	UE	SS		
8a	←		URA UPDATE CONFIRM	
9				SS sets the power transmission and system information of all cells according to column 'T5' of table 8.3.2.1.

Specific Message Contents

Same specific message contents as in clause 8.3.2.1.4 with the following exceptions for the additional test steps:

URA UPDATE CONFIRM (Step 8a)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
URA identity	URA-ID 1

8.3.2.1a.5 Test requirement

Same test requirement as in clause 8.3.2.1.5.

8.3.2.1b URA Update: Change of URA (Cells belong to different frequency bands for LCR TDD)

8.3.2.1b.1 Definition

This test case is identical to test case 8.3.2.1 except that the cells belong to different frequency bands.

NOTE: The test case 8.3.2.1 is an intra frequency test.

8.3.2.1b.2 Conformance requirement

Same conformance requirement as in clause 8.3.2.1.2

8.3.2.1b.3 Test purpose

Same test purpose as in clause 8.3.2.1.3 except that the cells belong to different frequency bands

8.3.2.1b.4 Method of test

Initial Condition

Same initial conditions as in clause 8.3.2.1.4 except, Cell 2 is mapped to cell 4 (inter frequency) of 34.108 clause 6.1 and both cells belong to different frequency bands.

System Information Block type 3

Use the same message type found in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/Remarks
-Qrxlevmin	-115dBm

Related ICS/IXIT statement(s)

- UE supports multiple bands simultaneously yes/no

Test Procedure

Same test procedure as in clause 8.3.2.1.4 with the following exception

After step 8, SS shall send URA UPDATE CONFIRM message to the UE.

NOTE: If the UE supports more than 2 frequency bands, the test may be executed for various band combinations.

Expected sequence

Same expected sequence as in clause 8.3.2.1.4 with the following additional / modified test steps

Step	Direction		Message	Comment
	UE	SS		
8a	←		URA UPDATE CONFIRM	
9				SS sets the power transmission and system information of all cells according to column 'T5' of table 8.3.2.1.

Specific Message Contents

Same specific message contents as in clause 8.3.2.1.4

URA UPDATE CONFIRM (Step 8a)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
URA identity	URA-ID 1

8.3.2.1b.5 Test requirement

Same as in clause 8.3.2.1.5.

8.3.2.2 URA Update: Periodical URA update and Reception of Invalid message

8.3.2.2.1 Definition

8.3.2.2.2 Conformance requirement

A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

1> URA reselection:

…

1> Periodic URA update:

2> if the criteria for performing URA update with the causes as specified above in the current subclause are not met; and

2> if the timer T305 expires while the UE is in the service area; and

2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":

3> perform URA update using the cause "periodic URA update".

…

If the UE receives an URA UPDATE CONFIRM message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

1> If V302 is equal to or smaller than N302, the UE shall:

2> set the variable PROTOCOL_ERROR_INDICATOR to TRUE;

…

2> in case of a URA update procedure:

3> set the contents of the URA UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the URA UPDATE message for transmission on the uplink CCCH.

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302, the UE shall:

…

2> release all its radio resources;

2> enter idle mode;

2> Other actions the UE shall perform when entering idle mode from connected mode are specified in TS 25.331 subclause 8.5.2;

2> the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1.2, 8.3.1.7, 8.3.1.11

8.3.2.2.3 Test purpose

1. To confirm that the UE executes a URA update procedure after the expiry of timer T305.
2. To verify that the UE handles an invalid URA UPDATE CONFIRM message correctly when executing the URA update procedure.

8.3.2.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH state. When the UE detects the expiry of timer T305, set according to the value specified in system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. The message shall indicate the cause to be "periodic URA update" in IE "URA update cause". SS replies with an invalid URA UPDATE CONFIRM message sent on downlink DCCH, and check to see if the UE handles this event properly. The UE shall attempt to retransmit the identical URA UPDATE message. After the SS receives the second URA UPDATE message, it transmits a correct URA UPDATE CONFIRM message to the UE on the downlink CCCH. The UE then returns to URA_PCH state. SS calls for generic procedure C.5 to check that UE is in URA_PCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state. SS wait until T305 timer has expired.
2	→		URA UPDATE	UE shall transmit this message and set value "periodic URA update" into IE "URA update cause".
3	←		URA UPDATE CONFIRM	See specific message content.
4	→		URA UPDATE	UE shall not return to idle mode immediately, but attempts to re-transmit this message.
5	←		URA UPDATE CONFIRM	
6			Void	
7	←→		CALL C.5	If the test result of C.5 indicates that UE is in URA_PCH state, the test passes, otherwise it fails.

Specific Message Contents

URA UPDATE (Step 2)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'Periodic URA update'

URA UPDATE CONFIRM (Step 3)

Use the URA UPDATE CONFIRM message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Critical extensions	'FF'H

URA UPDATE (Step 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
RRC Transaction identifier	Check to see if set to the value given in URA UPDATE CONFIRM message in step 3.
URA Update Cause	Check to see if set to 'Periodic URA update'
Protocol error indicator	TRUE
Protocol error information	
- Protocol error cause	Message extension not comprehended

URA UPDATE CONFIRM (Step 5)

Use the URA UPDATE CONFIRM message as defined in [9] TS 34.108 clause 9.

8.3.2.2.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, move to CELL_FACH state, and transmit a URA UPDATE message which sets the value "periodical cell update" into IE "URA update cause".

After step 3 the UE shall re-transmit URA UPDATE message with IE "Protocol error indicator" set to 'TRUE' and IE "Protocol error information" set to "Message extension not comprehended".

After step 5 the UE shall return to the URA_PCH state.

8.3.2.3 Void

8.3.2.4 URA Update: loss of service after expiry of timers T307 and T305

8.3.2.4.1 Definition

8.3.2.4.2 Conformance requirement

When the T305 expires and the UE detects that it is "out of service area" as specified in TS 25.331 subclause 8.5.5.1, the UE shall

1> start timer T307;

…

When the T307 expires, the UE shall:

1> move to idle mode;

1> release all dedicated resources;

1> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

1> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

1> clear the variable ESTABLISHED_RABS;

1> perform other actions when entering idle mode from connected mode as specified in TS 25.331 subclause 8.5.2;

1> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1.4.

8.3.2.4.3 Test purpose

1. To confirm that the UE moves to idle mode after the expiry of timer T307, following an expiry of timer T305 when it discovers that it is out of service area.

8.3.2.4.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.2.4

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Mid Range Test Frequency	
CPICH Ec	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.2.4 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in CELL_DCH state. The SS transmits UTRAN MOBILITY INFORMATION message to the UE to change the value of T305. The UE shall respond with UTRAN MOBILITY INFORMATION CONFIRM message. The UE transits to URA_PCH state using the generic procedure P18 in TS 34.108 clause 7.4. The content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. The SS waits for reception of a periodical URA update in order to know the timing of the T305 in the UE. The SS replies to the received URA UPDATE message with an URA UPDATE CONFIRM message on the downlink CCCH. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.4 so that S<0. When the UE detects the expiry of periodic URA updating timer T305 according to the system information, the UE detects that it is out of service area. After the expiry of timer T307, the UE moves to the idle state. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.2.4 so that S>0. SS waits for 60s and then calls for generic procedure C.1 to check that UE is in idle mode state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0				Initially, the UE is in CELL_DCH state.
0a	←		UTRAN MOBILITY INFORMATION	Include new timers value (see specific message contents).
0b	→		UTRAN MOBILITY INFORMATION CONFIRM	
0c	←→		SS executes procedure P18 (clause 7.4.2.7.2) specified in TS 34.108.	Transit the UE to URA_PCH state. URA-ID 1 shall be in the list of URA-ID.
1			Void	
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		PAGING TYPE 1	Include IE "BCCH modification info"
1c	→		URA UPDATE	IE "URA update cause" shall be set to "periodical URA update".
1d	←		URA UPDATE CONFIRM	

Step	Direction		Message	Comment
	UE	SS		
2a				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.4 so that the UE detects that it is out of service area.
2b				SS waits (T305+T307) +10% for UE to enter idle mode.
3				Upon the expiry of timer T305, the UE shall search for cell to camp and triggers T307 timer. SS listens to the uplink CCCH to verify that URA UPDATE message is not transmitted.
4				After the expiry of timer T307, the UE enters idle state. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.2.4 so that the cell is suitable for camping. SS waits for 60s.
5	←→		CALL C.1	If the test result of C.1 indicates that UE is in idle mode state, the test passes, otherwise it fails.

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	A valid MIB value tag as defined in TS 25.331 that is different from the previous value.
Scheduling information - PLMN Value tag	- Scheduling info for System Information Type 1 A valid PLMN value tag as defined in TS 25.331 that is different from the previous value.
Scheduling information - Cell Value tag	- Scheduling info for System Information Type 3 A valid Cell value tag as defined in TS 25.331 that is different from the previous value.
Scheduling information - Cell Value tag	- Scheduling info for System Information Type 4 A valid Cell value tag as defined in TS 25.331 that is different from the previous value.

SYSTEM INFORMATION BLOCK TYPE 3 and 4 (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
Qrxlevmin	-70

PAGING TYPE 1 (Step 1b)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Paging record list	Not Present
BCCH modification info MIB Value tag	A valid Cell value tag as defined in TS 25.331 that is different from the previous value.
BCCH modification time	Not present

UTRAN MOBILITY INFORMATION (Step 0a)

Use the same message sub-type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
- T305	5 minutes

UTRAN MOBILITY INFORMATION CONFIRM (Step 0b)

Use the same message sub-type found in clause 9 of TS 34.108.

URA UPDATE (Step 1c)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to "periodical URA update"

8.3.2.4.5 Test requirement

After step 0a the UE shall respond with UTRAN MOBILITY INFORMATION CONFIRM message.

After step 2 the UE shall not transmit any URA UPDATE message on the uplink CCCH.

8.3.2.5 URA Update: Success after Confirmation error of URA-ID list

8.3.2.5.1 Definition

8.3.2.5.2 Conformance requirement

The UE shall:

1> if the IE "URA identity" is included in a received message:

2> if the IE "RRC State Indicator" is included and set to "URA_PCH":

3> store this URA identity in the variable URA_IDENTITY;

3> after sending a possible message to UTRAN and entering URA_PCH state as specified elsewhere, read system information block type 2 in the selected cell;

3> if the stored URA identity in the variable URA_IDENTITY is not included in the list of URA identities in System Information Block type 2 in the selected cell, the list of URA identities in system information block type 2 is empty or if the system information block type 2 can not be found, a confirmation error of URA identity list has occurred:

4> if no URA update procedure is ongoing:

…

4> if a URA update procedure is ongoing:

5> take actions as specified in TS 25.331 subclause 8.3.1.10.

If the URA UPDATE CONFIRM message causes a confirmation error of URA identity list as specified in TS 25.331 subclause 8.6.2.1 the UE shall:

1> check the value of V302; and

1> if V302 is smaller or equal than N302:

2> set the IEs in the URA UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the URA UPDATE message for transmission on the uplink CCCH;

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

…

Reference

3GPP TS 25.331 clause 8.3.1.10, 8.6.2.1.

8.3.2.5.3 Test purpose

1. To confirm that the UE retries to perform the URA update procedure following a confirmation error of URA-ID list.

8.3.2.5.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

At the start of this test, the UE is brought to URA_PCH state and assigned a URA with URA-ID 1. When the UE detects the expiry of timer T305 according to the system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. The reason for performing URA updating shall be set to "periodic URA update" in IE "URA update cause". After the SS receives this message, it transmits a URA UPDATE CONFIRM message which includes the IE "RRC state indicator" set to "URA_PCH" and IE "URA identity" set to "URA-ID 2" to the UE on the downlink DCCH. The UE finds that the indicated URA-ID is not included in the list of URA-IDs broadcasted in system information block type 2, and then the UE shall retry to transmit a URA UPDATE message, with "change of URA" set in IE "URA update cause", for a confirmation error of URA-ID list. SS continue to send the same URA UPDATE CONFIRM message on the downlink DCCH until N302+1 URA UPDATE messages have been received. Then SS transmits a URA UPDATE CONFIRM message to the UE which includes IE "URA Identity" set to "URA-ID 1" and IE "new U-RNTI" on the downlink DCCH. The UE shall find this URA-ID in its URA-ID list and transmits an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is URA_PCH state. SS initializes counter K to 0
2	→		URA UPDATE	This message shall contain value "periodic URA update" set in IE "URA update cause" after expiry of timer T305.
3			Void	
4	←		URA UPDATE CONFIRM	SS transmits this message, setting the value "URA-ID 2" to IE "URA Identity", and including “New U_RNTI”.
4a	→		UTRAN MOBILITY INFORMATION CONFIRM	
5	→		URA UPDATE	This message shall contain value "change of URA" set in IE "URA update cause"
6				SS increments K by 1. If K is not greater than N302, proceed to step 7. If K is greater than N302, SS proceeds to step 8.
7	←		URA UPDATE CONFIRM	SS transmits this message, setting the value "URA-ID 2" to IE "URA Identity"", and including “New U_RNTI”.. And then returns to step 4a.
8	←		URA UPDATE CONFIRM	SS transmits this message, setting IE "URA Identity" to "URA-ID 1". This message also comprises IE "New U-RNTI".
9	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

URA UPDATE (Step 2)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'Periodic URA update'

URA UPDATE CONFIRM (Step 4 &7)

Use the same message sub-type as specified in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
-SRNC Identity	'0000 0000 0001'
-S-RNTI	'0000 0000 0000 0000 0101'
New C-RNTI	‘1010 1010 1010 1010’ B
URA Identity	2

URA UPDATE (Step 5)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0101'
URA Update Cause	Check to see if set to 'URA update cause'

URA UPDATE CONFIRM (Step 8)

Use the same message sub-type as specified in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
-SRNC Identity	'0000 0000 0001'
-S-RNTI	'0000 0000 0000 0101 0101'
New C-RNTI	'1010 1010 1010 0000' B
URA Identity	1

UTRAN MOBILITY INFORMATION CONFIRM (Step 4a & 9)

Only the message type IE in this message is checked.

8.3.2.5.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, move to CELL_FACH state, transmit a URA UPDATE message on the uplink CCCH and set value "periodic URA update" into IE "URA update cause".

After step 4 the UE shall re-transmit a URA UPDATE message with IE "URA update cause" set to "change of URA" after it detects a confirmation error of URA-ID list for the URA-ID indicated in the URA UPDATE CONFIRM message. A total of (N302+1) URA UPDATE messages shall be received by the SS.

After step 8 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

8.3.2.6 URA Update: Failure (V302 is greater than N302: Confirmation error of URA-ID list)

8.3.2.6.1 Definition

8.3.2.6.2 Conformance requirement

The UE shall:

1> if the IE "URA identity" is included in a received message:

2> if the IE "RRC State Indicator" is included and set to "URA_PCH":

3> store this URA identity in the variable URA_IDENTITY;

3> after sending a possible message to UTRAN and entering URA_PCH state as specified elsewhere, read system information block type 2 in the selected cell;

3> if the stored URA identity in the variable URA_IDENTITY is not included in the list of URA identities in System Information Block type 2 in the selected cell, the list of URA identities in system information block type 2 is empty or if the system information block type 2 can not be found, a confirmation error of URA identity list has occurred:

4> if no URA update procedure is ongoing:

…

4> if a URA update procedure is ongoing:

5> take actions as specified in TS 25.331 subclause 8.3.1.10.

If the URA UPDATE CONFIRM message causes a confirmation error of URA identity list as specified in TS 25.331 subclause 8.6.2.1 the UE shall:

1> check the value of V302; and

1> if V302 is smaller or equal than N302:

2> set the IEs in the URA UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the URA UPDATE message for transmission on the uplink CCCH;

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

2> release all its radio resources;

2> enter idle mode;

2> perform the actions specified in TS 25.331 subclause 8.5.2 when entering idle mode from connected mode;

2> the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1.10, 8.6.2.1

8.3.2.6.3 Test purpose

1. To confirm that the UE make repeated attempts to perform the URA update procedure following a detection of a confirmation error of URA-ID list. It then moves to idle state when internal counter V302 is greater than N302.

8.3.2.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is originally in URA_PCH state updated with URA-ID 1. When the UE detects the expiry of timer T305 according to the system information, the UE shall move to CELL_FACH state and transmit a URA UPDATE message to the SS on the uplink CCCH. In this message, the value "periodic URA update" shall be set in IE "URA update cause". After the SS receives this message, it transmits a URA UPDATE CONFIRM message which includes the IE "RRC state indicator" set to "URA_PCH" and indicating the IE "URA Identity" to be "URA-ID 2" to the UE on the downlink CCCH. The UE finds that the indicated URA-ID is not included in the list of URA-IDs broadcasted. Then the UE shall retry to transmit a URA UPDATE message, with "change of URA" set in IE "URA update cause", for N302 times and each time the SS responds with the URA UPDATE CONFIRM message similar to the previous one on the downlink CCCH. After that, the UE shall enter idle state. SS waits for 5s and then calls for generic procedure C.1 to check that UE is in idle mode state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state at the start of the test. SS sets internal counter K to 0.
2	→		URA UPDATE	The message shall indicate "periodic URA update" in IE "URA update cause". This message is sent following the expiry of timer T305. SS increments counter K by 1.
3				SS increments K by 1.
4	←		URA UPDATE CONFIRM	The SS transmits this message and set IE "URA Identity" to "URA-ID 2".
5	→		URA UPDATE	The message shall indicate "change of URA" in IE "URA update cause". This message is sent following the expiry of timer T305. SS increments counter K by 1.
6	←		URA UPDATE CONFIRM	The SS transmits this message and set IE "URA Identity" to "URA-ID 2". When K is greater than N302 proceeds to step 7, else executes step 5.
7			Void	The UE shall enter idle state. SS waits for 5s.
8			Void	
9			Void	
10	←→		CALL C.1	If the test result of C.1 indicates that UE is in idle mode state, the test passes, otherwise it fails.

Specific Message Contents

URA UPDATE CONFIRM (Step 3)

Use the same message sub-type defined in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
URA Identity	2

8.3.2.6.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH, setting value "periodic URA update" in IE "URA update cause".

After step 6 and if K is not greater than N302, the UE shall retry to transmit a URA UPDATE message, setting value "periodic URA update" in IE "URA update cause" after it detects the confirmation error of URA-ID list for the URA-ID included in the URA UPDATE CONFIRM message.

After step 6 and if K is greater than N302, the UE shall stop transmitting URA UPDATE message and then enters idle state.

8.3.2.7 URA Update: Success after T302 timeout

8.3.2.7.1 Definition

8.3.2.7.2 Conformance requirement

If any or several of the following conditions are true:

- expiry of timer T302;

…

the UE shall:

1> stop T302 if it is running;

1> check whether it is still in "in service area";

1> in case of a URA update procedure:

2> clear any entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.

If the UE detects "in service area" if it has not entered idle mode, and:

1> if V302 is equal to or smaller than N302, the UE shall:

2> in case of a URA update procedure:

3> set the contents of the URA UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the URA UPDATE message for transmission on the uplink CCCH.

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302, the UE shall:

…

Reference

3GPP TS 25.331 clause 8.3.1.12.

8.3.2.7.3 Test purpose

1. To confirm that the UE attempts to repeat the URA update procedure upon the expiry of timer T302.

8.3.2.7.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH. When the UE detects the expiry of timer T305 according to the system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH, setting value "periodic URA update" into IE "URA update cause". The SS ignores this message. The UE shall then retry to transmit a URA UPDATE message after the expiry of timer T302, until a total of N302+1 URA UPDATE messages have been received by the SS. SS transmits a URA UPDATE CONFIRM message to the UE on the downlink CCCH to end the procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state at the beginning of test. SS initializes counter K to 0 SS waits for T305 to expire.
2	→		URA UPDATE	This message shall contain value "periodic URA update" in IE "URA update cause" sent upon the expiry of timer T305.
3				SS shall not reply. Increment K by 1.
4	→		URA UPDATE	This message shall contain value "periodic URA update" in IE "URA update cause" sent upon the expiry of timer T302.
5				SS shall not reply. SS increments K by 1. If K is not greater than N302, proceed to step 4. If K is greater than N302, SS proceeds to step 6.
6	←		URA UPDATE CONFIRM	
7	→		UTRAN MOBILITY INFORMATION CONFIRM	
8	←→		CALL C.5	If the test result of C.5 indicates that UE is in URA_PCH state, the test passes, otherwise it fails.

Specific Message Contents

URA UPDATE CONFIRM (Step 6)

Use the same message sub-type as in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
SRNC identity	0000 0000 0001 B
S-RNTI	0000 0000 0000 1111 1111 B
New C-RNTI	'1010 1010 1010 1010' B

8.3.2.7.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH. The updating cause shall be set to "periodic URA update" in IE "URA update cause".

After step 3 the UE shall retry to transmit a URA UPDATE message at the expiry of timer T302, until a total of N302+1 URA UPDATE messages have been received by the SS.

After step 6, the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

8.3.2.8 Void

8.3.2.9 URA Update: Failure (UTRAN initiate an RRC connection release procedure on CCCH)

8.3.2.9.1 Definition

8.3.2.9.2 Conformance requirement

When the UTRAN receives a CELL UPDATE/URA UPDATE message, the UTRAN should:

1> … or

1> initiate an RRC connection release procedure (see subclause 8.1.4 in TS 25.331) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH.

…

The UE shall receive and act on an RRC CONNECTION RELEASE message in states CELL_DCH and CELL_FACH. Furthermore this procedure can interrupt any ongoing procedures with the UE in the above listed states.

When the UE receives the first RRC CONNECTION RELEASE message; and

1> if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or

1> if the message is received on DCCH:

the UE shall:

…

1> in state CELL_FACH:

2> if the RRC CONNECTION RELEASE message was received on the CCCH:

3> …

3> enter idle mode;

Reference

3GPP TS 25.331 clause 8.3.1.5, 8.1.4.3

8.3.2.9.3 Test purpose

To confirm that the UE moves to idle state upon the reception of RRC CONNECTION RELEASE message on downlink CCCH during a URA update procedure.

8.3.2.9.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH state. When the UE detects the expiry of periodic URA updating timer T305, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. The message shall indicate the cause to be "periodic URA update" in IE "URA update cause". The SS transmits RRC CONNECTION RELEASE message on downlink CCCH. The UE shall return to idle mode after release of all current signalling flows and radio access bearers. SS calls for generic procedure C.1 to check that UE is in Idle Mode state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the URA_PCH state. SS wait until T305 timer has expired.
2	→		URA UPDATE	UE shall transmit this message and set value "periodic URA update" into IE "URA update cause".
3	←		RRC CONNECTION RELEASE	SS transmits RRC CONNECTION RELEASE message to the UE on the downlink CCCH.
4				The UE releases L2 signalling radio bearer and radio resources then the UE goes to idle mode.
5	←→		CALL C.1	If the test result of C.1 indicates that UE is in Idle Mode state, the test passes, otherwise it fails.

Specific Message Contents

URA UPDATE (Step 2)

The same message found in Clause 9 of TS 34.108 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'Periodic URA update'

RRC CONNECTION RELEASE (Step 3)

Use the same message sub-type found in Clause 9 of TS 34.108.

8.3.2.9.5 Test requirement

After step 1 the UE shall transmit a URA UPDATE message on the uplink CCCH and set value "periodic URA update" into IE "Cell update cause".

After step 3 the UE shall enter idle state.

8.3.2.10 URA Update: Reception of URA UPDATE CONFIRM message that causes invalid configuration

8.3.2.10.1 Definition

8.3.2.10.2 Conformance Requirement

If the variable INVALID_CONFIGURATION is set to TRUE, the UE shall:

1> if V302 is equal to or smaller than N302:

2> in case of a URA update procedure:

3> set the contents of the URA UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the URA UPDATE message for transmission on the uplink CCCH.

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

…

Reference

3GPP TS 25.331 clause 8.3.1.9

8.3.2.10.3 Test Purpose

1. To confirm that the UE retransmits a URA UPDATE message when it receives a URA UPDATE CONFIRM message that will trigger an invalid configuration in the UE, if the number of retransmissions has not reached the maximum allowed value.

8.3.2.10.4 Method of Test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH state. When the UE detects the expiry of timer T305 according to the system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. This message shall contain value "periodical URA update" in IE "URA update cause". Upon receiving such a message, the SS replies with a URA UPDATE CONFIRM message with IE "RRC State Indicator" set to "CELL_DCH" on the downlink CCCH. The UE shall detect its variable "invalid configuration" is set and re-transmit URA UPDATE message. SS then transmit a valid URA UPDATE CONFIRM UPDATE message on the downlink CCCH to end the procedure.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the URA_PCH state. SS wait until T305 timer has expired.
2	→		URA UPDATE	UE shall transmit this message and set value "periodic URA update" into IE "URA update cause".
3	←		URA UPDATE CONFIRM	
4	→		URA UPDATE	IE "Protocol error indicator" is set to TRUE and IE "Protocol error information" is set to "Information element value not comprehended".
5			Void	
6			Void	
7	←		URA UPDATE CONFIRM	

URA UPDATE (Step 2)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'Periodic URA update'

URA UPDATE (Step 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'Periodic URA update'
Protocol error indicator	TRUE
Protocol error information	
- Protocol error cause	Information element value not comprehended

URA UPDATE CONFIRM (Step 3)

Use the same message sub-type found in TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
RRC State Indicator	CELL_DCH

8.3.2.10.5 Test Requirement

After step 1 the UE shall detect the expiry of timer T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH, setting value "periodic URA update" into IE "URA update cause".

After step 3 the UE shall transmit a URA UPDATE message on the uplink CCCH, setting value 'TRUE" in IE "URA update cause" and value "Information element value not comprehended" in "Protocol error cause".

8.3.2.11 URA Update: Cell reselection to cell of another PLMN belonging to the equivalent PLMN list

8.3.2.11.1 Definition

8.3.2.11.2 Conformance requirement

1. A UE in URA_PCH state shall initiate the URA update procedure in the following cases:
   - URA reselection:
     - if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or
     - if the list of URA identities in system information block type 2 is empty; or
     - if the system information block type 2 can not be found:
       - perform URA update using the cause "change of URA".
2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.
   - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.
   - The cell is not barred, see clause 5.3.1.1 in TS 25.304.
   - The cell is not part of the list of "forbidden LAs for roaming" TS 22.011
   - The cell selection criteria are fulfilled, see clause 5.2.3.1.2 in TS 25.304.
3. The Mobile Equipment shall store a list of "equivalent PLMNs". This list is replaced or deleted at the end of each location update procedure, routing area update procedure and GPRS attach procedure. The stored list consists of a list of equivalent PLMNs as downloaded by the network plus the PLMN code of the network that downloaded the list. The stored list shall not be deleted when the MS is switched off. The stored list shall be deleted if the SIM is removed. The maximum number of possible entries in the stored list is six.

Reference

3GPP TS 25.331 clause 8.3.1.2.

3GPP TS 25.304 clause 4.3.

3GPP TS 24.008 clause 4.4.1.

8.3.2.11.3 Test purpose

1. To confirm that the UE executes a URA update procedure after a successful reselection of another UTRA cell with a URA identity that is not the URA of the UE and with a PLMN identity different from the original cell but with a PLMN that is part of the equivalent PLMN list in the UE.

NOTE: Verifies conformance requirements 1, 2 and 3.

2. To confirm that the UE refrains from executing a URA update procedure to a better UTRA cell with another PLMN identity when that PLMN identity is not part of the equivalent PLMN list in the UE.

NOTE: Test case in 8.3.2.1 is a test where the UE reselects to a cell with the same PLMN identity as the registered PLMN.

8.3.2.11.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in table 8.3.2.1-1, while cell 4 and cell 7 is inactive.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

UE: Shall have stored equivalent PLMN list containing PLMN-1 and PLMN-2. The equivalent PLMN list stored in the UE shall not contain PLMN-3. The UE shall also have stored the URA identity URA-ID 1 from the list of URA-IDs in cell 1.

Test Procedure

Table 8.3.2.11-1

Parameter	Unit	Cell 1			Cell 4			Cell 7		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			High Range Test Frequency			Low Range Test Frequency		
PLMN identity		PLMN-1			PLMN-2			PLMN-3		
URA identity		URA-ID 1			URA-ID 2			URA-ID 3		
CPICH Ec (FDD)	dBm/3.84MHz	-58	-69	-69	Cell 4 is switched off	-58	-58	Cell 7 is switched off	Cell 7 is switched off	-47
P-CCPCH RSCP (TDD)	dBm	-62	-68	-68	Cell 4 is switched off	-62	-68	Cell 7 is switched off	Cell 7 is switched off	-62

Table 8.3.2.11-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently.

a) At T0, the SS activates Cell 1.

b) At T1, the SS activates Cell 4, and monitors Cell 4 for received messages from UE.

c) UE re-selects to Cell 4, and sends a URA UPDATE message. The SS replies with an URA UPDATE CONFIRM message on the downlink CCCH.

d) At T2, the SS activates Cell 7, and monitors Cell 7 for received messages from UE.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in URA_PCH state, camped on Cell 1 and registered to PLMN1. SS applies downlink transmission power settings according to values in column "T0" of table 8.3.2.11-1.
1a		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3	Modified SIB 3 and MIB
1b	←		PAGING TYPE 1	Include IE "BCCH modification info"
1c				Wait 5 seconds to allow UE to read new system information
1d				SS applies downlink transmission power settings according to values in column "T1" of table 8.3.2.11-1.
2		→	URA UPDATE	The UE moves to CELL_FACH state and transmits this message in Cell 4. The value "change of URA" shall be set in IE "URA update cause".
3		←	URA UPDATE CONFIRM	The value "URA_PCH" set in IE "RRC State Indicator".
4				SS applies downlink transmission power settings according to values in column "T2" of table 8.3.2.11-1.
5				SS monitors that the UE does not send a URA UPDATE message or any other message.
6		←→	CALL C.5	If the test result of C.5 indicates that UE is in URA_PCH state, the test passes, otherwise it fails.

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	Set to (Current MIB value tag + 1)
SIB 3 Cell Value tag	Set to (Current SIB3 value tag + 1)

System Information Block type 3 (Step 1a)

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

- Qqualmin	-16

PAGING TYPE 1 (Step 1b)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Paging record list	Not Present
BCCH modification info	
MIB Value tag	Set to latest value transmitted in MIB
BCCH modification time	Not present

URA UPDATE (Step 2)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:.

Information Element	Value/remark
URA Update Cause	Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Step 3)

Use the same message sub-type found in TS 34.108 clause 9.

8.3.2.11.5 Test requirement

After Step 1d the UE shall send a URA UPATE message.

After Step 4 the UE shall refrain from sending a URA update (or any other message).

8.3.2.12 Restricted cell reselection to a cell belonging to forbidden LA list (URA_PCH)

8.3.2.12.1 Definition

8.3.2.12.2 Conformance requirement

1. A UE in URA_PCH state shall initiate the URA update procedure in the following cases:
   - URA reselection:
     - if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or
     - if the list of URA identities in system information block type 2 is empty; or
     - if the system information block type 2 can not be found:
       - perform URA update using the cause "change of URA".
2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.
   - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.
   - The cell is not barred, see clause 5.3.1 in TS 25.304.
   - The cell is not part of the list of "forbidden LAs for roaming" in TS 22.011.
   - The cell selection criteria are fulfilled, see clause 5.2.3.1.2 in TS 25.304.
3. The Mobile Equipment shall contain a list of "forbidden location areas for roaming", as well as a list of "forbidden location areas for regional provision of service". These lists shall be erased when the MS is switched off or when the SIM is removed, and periodically (with period in the range 12 to 24 hours). The location area identification received on the BCCH that triggered the location updating request shall be added to the suitable list whenever a location update reject message is received with the cause "Roaming not allowed in this location area" or with the cause "Location Area not allowed". The lists shall accommodate each 10 or more location area identifications. When the list is full and a new entry has to be inserted, the oldest entry shall be deleted.

Reference

3GPP TS 25.331 clause 8.3.1.2.

3GPP TS 25.304 clause 4.3.

3GPP TS 24.008 clause 4.4.1.

8.3.2.12.3 Test purpose

1. To confirm that the UE refrains from selecting a UTRA cell and performing a URA update if that cell has a LA identity that is part of the list of LAs stored in the UE as "forbidden location areas for roaming".

NOTE: Test case in 8.3.2.1 is a test where the UE reselects to a cell with the same LA identity as the LA identity in the original cell.

8.3.2.12.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in table 8.3.2.12-1, while cell 4 is inactive.

Qqualmin value for Cell 1 is set to -16 dB in SIB3 and SIB4 (FDD only) (see specific message contents).

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

UE: Shall have stored LA-ID 2 into the list of "forbidden location areas for roaming". The UE shall also have stored the URA identity URA-ID 1 from the list of URA-IDs in cell 1.

Test Procedure

Table 8.3.2.12-1

Parameter	Unit	Cell 1		Cell 4	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		High Range Test Frequency	
URA identity		URA-ID 1		URA-ID 2	
LA identity		LA-ID 1		LA-ID 2	
CPICH Ec (FDD)	dBm/3.84MHz	-73	-73	Cell 4 is switched off	-67
P-CCPCH RSCP (TDD)	dBm	-62	-68	Cell 4 is switched off	-62

Table 8.3.2.12-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while column marked "T1" are to be applied subsequently.

a) At T1, verify that the UE does not reselect to cell 4 and not send a URA update in cell 4, although cell 4 is the best cell.

b) SS calls for generic procedure C.5 to check that UE is in URA_PCH state in cell 1.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in URA_PCH state, camped on Cell 1 and registered to PLMN1. SS applies downlink transmission power settings according to values in column "T0" of table 8.3.2.12-1.
2				SS applies downlink transmission power settings according to values in column "T1" of table 8.3.2.12-1.
3				SS monitors that the UE does not send a URA UPDATE message or any other message within 30 seconds of step 2.
4	←→		CALL C.5	If the test result of C.5 indicates that UE is in URA_PCH state in cell 1, the test passes, otherwise it fails.

Specific Message Contents

MASTER INFORMATION BLOCK

Use the same message sub-type found in clause 6.1.0a.3 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Value Tag	Set to (Current MIB value tag + 1)
SIB 3 Cell Value tag	Set to (Current SIB3 value tag + 1)
SIB 4 Cell Value tag	Set to (Current SIB4 value tag + 1)

System Information Block type 3

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

- Qqualmin	-16

System Information Block type 4

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

- Qqualmin	-16

8.3.2.12.5 Test requirement

After Step 2 the UE shall refrain from sending a URA UPDATE (or any other message).

8.3.2.13 URA Update: Change of URA due to HCS Cell Reselection

8.3.2.13.1 Definition

8.3.2.13.2 Conformance requirement

1. The quality level threshold criterion H for hierarchical cell structures is used to determine whether prioritised ranking according to hierarchical cell re-selection rules shall apply, and is defined by:

$$H_s = Q_{meas,s} - Qhcs_s$$

$$H_n = Q_{meas,n} - Qhcs_n - TO_n * L_n$$

…

2. The cell-ranking criterion R is defined by:

$$R_s = Q_{meas,s} + Qhyst_s$$

$$R_n = Q_{meas,n} - Qoffset_{s,n} - TO_n * (1 - L_n)$$

where:

$$TO_n = TEMP\_OFFSET_n * W(PENALTY\_TIME_n - T_n)$$

$L_n = 0$ if $HCS\_PRIO_n = HCS\_PRIO_s$
$L_n = 1$ if $HCS\_PRIO_n <> HCS\_PRIO_s$

$W(x) = 0$ for $x < 0$
$W(x) = 1$ for $x >= 0$

$TEMP\_OFFSET_n$ applies an offset to the H and R criteria for the duration of $PENALTY\_TIME_n$ after a timer T_n has started for that neighbouring cell.

The timer T_n is implemented for each neighbouring cell. T_n shall be started from zero when one of the following conditions becomes true:

- if $HCS\_PRIO_n <> HCS\_PRIO_s$ and

$$Q_{meas,n} > Qhcs_n$$

Or

- if $HCS\_PRIO_n = HCS\_PRIO_s$ and
  - for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH RSCP in the serving cell, and:

$$Q_{meas,n} > Q_{meas,s} + Qoffset1_{s,n}$$

  - for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH Ec/No in the serving cell, and:

$$Q_{meas,n} > Q_{meas,s} + Qoffset2_{s,n}$$

  - for all other serving and neighbour cells:

$$Q_{meas,n} > Q_{meas,s} + Qoffset1_{s,n}$$

T_n for the associated neighbour cell shall be stopped as soon as any of the above conditions are no longer fulfilled. Any value calculated for TO_n is valid only if the associated timer T_n is still running else TO_n shall be set to zero.

At cell-reselection, a timer T_n is stopped only if the corresponding cell is not a neighbour cell of the new serving cell, or if the criteria given above for starting timer T_n for the corresponding cell is no longer fulfilled with the parameters of the new serving cell. On cell re-selection, timer T_n shall be continued to be run for the corresponding cells but the

criteria given above shall be evaluated with parameters broadcast in the new serving cell if the corresponding cells are neighbours of the new serving cell.

…

3. The cell selection criterion S used for cell reselection is fulfilled when:

for FDD cells:	Srxlev > 0 AND Squal > 0
for TDD cells:	Srxlev > 0
for GSM cells:	Srxlev > 0

Where :

$Squal = Q_{qualmeas} - Qqualmin$

$Srxlev = Q_{rxlevmeas} - Qrxlevmin - Pcompensation$

…

4. The UE shall perform ranking of all cells that fulfil the S criterion among

- all cells that have the highest HCS_PRIO among those cells that fulfil the criterion H >= 0. Note that this rule is not valid when UE high-mobility is detected.
- all cells, not considering HCS priority levels, if no cell fulfil the criterion H >= 0. This case is also valid when it is indicated in system information that HCS is not used, that is when serving cell does not belong to a hierarchical cell structure.

The cells shall be ranked according to the R criteria.

The best ranked cell is the cell with the highest R value.

5. If an FDD cell is ranked as the best cell and the quality measure for cell selection and re-selection is set to CPICH RSCP, the UE shall perform cell re-selection to that FDD cell.

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during a time interval Treselection.
- more than 1 second has elapsed since the UE camped on the current serving cell.

…

6. The *cell reselection* process in Connected Mode is the same as *cell reselection evaluation process* used for idle mode, described in subclause 5.2.6 of 25.304.

7. A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

1> URA reselection:

2> if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or

…

3> perform URA update using the cause "change of URA".

Reference

3GPP TS 25.304 clause 5.2.6.1.4

3GPP TS 25.304 clause 5.4.3

3GPP TS 25.331 clause 8.3.1

8.3.2.13.3 Test purpose

1. To confirm that the UE can read HCS related SIB information and act upon all HCS parameters in URA_PCH state.

2. To confirm that the UE executes an URA update procedure after the successful change of URA due to HCS Cell Reselection in URA_PCH state.

3. To confirm UE responds correctly when it re-selects to a new cell while waiting from URA UPDATE CONFIRM message from SS.

8.3.2.13.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 is active with URA-ID 1 and downlink transmission power shown in column marked "T0" in table 8.3.2.13-1. Cell2 with URA-ID 1 and Cell 3 with URA-ID 2 are switched off

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE, with URA-ID 1 from the list of URA-ID in cell 1

Specific Message Content

For system information blocks 4 and 11 for Cell 1 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.

Contents of System Information Block type 4 (FDD)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintersearch	0 dB
- SsearchHCS	17 (35 dB)
- RAT List	This parameter is configurable
- $S_{limit,SearchRAT}$	0
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- $Qhyst1_S$	7 (gives actual value of 14 dB)
- $Qhyst2_S$	Not Present
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	39 (results in actual value of –76)
- TcrMax	Not Present

Contents of System Information Block type 4 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	TDD
- SsearchHCS	23 (47 dB)
- $Qhyst1_S$	10 (gives actual value of 20 dB)
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	39 (results in actual value of –76)
- TcrMax	Not Present

Contents of System Information Block type 11 (FDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)

Contents of System Information Block type 11 (3.84 Mcps TDD 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 (0 dB)
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0 (0 dB)
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)

Test Procedure

Table 8.3.2.13-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
Cell id in system information		1			2			3		
UTRA RF Channel Number		Mid Range Test Frequency			Mid Range Test Frequency			Mid Range Test Frequency		
HCS Priority		6			7			7		
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-65	-65	-83	-83	-69	-83	-69	-69
H* (During penalty time)		16	11	-1	-19	-19	7	-19	-5	7
H* (After PenaltyTime)		16	11	11	-7	-7	7	-7	7	7
P-CCPCH RSCP (TDD)	dBm	-61	-61	-61	-80	-80	-67	-80	-73	-73
H* (After PenaltyTime)		15	15	15	-4	-4	9	-4	3	3
R* (During PenaltyTime)		-46	-51	-45	-63	-63	-61	-63	-49	-55
R* (After PenaltyTime)		-46	-51	-45	-63	-63	-49	-63	-49	-55

(*) Note: this parameter is calculated internally in the UE and is only shown for clarification of the test procedure.

The UE is in the URA_PCH state and assigned with only 1 URA identity in cell 1: URA-ID 1. SS configures Cell 2 and 3 with power level given in column "T0", and URA-Id 1 and 2 respectively and starts broadcast of BCCH on the primary CCPCH in cells 2 and 3. UE shall remain camped on the Cell 1 even after expiry of penalty time i.e. 40 seconds. SS sets downlink transmission power settings according to columns "T1" in table 8.3.2.13-1. SS then adjusts the transmission power again according to 'T1' column. This is expected to cause the UE to perform a cell reselection to cell 3 after at-least 40 Seconds (Penalty Time) after the power levels have been changed. UE on performing cell reselection to cell 3 finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it moves to CELL_FACH state and transmits a URA UPDATE message on the uplink CCCH. After the SS receives this message, it transmits URA UPDATE CONFIRM message to the UE on the downlink CCCH. The "RRC State Indicator" is set to "URA_PCH". UE returns to URA_PCH state in cell 3 without sending a uplink response message. Next SS adjusts the transmission power according to 'T2' column. After the expiry of penalty time the UE shall re-select to cell 2, and transmit URA UPDATE message to SS. However, SS do not acknowledge but adjusts the transmission power according to 'T0' column. UE shall perform cell re-selection to cell 1 and then sent URA UPDATE message to SS. Finally SS shall transmit URA UPDATE CONFIRM message to UE on the downlink CCCH. UE shall return to URA_PCH state in Cell 1 and will not transmit anything on PRACH.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is updated with only 1 URA identity carried currently by cell 1. The starting state of the UE is URA_PCH
2	←		BCCH	SS configures cell 2 (with URA-ID 1) and Cell 3 (with URA-ID 2) and power levels as given in column T0 of table 8.3.2.13-1 and starts transmission of BCCH.
3				UE shall Remain camped on Cell 1 and in URA_PCH state even after expiry of Penalty time.
4				SS set the power transmission of all cells according to column 'T1' of table 8.3.2.13-1.
5	→		URA UPDATE	The UE shall perform a cell reselection first after the penalty time to cell 3 and when it finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it shall then transmit this message and set value "change of URA" into IE "URA update cause".
6	←		URA UPDATE CONFIRM	Message sent on CCCH.
7				SS set the power transmission of all cells according to column 'T2' of table 8.3.2.13-1. SS makes sure that the UE does not send an URA Update message during penalty time
8	→		URA UPDATE	In Cell 2
9				SS do not respond to the URA UPDATE message from UE and set the power transmission of all cells according to column 'T0' of table 8.3.2.13-1.
10	→		URA UPDATE	In Cell 1
11	←		URA UPDATE CONFIRM	Message sent on CCCH.

Specific Message Contents

The contents of system information block 4 and 11 messages are identical as system information block 4 and 11 messages as found in 34.108 clause 6.1 with the following exceptions:

Contents of System Information Block type 4 (FDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintersearch	0 dB
- SsearchHCS	17 (35 dB)
- RAT List	This parameter is configurable
- $S_{limit,SearchRAT}$	0
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- $Qhyst1_S$	7 (gives actual value of 14 dB)
- $Qhyst2_S$	Not Present
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	39 (results in actual value of –76)
- TcrMax	Not Present

Contents of System Information Block type 4 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	TDD
- SsearchHCS	23 (47 dB)
- $Qhyst1_S$	10 (gives actual value of 20 dB)
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	39 (results in actual value of –76)
- TcrMax	Not Present

Contents of System Information Block type 11 (FDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- Cell Selection and Re-selection info	NOT PRESENT
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)

Contents of System Information Block type 11 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 (0 dB)
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0 (0 dB)
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)

Contents of System Information Block type 11 (FDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Cell Selection and Re-selection info	NOT PRESENT
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-58 (-115 dBm)

Contents of System Information Block type 11 (3.84 Mcps TDD, 1.28 Mcps TDD and 7.68 Mcps TDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 (0 dB)
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20 dB
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 (0 dB)
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- $Qoffset1_{s,n}$	-20dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of –76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-52 (-103 dBm)

URA UPDATE (Step 5, 8 and 10)

Information Element	Value/remark
URA Update Cause	Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Steps 6 and 11)

Use the same message sub-type found in TS 34.108 clause 9.

8.3.2.13.5 Test requirement

After step 4 the UE shall find that URA-ID 2 is not in its maintained list of URA-IDs. After cell reselection, the UE shall move to CELL_FACH state and transmit URA UPDATE message setting value "change of URA" into IE "URA update cause".

After step 7 the UE shall find that URA-ID 1 is not in its maintained list of URA-IDs. After cell reselection, the UE shall move to CELL_FACH state and transmit URA UPDATE message setting value "change of URA" into IE "URA update cause".

8.3.3 UTRAN Mobility Information

8.3.3.1 UTRAN Mobility Information: Success

8.3.3.1.1 Definition

8.3.3.1.2 Conformance requirement

When the UE receives a UTRAN MOBILITY INFORMATION message, it shall:

1> act on received information elements as specified in TS 25.331 subclause 8.6;

1> if the IE "UE Timers and constants in connected mode" is present:

2> store the values of the IE "UE Timers and constants in connected mode" in the variable TIMERS_AND_CONSTANTS, replacing any previously stored value for each timer and constant; and

2> for each updated timer value:

3> start using the new value next time the timer is started;

NOTE: If a new value of timer T305 is included in the IE "UE Timers and constants in connected mode", and the old value of timer T305 is "infinity", the UE will not use the new value of the timer T305 until the next cell reselection.

2> for each updated constant value:

3> start using the new value directly;

…

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC;

….

If the IE "New U-RNTI" is included in a received message, the UE shall:

1> store the value in the variable U_RNTI, replacing any old stored value.

…

If the IE "New C-RNTI" is included, the UE shall:

1> store the value in the variable C_RNTI, replacing any old stored value;

1> use that C-RNTI when using common transport channels of type RACH, and FACH in the current cell.

…

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

…

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

…

Reference

3GPP TS 25.331 clauses 8.3.3, 8.6.3.9, 8.6.3.10, 8.3.1.3.

8.3.3.1.3 Test purpose

1. To confirm that the UE starts to use the new identities after it receives a UTRAN MOBILITY INFORMATION message from the SS.

8.3.3.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Specific Message Contents

For system information block 1 of Cell 1 (gives IE's which are different from defaults given in 34.108 subclause 6.1) to be transmitted before idle update preamble.

System Information Block type 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
-T305	10

Test Procedure

Initially, the UE is in CELL_FACH state and it has been assigned a C-RNTI and U-RNTI. SS waits for T305 to expire. The UE shall transmit a CELL UPDATE message. SS sends CELL UPDATE CONFIRM message to the UE on the downlink CCCH. Then SS transmits an UTRAN MOBILITY INFORMATION message which includes new C-RNTI and U-RNTI to the UE. Then the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message using the assigned new C-RNTI in MAC header as confirmation. SS waits for UE to perform periodic cell updating. When SS received a CELL UPDATE message, SS checks that UE uses the new U-RNTI in the CELL UPDATE message. Then SS sends CELL UPDATE CONFIRM on the downlink CCCH. SS waits for UE to perform periodic cell updating. When SS received a CELL UPDATE message, SS sends CELL UPDATE CONFIRM on the downlink CCCH to end the test procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of the UE is CELL_FACH state. UE has been allocated both C-RNTI and U-RNTI during RRC connection establishment phase.
1a				SS waits for a period up to timer T305 to allow the UE to start performing a cell updating procedure.
1b	→		CELL UPDATE	
1c	←		CELL UPDATE CONFIRM	
2	←		UTRAN MOBILITY INFORMATION	Contains new C-RNTI and U-RNTI identities and a value for T305 that is different from the value defined in the system information.
3	→		UTRAN MOBILITY INFORMATION CONFIRM	The assigned new C-RNTI shall be included in MAC header.
4				SS wait for T305 (same as the value defined in system information) to expire.
5	→		CELL UPDATE	UE shall trigger cell updating. The message shall indicate the same U-RNTI assigned in the UTRAN MOBILITY INFORMATION message in step 2.
6	←		CELL UPDATE CONFIRM	
7				SS wait for T305 (the new value as specified in step 2) to expire.
8	→		CELL UPDATE	UE shall trigger cell updating. The message shall indicate the same U-RNTI assigned in the UTRAN MOBILITY INFORMATION message in step 2.
9	←		CELL UPDATE CONFIRM	
10	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Content

UTRAN MOBILITY INFORMATION (Step 2)

Use the same message sub-type as in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0101 0101 0101 0101 0101'
New C-RNTI	’0000 0000 0000 1111’
UE Timers and constants in connected mode	
- T305	5 minutes

UTRAN MOBILITY INFORMATION CONFIRM (Step 3)

Only the message type IE is checked in this message.

CELL UPDATE (Step 1b)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH.

CELL UPDATE (Step 5 and 8)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0101 0101 0101 0101 0101'
Cell Update Cause	Check to see if set to 'periodical cell updating'

CELL UPDATE CONFIRM (Step 1c)

Use the same message sub-type as in TS 34.108, clause 9.

CELL UPDATE CONFIRM (Step 6 and 9)

Use the same message sub-type as in TS 34.108, clause 9 on the downlink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0101 0101 0101 0101 0101'

8.3.3.1.5 Test requirement

After step 2 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH that using the assigned new C-RNTI in MAC header.

After step 4 and 7 the UE shall transmit a CELL UPDATE message on the uplink CCCH with IE "Cell update cause" set to "periodical cell updating". The IE "U-RNTI" shall be identical to the IE "New RNTI" found in UTRAN MOBILITY INFORMATION message sent by the SS in step 2.

8.3.3.2 UTRAN Mobility Information: Failure (Invalid message reception)

8.3.3.2.1 Definition

8.3.3.2.2 Conformance Requirements

If the UTRAN MOBILITY INFORMATION message contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

1> transmit a UTRAN MOBILITY INFORMATION FAILURE message on the uplink DCCH using AM RLC;

1> set the IE "RRC transaction identifier" in the UTRAN MOBILITY INFORMATION FAILURE message to the value of "RRC transaction identifier" in the entry for the UTRAN MOBILITY INFORMATION message in the table "Rejected transactions" in the variable TRANSACTIONS, and;

1> set the IE "failure cause" to the cause value "protocol error";

1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION;

1> when the UTRAN MOBILITY INFORMATION FAILURE message has been submitted to lower layers for transmission:

2> continue with any ongoing processes and procedures as if the invalid UTRAN MOBILITY INFORMATION message has not been received;

2> and the procedure ends.

References

3GPP TS 25.331 clauses 8.3.3.6

8.3.3.2.3 Test Purpose

1. To confirm that the UE ignore the erroneous UTRAN MOBILITY INFORMATION message and report this event to the UTRAN by sending UTRAN MOBILITY INFORMATION FAILURE message, stating the appropriate failure cause and information.

8.3.3.2.4 Method of test

Initial Conditions

System Simulator: 1 cell.

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Specific Message Contents

For system information block 1 (given IEs which are different from defaults given in TS34.108 clause 6.1) to be transmitted before idle update preamble.

System Information Block type 1

Information Element	Value/remark
T305	5 minutes

Test Procedure

The UE is brought to CELL_FACH state. SS waits for T305 to expire. The UE shall transmit a CELL UPDATE message. SS sends CELL UPDATE CONFIRM message to the UE on the downlink DCCH. Then SS transmits a UTRAN MOBILITY INFORMATION message, which contains an unexpected critical message extension, to the UE on the DCCH using AM-RLC mode. The UE shall respond by transmitting the UTRAN MOBILITY INFORMATION FAILURE message, indicating "protocol error" in IE "failure cause" and also "Message extension not comprehended " in IE "Protocol error information". After receiving the UTRAN MOBILITY INFORMATION FAILURE message, SS waits for T305 to expire. The UE shall transmit a CELL UPDATE message with the original U-RNTI identity assigned. SS sends CELL UPDATE CONFIRM message to the UE on the downlink DCCH.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of the UE is CELL_FACH state.
1a				SS waits for a period up to timer T305 to allow the UE to start performing a cell updating procedure.
1b	→		CELL UPDATE	
1c	←		CELL UPDATE CONFIRM	
2	←		UTRAN MOBILITY INFORMATION	See specific message content.
3	→		UTRAN MOBILITY INFORMATION FAILURE	UE shall transmit this message to report the error in UTRAN MOBILITY INFORMATION message. It shall include the appropriate cause in the message.
4				SS waits for a period up to timer T305 to allow the UE to start performing a cell updating procedure.
5	→		CELL UPDATE	
6	←		CELL UPDATE CONFIRM	

Specific Message Content

UTRAN MOBILITY INFORMATION (Step 2)

Use the UTRAN MOBILITY INFORMATION message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Critical extensions	'FF'H

UTRAN MOBILITY INFORMATION FAILURE (Step 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

Information Element	Value/remark
Failure Cause - Failure Cause - Protocol Error Information	 Check to see if set to 'Protocol error' Check to see if set to Message extension not comprehended

CELL UPDATE (Step 1b and 5)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'B
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'B
Cell update cause	Check to see if set to 'periodical cell updating'

CELL UPDATE CONFIRM (Step 1c and 6)

Use the same message sub-type as in TS 34.108 clause 9.

8.3.3.2.5 Test Requirement

After step 1a the UE shall initiate a periodic cell updating procedure by transmitting CELL UPDATE message on the CCCH. In this message, the U-RNTI identity shall be set to the same value as assigned during the RRC connection establishment procedure.

After step 2 the UE shall transmit UTRAN MOBILITY INFORMATION FAILURE message, indicating the value "protocol error" in IE "failure cause" and also "Message extension not comprehended" in IE "protocol error information".

After step 4 the UE shall initiate a periodic cell updating procedure by transmitting CELL UPDATE message on the CCCH. In this message, the U-RNTI identity shall be set to the same value as assigned during the RRC connection establishment procedure.

8.3.3.3 UTRAN MOBILITY INFORMATION: Seamless SRNS relocation in CELL_DCH (without pending of ciphering)

8.3.3.3.1 Definition

8.3.3.3.2 Conformance requirement

To initiate the procedure UTRAN transmits a UTRAN MOBILITY INFORMATION message to the UE on the downlink DCCH using AM or UM RLC. In case of SRNS relocation, the message is sent using UM RLC only.

When the UE receives a UTRAN MOBILITY INFORMATION message, it shall:

1> if the UTRAN MOBILITY INFORMATION message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":

2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected";

1> if the UTRAN MOBILITY INFORMATION message contained the IE "Ciphering mode info":

2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.

1> if the received UTRAN MOBILITY INFORMATION message included the IE " Downlink counter synchronisation info ":

2> re-establish the RLC entity for RB2;

2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);

2> increment by one the downlink and uplink values of the HFN component of COUNT-C for RB2;

2> calculate the START value according to TS 25.331 subclause 8.5.9;

2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the UTRAN MOBILITY INFORMATION CONFIRM message.

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC;

1> if the IE "Integrity protection mode info" was present in the UTRAN MOBILITY INFORMATION message:

2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted UTRAN MOBILITY INFORMATION CONFIRM message.

1> if the IE "Downlink counter synchronisation info" was included in the received UTRAN MOBILITY INFORMATION message:

2> when RLC has confirmed the successful transmission of the response message:

3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;

3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;

3> set the remaining bits of the HFN component of the COUNT-C values of all UM RLC entities to zero;

3> re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED_RABS.

1> apply the new ciphering configuration as follows:

2> if the IE "Radio bearer downlink ciphering activation time info" is present:

3> apply the following procedure for each radio bearer and signalling radio bearers using RLC-AM or RLC-UM indicated by the IE "RB identity":

….

4> switch to the new ciphering configuration according to the following:

…

5> if an RLC reset or re-establishment occurs before the activation time for the new ciphering configuration has been reached, ignore the activation time and apply the new ciphering configuration immediately after the RLC reset or RLC re-establishment.

1> if IE "Integrity protection mode command" has the value "start" and the IE "Status" in the variable INTEGRITY_PROTECTION_INFO has the value "Started" and this IE was not included SECURITY MODE COMMAND:

NOTE: This case is used in SRNS relocation

2> perform integrity protection on the received message, applying the new integrity protection configuration, as described in subclause 8.5.10.1 of TS25.331 by:

3> using the algorithm (UIA defined in TS33.102) indicated by the IE "Integrity protection algorithm" contained in the IE "Integrity protection mode info";

3> using the IE "Integrity protection initialisation number", contained in the IE "Integrity protection mode info" as the value of FRESH defined in TS33.102.

2> let RBm be the signalling radio bearer where the reconfiguration message was received and let RBn be the signalling radio bearer where the response message is transmitted;

2> prohibit transmission of RRC messages on all signalling radio bearers in the IE "ESTABLISHED_RABS" except on RB0 and the radio bearer where the response message is transmitted;

2> if for a signalling radio bearer, a security configuration triggered by a previous SECURITY MODE COMMAND is pending, due to the activation time for the signalling radio bearer not having elapsed:

3> if the previous SECURITY MODE COMMAND was received due to new keys being received:

4> consider the new integrity protection configuration to include the received new keys; and

4> initialise the HFN of the COUNT-I values of the corresponding signalling radio bearers according to subclause 8.1.12.

3> else:

4> consider the new Integrity Protection configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN associated with the previously received SECURITY MODE COMMAND; and

4> initialise the HFN of the COUNT-I values of the corresponding signalling radio bearers according to subclause 8.1.12 using the START value associated with the LATEST_CONFIGURED_CN_DOMAIN to be transmitted in the response to the current message.

2> start applying the new integrity protection configuration in the downlink for each signalling radio bearer in the IE "ESTABLISHED_RABS" except RBm at the next received RRC message disregarding any pending activation times for the corresponding signalling radio bearer;

2> start applying the new integrity protection configuration in the downlink for signalling radio bearer RBm from and including the received configuration message;

2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RBn from and including the transmitted response message;

2> start applying the new integrity protection configuration in the uplink for signalling radio bearers other than RBn from the first message onwards.

NOTE: The UTRAN should ignore the information included in the IE "Uplink integrity protection info".

Reference

3GPP TS 25.331 clause 8.3.3 , 8.6.3.4 and 8.6.3.5

8.3.3.3.3 Test purpose

1. To confirm that the UE sends calculated START values for each CN domain to SS after a successful SRNS relocation.

2. In the case that ciphering is applied by the network, to confirm that the UE restarts ciphering following a successful SRNS relocation.

3. To confirm that the UE correctly applies integrity protection after the SRNS relocation.

8.3.3.3.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in the CELL_DCH state. SS then transmits a UTRAN MOBILITY INFORMATION message, which includes a valid "New U-RNTI", IE "Downlink counter synchronisation info" and IE "Integrity protection mode info", to the UE on the downlink DCCH using UM RLC. SS verifies that the UE sends UTRAN MOBILITY INFORMATION CONFIRM message. This message also includes a calculated new START value according to the formula "$START_X' = MSB_{20}$ (MAX {COUNT-C, COUNT-I | radio bearers and signalling radio bearers using the most recently configured CK_X and IK_X}) + 2", calculated IE "Integrity Check Info" using a new FRESH value as included in IE "Integrity protection initialisation number" in IE "Integrity protection mode info" in UTRAN MOBILITY INFORMATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration.

SS transmits UE CAPABILITY ENQUIRY message on the downlink DCCH using RLC-AM. The UE shall respond to downlink message with a UE CAPABILITY INFORMATION message on the uplink DCCH using RLC-AM. SS responds with UE CAPABILITY INFORMATION CONFIRM message. SS then send IDENTITY REQUEST message

on the DCCH using RLC-AM (SRB3) in order to confirm that the UE can communicate on SRB3 by using new integrity configuration. The UE shall respond IDENTITY RESPONSE message on the uplink DCCH using RLC-AM (SRB3).

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		UTRAN MOBILITY INFORMATION	If IE "Ciphering mode info" is present in the SECURITY MODE COMMAND during initial condition set-up, this message is sent after last ciphering activation time has elapsed and there is no pending ciphering activation time. New U-RNTI identities are assigned to the UE. IE "Downlink counter synchronisation info" is included. New integrity protection configuration is applied on DL SRB1.
2	→		UTRAN MOBILITY INFORMATION CONFIRM	New calculated START value is included. New integrity protection configuration is applied on UL SRB2. If IE "Ciphering mode info" is present in step 1, new ciphering configuration is applied on UL SRB2 with the downlink and uplink values of the HFN component of COUNT-C for SRB2 incremented by one.
3	←		UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2. If IE "Ciphering mode info" is present in step 1, new ciphering configuration is applied on DL SRB2 with the same START value as used in step 2.
4	→		UE CAPABILITY INFORMATION	
5	←		UE CAPABILITY INFORMATION CONFIRM	
6	←		DOWNLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3. If IE "Ciphering mode info" is present in step 1, new ciphering configuration is applied on DL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 2.
7	→		UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB3 by UE. If IE "Ciphering mode info" is present in step 1, new ciphering configuration is applied on UL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 2.

Specific Message Contents

UTRAN MOBILITY INFORMATION (Step 1) – for PS domain testing only

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Ciphering mode info	If network does not apply ciphering, set this IE to "Not present". If network applies ciphering, this IE present with the values of the sub IEs as stated below.
- Ciphering mode command	Start/restart
- Ciphering algorithm	Set to an algorithm that is different from the one indicated in the SECURITY MODE COMMAND during the initial condition set-up.
- Ciphering activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	Not present
Integrity protection mode info	
- Integrity protection mode command	Start
- Downlink integrity protection activation info	Not Present
- Integrity protection algorithm	UIA1
- Integrity protection initialisation number	SS selects an arbitrary 32 bits number for FRESH
New U-RNTI	
- SRNC Identity	An arbitrary 12-bits string which is different from original SRNC
- S-RNTI	An arbitrary 20-bits string which is different from original S-RNTI
New C-RNTI	Not Present
CN Information info	
- PLMN identity	Not present
- CN common GSM-MAP NAS system information	
- GSM-MAP NAS system information	00 01H
- CN domain related information	
- CN domain identity	PS
- CN domain specific NAS system information	
- GSM-MAP NAS system information	05 00H
- CN domain specific DRX cycle length coefficient	7
- CN domain identity	CS
- CN domain specific NAS system information	
- GSM-MAP NAS system information	1E 01H
- CN domain specific DRX cycle length coefficient	7
Downlink counter synchronisation info	
- RB with PDCP information list	Not Present

UTRAN MOBILITY INFORMATION (Step 1) – for CS domain testing only

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark

Ciphering mode info	If network does not apply ciphering, set this IE to "Not present". If network applies ciphering, this IE present with the values of the sub IEs as stated below.
- Ciphering mode command	Start/restart
- Ciphering algorithm	Set to an algorithm that is different from the one indicated in the SECURITY MODE COMMAND during the initial condition set-up.
- Ciphering activation time for DPCH	(256+CFN-(CFN MOD 8 + 8)) MOD 256
- Radio bearer downlink ciphering activation time info	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN
- RB identity	4
- RLC sequence number	Current RLC SN
Integrity protection mode info - Integrity protection mode command - Downlink integrity protection activation info - Integrity protection algorithm - Integrity protection initialisation number	 Start Not Present UIA1 SS selects an arbitrary 32 bits number for FRESH
New U-RNTI - SRNC Identity - S-RNTI New C-RNTI CN Information info - PLMN identity - CN common GSM-MAP NAS system information - GSM-MAP NAS system information - CN domain related information - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient Downlink counter synchronisation info - RB with PDCP information list	 An arbitrary 12-bits string which is different from original SRNC An arbitrary 20-bits string which is different from original S-RNTI Not Present Not present 00 01H PS 05 00H 7 CS 1E 01H 7 Not Present

UTRAN MOBILITY INFORMATION CONFIRM (Step 2) – for PS domain testing only

The same message sub-type found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink DCCH with the following exceptions:

Information Element	Value/remark
Uplink counter synchronisation info - RB with PDCP information list - START list	 Check that this IE is not present. Check that this IE is correct value.

UTRAN MOBILITY INFORMATION CONFIRM (Step 2) – for CS domain testing only

Check that the UE uses the same message sub-type found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
COUNT-C activation time	Check that this IE is present.
Uplink counter synchronisation info - RB with PDCP information list - START list	 Not present Check that this IE has the correct value.

UE CAPABILITY ENQUIRY (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 4)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9.

8.3.3.3.5 Test requirement

After step 1, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC which includes a calculated new START value according to the formula "$START_X' = MSB_{20}$ (MAX {COUNT-C, COUNT-I | radio bearers and signalling radio bearers using the most recently configured CK_X and IK_X}) + 2", calculated IE "Integrity Check Info" using the new FRESH value as included in IE "Integrity protection initialisation number" in IE "Integrity protection mode info" in UTRAN MOBILITY INFORMATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration. The UE, further more, shall apply the new integrity protection configuration for the first received/sent RRC message on SRB0, SRB3, and SRB4 after receiving the UTRAN MOBILITY INFORMATION message (i.e. immediately). For SRB2 the new integrity protection configuration shall be applied from and including the received UTRAN MOBILITY INFORMATION message (DL) and the sent UTRAN MOBILITY INFORMATION CONFIRM message (UL).

After step 3, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

After step 6, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL SRB3.

8.3.3.4 UTRAN Mobility Information: Shared Network

8.3.3.4.1 Definition

8.3.3.4.2 Conformance requirement

1. If the IE "CN information info" is present in a message, the UE shall:

   1> if the IE "Primary PLMN Identity" is present:

      2> forward the content of the IE "Primary PLMN identity" to upper layers.

   1> else:

      2> if the IE "PLMN Identity" is present:

         3> forward the content of the IE "PLMN identity" to upper layers.

2. The UE shall, in the INITIAL DIRECT TRANSFER message:

   1> set the IE "NAS message" as received from upper layers; and

   1> set the IE "CN domain identity" as indicated by the upper layers; and

   1> set the IE "Intra Domain NAS Node Selector" as follows:

2> derive the IE "Intra Domain NAS Node Selector" from TMSI/PMTSI, IMSI, or IMEI; and

2> provide the coding of the IE "Intra Domain NAS Node Selector" according to the following priorities:

1. derive the routing parameter for IDNNS from TMSI (CS domain) or PTMSI (PS domain) whenever a valid TMSI/PTMSI is available;

2. base the routing parameter for IDNNS on IMSI when no valid TMSI/PTMSI is available;

3. base the routing parameter for IDNNS on IMEI only if no (U)SIM is inserted in the UE.

1> if the UE, on the existing RRC connection, has received a dedicated RRC message containing the IE "Primary PLMN Identity" in the IE "CN Information Info":

2> set the IE "PLMN identity" in the INITIAL DIRECT TRANSFER message to the latest PLMN information received via dedicated RRC signalling. If NAS has indicated the PLMN towards which a signalling connection is requested, and this PLMN is not in agreement with the latest PLMN information received via dedicated RRC signalling, then the initial direct transfer procedure shall be aborted, and NAS shall be informed.

References

1. 3GPP TS 25.331 clause 8.6.1.2

2. 3GPP TS 25.331 clause 8.1.8.2

8.3.3.4.3 Test purpose

- To verify that the UE reacts on the IE "Primary PLMN identity" in message UTRAN MOBILITY INFORMATION, and forwards this IE to NAS.

- To verify that the UE sets the IE "PLMN Identity" in the INITIAL DIRECT TRANSFER message to the correct PLMN information received in UTRAN MOBILITY INFORMATION message.

8.3.3.4.4 Method of test

Initial condition

System Simulator:

- Cell 1 broadcasting PLMN1 on BCCH.

- For MASTER INFORMATION BLOCK see specific message content

User Equipment:

The UE is equipped with a USIM containing default values. The HPLMN (MCC+MNC) of the IMSI for the USIM is set to PLMN1.

The UE is registered in CS and PS domains on PLMN1 (MM Idle, SM Inactive, GMM Idle) and is in state CS-DCCH_DCH (state 6-5) as specified in clause 7.4 of TS 34.108.

Test procedure

The UE is registered in CS and PS domains in RRC state Cell_DCH. The SS transmits message UTRAN MOBILITY INFORMATION containing Rel-6 IE "Primary PLMN info". The PLMN code is different from the RPLMN, which triggers LA/RA update. The UE responds with an INTIAL DIRECT TRANSFER message containing IE "PLMN Identity" with the same value as previously received in message UTRAN MOBILITY INFORMATION.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of the UE is CELL_DCH state.
2	←		UTRAN MOBILITY INFORMATION	Primary PLMN identity = PLMN2. LA/RA update is initiated by UE NAS.
3	→		UTRAN MOBILITY INFORMATION CONFIRM	
4	→		INITIAL DIRECT TRANSFER	PLMN identity = PLMN2

Specific message contents

MASTER INFORMATION BLOCK

Use the same message sub-type found in clause 6.1.0a.3 of TS 34.108, with the following exception.

- MIB value tag	Set to (Current MIB value tag + 1)
- Multiple PLMN List - MIB PLMN Identity - Multiple PLMNs (1) - MNC	 TRUE 11

UTRAN MOBILITY INFORMATION (Step 2)

Information Element	Value/remark
CN information info - PLMN identity - CN common GSM-MAP NAS system information - GSM-MAP NAS system information - CN domain related information - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient - Primary PLMN identity	 Not Present 00 01H PS 05 00H 7 CS 1E 01H 7 PLMN-2

INITIAL DIRECT TRANSFER (Step 3)

Information Element	Value/remark
PLMN identity	PLMN-2

8.3.3.4.5 Test requirements

In step 4, the UE shall respond with an INITIAL DIRECT TRANSFER message. The IE "PLMN identity" shall be set to PLMN2.

8.3.4 Active set update in soft handover (FDD)

8.3.4.1 Active set update in soft handover: Radio Link addition

8.3.4.1.1 Definition

8.3.4.1.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following. The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> perform the physical layer synchronisation procedure B as specified in TS 25.214;

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronization B, specified in TS 25.214;

…

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.1.3 Test purpose

1. To confirm that the UE continues to communicate with the SS on both the additional radio link and an already existing radio link after the radio link addition.

8.3.4.1.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

Test Procedure

Table 8.3.4.1

Parameter	Unit	Cell 1				Cell 2			
		T0	T1	T2	T3	T0	T1	T2	T3
UTRA RF Channel Number		Mid Range Test Frequency				Mid Range Test Frequency			
CPICH Ec	dBm/3.84MHz	-60	-60	OFF	-60	-75	-60	-60	OFF

Table 8.3.4.1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

Initially, the UE goes to connected mode and establishes a radio access bearer in CELL_DCH state in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.1. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC

which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC without waiting for the physical channel synchronisation B.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.1. UE shall not detect the DPCH from cell 1 but continue to communicate through the another DPCH from cell 2. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 1.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 2. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

The SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.1. UE shall detect DPCH from cell 1, but not detect the DPCH from cell 2, but continue to communicate through DPCH from cell 1. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 2.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1. The UE shall transmit a UE CAPABILITY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.1.
2	→		MEASUREMENT REPORT	See specific message contents for this message
3	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID in cell 2)
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, without interfering with existing connections on the radio link in cell 1.
5				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.1
5a	→		MEASUREMENT REPORT	See specific message contents for this message
6	←		UE CAPABILITY ENQUIRY	Use default message.
7	→		UE CAPABILITY INFORMATION	Use default message.
8	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
9			Void	
9a			Void	
10				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.1

10a	→	MEASUREMENT REPORT	See specific message contents for this message
11	←	UE CAPABILITY ENQUIRY	Use default message.
12	→	UE CAPABILITY INFORMATION	Use default message.
13	←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
14	←→	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108.

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2 shall be in accordance with the default SIBs as specified in TS 34.108.

MEASUREMENT REPORT (Step 2)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

MEASUREMENT REPORT (Step 5a)

NOTE 1: UE may optionally include Cell measured results IE for Cell 1

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	UE may optionally include report for Cell 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

MEASUREMENT REPORT (Step 10a)

NOTE 1: UE may optionally include Cell measured results IE for Cell 2

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	UE may optionally include report for Cell 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

8.3.4.1.5 Test requirement

After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 3 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 5 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 10 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 11 the UE shall transmit a UE CAPABILITY INFORMATION message.

8.3.4.2 Active set update in soft handover: Radio Link removal

8.3.4.2.1 Definition

8.3.4.2.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

1> perform the physical layer synchronisation procedure B as specified in TS 25.214;

1> if the radio link currently considered to be the serving HS-DSCH radio link is indicated in the IE "Radio Link Removal Information":

2> no longer consider any radio link as the serving HS-DSCH radio link;

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronisation B, as specified in TS 25.214;

1> the procedure ends on the UE side.

…

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.2.3 Test purpose

1. To confirm that the UE continues to communicate with the SS on the remaining radio link after radio link removal on the active set.

2. To confirm that the UE is not using the removed radio link to communicate with the SS.

8.3.4.2.4 Method of test

Initial Condition

System Simulator: 2 cells - both Cell 1 and Cell 2 are active

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

System Information Block type 11

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Time to trigger	5000

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

Test Procedure

Table 8.3.4.2

Parameter	Unit	Cell 1				Cell 2			
		T0	T1	T2	T3	T0	T1	T2	T3
UTRA RF Channel Number		Mid Range Test Frequency				Mid Range Test Frequency			
CPICH Ec	dBm/3.84MHz	-60	-60	-75	-60	-75	-60	-60	OFF

Table 8.3.4.2 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

At the start of the test, the UE goes to connected mode and establishes a radio access bearer service in the CELL_DCH state in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.2. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS remove the radio link from cell 1 and then SS transmits an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed.

When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 2. The UE shall transmit a UE CAPABILITY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.2 so as to generate a radio link failure condition. The UE shall detect the radio link failure UE shall re-select to cell 1 and transmit a CELL UPDATE message. SS transmits a CELL UPDATE CONFIRM message after it receive CELL UPDATE message from UE. Then the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.2
2	→		MEASUREMENT REPORT	See specific message contents for this message
3	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID in cell 2)
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, without interfering with existing connections on the radio link in cell 1.
5				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.2
6	→		MEASUREMENT REPORT	See specific message contents for this message
7	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information".
8	→		ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 1.
9	←		UE CAPABILITY ENQUIRY	Use default message.

10	→	UE CAPABILITY INFORMATION	Use default message.
11	←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
12			SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.2
13	→	CELL UPDATE	UE sends this message in cell 1.
14	←	CELL UPDATE CONFIRM	See message content.
15	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
16	←→	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108:

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2 shall be in accordance with the default SIBs as specified in TS 34.108.

MEASUREMENT REPORT (Step 2)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in Annex A with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 7)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to the same P-CPICH scrambling code assigned for cell 1

CELL UPDATE (Step 13)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
AM_RLC error indication (RB2, RB3 or RB4)	Not checked
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 14)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator UplinkDPCH Info	CELL_DCH Set to the same values as RADIO BEARER SETUP message for "Packet to CELL_DCH from CELL_FACH in PS" or "Non speech to CELL_DCH from CELL_FACH in CS" or "Speech to CELL_DCH from CELL_FACH in CS"
Downlink information common for all radio links	Set to the same values as RADIO BEARER SETUP message for "Packet to CELL_DCH from CELL_FACH in PS" or "Non speech to CELL_DCH from CELL_FACH in CS" or "Speech to CELL_DCH from CELL_FACH in CS"
Downlink information for each radio link list	Set to the same values as RADIO BEARER SETUP message for "Packet to CELL_DCH from CELL_FACH in PS" or "Non speech to CELL_DCH from CELL_FACH in CS" or "Speech to CELL_DCH from CELL_FACH in CS"

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 15)

Use the same message found in TS 34.108 clause 9, with the exceptions of the following IEs:

Information Element	Value/remark
Uplink counter synchronisation info	This IE is not checked.

8.3.4.2.5 Test requirement

After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 3 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 5 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 7 the UE shall remove the radio link from cell 1 and it shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC.

After step 10 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 12 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "radio link failure".

After step 14, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

8.3.4.3 Active set update in soft handover: Combined radio link addition and removal

8.3.4.3.1 Definition

8.3.4.3.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following. The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

1> perform the physical layer synchronisation procedure B as specified in TS 25.214;

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronization B, specified in TS 25.214;

…

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.3.3 Test purpose

1. To confirm that the UE continues to communicate with the SS on the added radio link and removes radio link which exists prior to the execution of active set update procedure.

8.3.4.3.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1, Cell 2 and Cell 3 are active, with downlink transmission power settings according to columns "T0" in table 8.3.4.3.

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE [Active set is not full.]

Specific Message Content

For system information block 11 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.

System Information Block type 11

Use same message sub-clause 6.1 of TS34.108, with following exception:

Information Element	Value/remark
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Time to trigger	5000

Test Procedure

Table 8.3.4.3

Parameter	Unit	Cell 1					Cell 2					Cell 3				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
UTRA RF Channel Number		Mid Range Test Frequency					Mid Range Test Frequency					Mid Range Test Frequency				
CPICH Ec	dBm/ 3.84 MHz	-60	-60	-60	OFF	-60	-80	-60	-60	OFF	-70	-80	-80	-60	-60	OFF

Table 8.3.4.3 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution.

The UE goes to connected mode and establishes a radio access bearer in the CELL_DCH state in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.3. UE transmits a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE in cell 1 an ACTIVE SET UPDATE message which includes IE "Radio Link Addition Information", indicating the addition of cell 2 into the active set, on DCCH using AM RLC.

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.3. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message which includes IE "Radio Link Addition Information" and IE "Radio Link Removal Information", indicating the removal of cell 2 and addition of cell 3 into the active set, on DCCH using AM RLC.

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links and then the UE removes the radio link specified in an ACTIVE SET UPDATE message. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.3. The UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE “Intra-frequency event identity” which is set to ‘1b’ in the SYSTEM INFORMATION BLOCK TYPE 11.

After the MEASUREMENT REPORT message is received, the SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond to this message through the DPCH in cell 3. The UE shall transmit a UE CAPABILITY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.3. The UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3 according to IE “Intra-frequency event identity” which is set to ‘1b’ in the SYSTEM INFORMATION BLOCK TYPE 11.

After the MEASUREMENT REPORT is received, the SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond to this message through the DPCH in cell 1. The UE shall transmit a UE CAPABILITY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a				SS configures the initial active set with only cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.3
0b	→		MEASUREMENT REPORT	See specific message contents for this message
0c	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information" for cell 2.
0d	→		ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2.
1				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.3
2	→		MEASUREMENT REPORT	See specific message contents for this message
3	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information" for cell 3 and IE "Radio Link Removal Information" for cell 2.
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link in cell 3 and removes the old radio link in cell 2.
4a				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.3
4b	→		MEASUREMENT REPORT	See specific message contents for this message.
5	←		UE CAPABILITY ENQUIRY	Use default message.
6	→		UE CAPABILITY INFORMATION	Use default message.
7	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
8				SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.3
8a	→		MEASUREMENT REPORT	See specific message contents for this message.
9	←		UE CAPABILITY ENQUIRY	Use default message.
10	→		UE CAPABILITY INFORMATION	Use default message.
11	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.

Specific Message Content

MEASUREMENT REPORT (Step 0b)

NOTE 1: Cell measured results for cells 1 and 2 may appear in either order (i.e. cell 1 then cell 2 or cell 2 then cell 1)

NOTE 2: Cell measured results for cell 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 0c)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Set to same code as assigned for cell 2	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	No code change	
- TPC Combination Index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

MEASUREMENT REPORT (Step 2)

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order.

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Set to same code as assigned for cell 3	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	No code change	
- TPC Combination Index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only
Radio link removal information		
- Primary CPICH Info		
- Primary Scrambling Code	Set to same code as assigned for cell 2	

MEASUREMENT REPORT (Step 4b)

NOTE 1: UE may optionally include Cell measured results IE for Cell 1 and 2.

NOTE 2: Cell measured results for cells 1and 2 may appear in any order.

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	UE may optionally include report for Cell 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	UE may optionally include report for Cell 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

MEASUREMENT REPORT (Step 8a)

NOTE: UE may optionally include Cell measured results IE for Cell 3.

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	UE may optionally include report for Cell 3
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

8.3.4.3.5 Test requirement

At step 0a the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 0c the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 3 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 4a the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 5 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH in cell 3.

After step 8 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 9 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH in cell 1.

8.3.4.4 Active set update in soft handover: Invalid Configuration

8.3.4.4.1 Definition

8.3.4.4.2 Conformance requirement

If any of the following conditions are valid:

…

- a radio link in the IE "Radio link addition information" is also present in the IE "Radio Link Removal Information"; and/or

…

- the variable INVALID_CONFIGURATION is set to TRUE:

the UE shall:

1> keep the active set as it was before the ACTIVE SET UPDATE message was received;

1> transmit an ACTIVE SET UPDATE FAILURE message on the DCCH using AM RLC;

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE FAILURE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> set the IE "failure cause" to "Invalid configuration";

1> When the ACTIVE SET UPDATE FAILURE message has been submitted to lower layers for transmission:

2> the procedure ends on the UE side.

Reference

3GPP TS 25.331 clause 8.3.4.5

8.3.4.4.3 Test purpose

1. To confirm that the UE transmits an ACTIVE SET UPDATE FAILURE message on the DCCH using AM RLC, if the received ACTIVE SET UPDATE message includes a radio link which is specified in both IE "Radio Link Addition Information" and IE "Radio Link Removal Information".

8.3.4.4.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active.

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

Test Procedure

Table 8.3.4.4

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec	dBm/3.84MHz	-60	-60	-75	-60

Table 8.3.4.4 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE establishes a radio access bearer in the CELL_DCH state in cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.4. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. SS then transmits an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the same primary scrambling code in IE "Primary CPICH Info" of both IE "Radio Link Addition Information" and IE "Radio Link Removal Information". When the UE receives this message, it transmits an ACTIVE SET UPDATE FAILURE message which is set to "Invalid configuration" in IE "failure cause" on the uplink DCCH using AM RLC to the SS. UE then send another MEASUREMENT REPORT to SS 4s after step 2. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.4
2	→		MEASUREMENT REPORT	
3	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes the same primary scrambling code in IE "Primary CPICH Info" of both IE "Radio Link Addition Information" and IE "Radio Link Removal Information".
4	→		ACTIVE SET UPDATE FAILURE	The message shall state "Invalid configuration" in IE "failure cause".
5	→		MEASUREMENT REPORT	
6	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in the default message content clause, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Set to same code as assigned for cell 2	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Reference TS 34.108 clause 6.10 Parameter set	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only
Radio link removal information		
- Primary CPICH Info		
- Primary Scrambling Code	Set to same code as assigned for cell 2	

ACTIVE SET UPDATE FAILURE (Step 4)

Information Element	Value/remark
Integrity check info	Not Checked
Failure cause	Check to see if it's set to 'Invalid configuration'

8.3.4.4.5 Test requirement

After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 3 the UE shall transmit an ACTIVE SET UPDATE FAILURE message, setting "Invalid configuration" in IE "failure cause" and sent on the uplink DCCH using AM RLC.

After step 4 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC, 4s after step 2.

8.3.4.5 Active set update in soft handover: Reception of an ACTIVE SET UPDATE message in wrong state

8.3.4.5.1 Definition

8.3.4.5.2 Conformance requirement

If the UE is in another state than CELL_DCH state upon reception of the ACTIVE SET UPDATE message, the UE shall perform procedure specific error handling as follows. The UE shall:

1> transmit a ACTIVE SET UPDATE FAILURE message on the uplink DCCH using AM RLC;

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE FAILURE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> set the IE "failure cause" to the cause value "protocol error";

1> include the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state";

1> when the ACTIVE SET UPDATE FAILURE message has been delivered to lower layers for transmission:

2> continue with any ongoing processes and procedures as if the ACTIVE SET UPDATE message has not been received;

2> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.4.0

8.3.4.5.3 Test purpose

1. To confirm that the UE transmits an ACTIVE SET UPDATE FAILURE message when it receives an ACTIVE SET UPDATE message in any state other then CELL_DCH.

8.3.4.5.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 2 are active.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.4.5

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel Number		Mid Range Test Frequency	Mid Range Test Frequency
CPICH Ec	dBm/3.84MHz	-60	-70

Table 8.3.4.5 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

At the start of the test, the UE establishes a radio access bearer service in the CELL_FACH state in cell 1. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" indicating the addition of cell 2 into the active set. When the UE receives this message, UE shall transmit ACTIVE SET UPDATE FAILURE message, with the IE "failure cause" set to the cause value "protocol error" and includes the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state", on the uplink DCCH using AM RLC. UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a	←		MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b	→		MEASUREMENT REPORT	
2			Void	
3	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information".
4	→		ACTIVE SET UPDATE FAILURE	IE "failure cause" set to the cause value "protocol error" and includes the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state".
5	→		MEASUREMENT REPORT	
6	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Content

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark	Version
Measurement Identity	1	
Measurement Command	Setup	
Measurement reporting mode		
- Measurement Report Transfer Mode	Acknowledged mode RLC	
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting	
Additional measurement list	Not Present	
CHOICE measurement type	Traffic Volume Measurement	
- Traffic volume measurement object list		
- Uplink transport channel type	RACHorCPCH	R99 and Rel-4 only
	RACH	Rel-5
- UL Target Transport Channel ID	Not Present	
- Traffic volume measurement quantity		
- Measurement quantity	RLC Buffer Payload	
- Time Interval to take an average or a variance	Not Present	
- Traffic volume reporting quantity		
- RLC Buffer Payload for each RB	True	
- Average of RLC Buffer Payload for each RB	False	
- Variance of RLC Buffer Payload for each RB	False	
- Measurement validity		
- UE state	All states	
- CHOICE Reporting criteria	Periodical Reporting Criteria	
- Amount of reporting	Infinity	
- Reporting interval	8000	
DPCH compressed mode status	Not Present	

MEASUREMENT REPORT (Step 0b and 5)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions and the order in which the RBs are reported is not checked:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Set to same code as assigned for cell 2	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	0	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Reference TS 34.108 clause 6.10 Parameter set	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

8.3.4.5.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 3 the UE shall transmit an ACTIVE SET UPDATE FAILURE message on the DCCH. In this message, the value "Message not compatible with receiver state" shall be set in IE "Protocol Error Information".

After step 4, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

8.3.4.6 Void

8.3.4.7 Active set update in soft handover: Invalid Message Reception

8.3.4.7.1 Definition

8.3.4.7.2 Conformance Requirement

If the ACTIVE SET UPDATE message contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

1> transmit a ACTIVE SET UPDATE FAILURE message on the uplink DCCH using AM RLC;

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE FAILURE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Rejected transactions" in the variable TRANSACTIONS; and

1> set the IE "failure cause" to the cause value "protocol error";

1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION;

1> when the ACTIVE SET UPDATE FAILURE message has been delivered to lower layers for transmission:

2> continue with any ongoing processes and procedures as if the invalid ACTIVE SET UPDATE message has not been received;

2> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.7.3 Test Purpose

1. To confirm that the UE retains its active set list and transmits an ACTIVE SET UPDATE FAILURE message when it receives an invalid ACTIVE SET UPDATE message.

8.3.4.7.4 Method of test

Initial Condition

System Simulator: 2 cells – both cell 1 and cell 2 are active.

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE (Integrity protection algorithm is not applied at the start of test)

Test Procedure

Table 8.3.4.7

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec	dBm/3.84MHz	-60	-60	-75	-60

Table 8.3.4.7 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE establishes a radio access bearer in CELL_DCH in cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.7. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. SS transmits an ACTIVE SET UPDATE message which contains an unexpected critical message extension. The UE shall transmit an ACTIVE SET UPDATE FAILURE message, stating the reason " Message extension not comprehended " in the IE "Protocol error information". UE then send another MEASUREMENT REPORT to SS 4s after step 2. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.7
2	→		MEASUREMENT REPORT	See specific Message contents
3	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which does not include any IEs except IE "Message Type"
4	→		ACTIVE SET UPDATE FAILURE	The message shall state "Message extension not comprehended " in IE "protocol error information".
5	→		MEASUREMENT REPORT	See specific Message contents
6	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT REPORT (Step 2 &5)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

Use the ACTIVE SET UPDATE message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Critical extensions	'FF'H

ACTIVE SET UPDATE FAILURE (Step 4)

Information Element	Value/remark
Protocol Error Information	
- Protocol Error Cause	Message extension not comprehended

8.3.4.7.5 Test Requirement

After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 3 the UE shall transmit an ACTIVE SET UPDATE FAILURE message on the DCCH. In this message, the value "Message extension not comprehended" shall be set in IE "Protocol Error Information".

After step 4 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC, 4s after step 2.

8.3.4.8 Active set update in soft handover: Radio Link addition in multiple radio link environment

8.3.4.8.1 Definition

8.3.4.8.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following. The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> perform the physical layer synchronisation procedure B as specified in TS 25.214;

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronization B, specified in TS 25.214;

…

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.8.3 Test purpose

To confirm that the UE communicates with the SS on all radio link in the active set and keeps the connection when some of the radio links are faded out.

8.3.4.8.4 Method of test

Initial Condition

System Simulator: 4 cells - Cell 1, 2, 3 and 7 are active. The chip-timing between the cells shall always be within ±148 chip.

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

Test Procedure

Table 8.3.4.8-1

Cell	UTRA RF Channel Number
Cell 1	Mid Range Test Frequency
Cell 2	Mid Range Test Frequency
Cell 3	Mid Range Test Frequency
Cell 7	Mid Range Test Frequency

Table 8.3.4.8-2

		Time							
Parameter	Unit	T0	T1	T2	T3	T4	T5	T6	T7
Cell 1 CPICH Ec	dBm/3.84MHz	-60	-60	-60	-60	-70	-70	-70	-60
Cell 2 CPICH Ec	dBm/3.84MHz	-70	-60	-60	-60	-60	-70	-70	-70
Cell 3 CPICH Ec	dBm/3.84MHz	-70	-70	-60	-60	-60	-60	-70	-70
Cell 7 CPICH Ec	dBm/3.84MHz	-70	-70	-70	-60	-60	-60	-60	-70

Table 8.3.4.8-1 defines the UTRA RF Channel Number for the different cells. Table 8.3.4.8-2 illustrates the downlink power to be applied for the 4 cells at various time instants of the test execution.

Initially, the UE goes to connected mode and establishes a radio access bearer in CELL_DCH state in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.8-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2, according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC without waiting for the physical channel synchronisation B.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1 and cell 2. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.8-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3, according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 and cell 2 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC without waiting for the physical channel synchronisation B.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1, cell 2 and cell 3. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.8-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 7, according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 7 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1, cell 2 and cell 3 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC without waiting for the physical channel synchronisation B.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1, cell 2, cell 3 and cell 7. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.8-2. The UE shall continue to communicate through at least cell 2, cell 3 and cell 7. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 1.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 2, cell 3 and cell 7. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.8-2. The UE shall continue to communicate through at least cell 3 and cell 7. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 2.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 3 and cell 7. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T6" in table 8.3.4.8-2. The UE shall continue to communicate through at least cell 7. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 3.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 7. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM.

SS configures its downlink transmission power settings according to columns "T7" in table 8.3.4.8-2. The UE shall continue to communicate through at least cell 1. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 7.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.8-2.
2	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2)
3	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio link with Primary CPICH info used for the reference ID in cell 2)
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure new radio link to cell 2 without interfering with existing connections on the radio link in cell 1.
5	←		UE CAPABILITY ENQUIRY	Use default message. Sent on cell 1 and cell 2.
6	→		UE CAPABILITY INFORMATION	Use default message.
7	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
8				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.8-2.

Step	Direction		Message	Comment
	UE	SS		
9	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 3)
10	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 and cell 2 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio link with Primary CPICH info used for the reference ID in cell 3)
11	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure new radio link to cell 3 without interfering with existing connections on the radio links in cell 1 and cell 2.
12	←		UE CAPABILITY ENQUIRY	Use default message. Sent on cell 1, cell 2 and cell 3.
13	→		UE CAPABILITY INFORMATION	Use default message.
14	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
15				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.8-2.

Step	Direction		Message	Comment
	UE	SS		
16	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 7)
17	←		ACTIVE SET UPDATE	SS transmits this message in cell 1, cell 2 and cell 3 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio link with Primary CPICH info used for the reference ID in cell 7)
18	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure new radio link to cell 7 without interfering with existing connections on the radio links in cell 1, cell 2 and cell 3.
19	←		UE CAPABILITY ENQUIRY	Use default message. Sent on cell 1, cell 2, cell 3 and cell 7.
20	→		UE CAPABILITY INFORMATION	Use default message.
21	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
22				SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.8-2.
23	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for Cell 1)
24	←		UE CAPABILITY ENQUIRY	Use default message. Sent on cell 2, cell 3 and cell 7.
25	→		UE CAPABILITY INFORMATION	Use default message.
26	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
27				SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.8-2.
28	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for Cell 2)
29	←		UE CAPABILITY ENQUIRY	Use default message. Sent on cell 3 and cell 7.
30	→		UE CAPABILITY INFORMATION	Use default message.
31	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
32				SS configures its downlink transmission power settings according to columns "T6" in table 8.3.4.8-2.
33	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for Cell 3)
34	←		UE CAPABILITY ENQUIRY	Use default message. Sent on cell 7.
35	→		UE CAPABILITY INFORMATION	Use default message.
36	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
37				SS configures its downlink transmission power settings according to columns "T7" in table 8.3.4.8-2.
38	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 7)
39	←		UE CAPABILITY ENQUIRY	Use default message. Sent on cell 1.
40	→		UE CAPABILITY INFORMATION	Use default message.
41	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
42	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	4
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	4
- Intra-frequency event identity	1b
- Triggering condition 1	Active set cells
- Triggering condition 2	Not Present
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	4

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2, cell 3, and cell 7 shall be in accordance with the default SIBs as specified in TS 34.108.

MEASUREMENT REPORT (Step 2)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 7. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	Cell 2.
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1 and 2 may appear in any order.

NOTE 2: Cell measured results for cells 3 and 7 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present they may appear in any order.

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information	Cell 2	
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

MEASUREMENT REPORT (Step 9)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 7. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	Cell 3.
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order.

NOTE 2: Cell measured results for cell 7 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

ACTIVE SET UPDATE (Step 10)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information	Cell 3	
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

MEASUREMENT REPORT (Step 16)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 7. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	Cell 7.
- Primary scrambling code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2, 3 and 7 may appear in any order.

ACTIVE SET UPDATE (Step 17)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information	Cell 7	
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

MEASUREMENT REPORT (Step 23)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	Cell 2. See Note 1.
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 7. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	Cell 1.
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 2, 3 and 7 may appear in any order.

NOTE 2: Cell measured results for cell 1 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

MEASUREMENT REPORT (Step 28)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	Cell 3. See Note 1.
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 7. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	Cell 2.
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 3 and 7 may appear in any order.

NOTE 2: Cell measured results for cell 1 and cell 2 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present they may appear in any order.

MEASUREMENT REPORT (Step 33)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	Cell 7.
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	Cell 3.
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1. 2 and 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present they may appear in any order.

MEASUREMENT REPORT (Step 38)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	Cell 1.
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 7. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	Cell 7.
- Primary scrambling code	Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 2, 3 and 7 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present they may appear in any order.

8.3.4.8.5 Test requirement

After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 3 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 5 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 8 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 10 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 12 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 15 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 17 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 19 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 22 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 24 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 27 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 29 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 32 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 34 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 37 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 39 the UE shall transmit a UE CAPABILITY INFORMATION message.

8.3.4.9 Active set update in soft handover: Radio Link removal (stop of HS-PDSCH reception)

8.3.4.9.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.3.4.9.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following. The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

1> perform the physical layer synchronisation procedure B as specified in TS 25.214;

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronization B, specified in TS 25.214;

…

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.9.3 Test purpose

1. To confirm that the UE continues to communicate with the SS on the remaining radio link after radio link removal on the active set.
2. To confirm that UE removes the HS-PDSCH configuration when the serving HS-DSCH radio link is removed.
3. To confirm that the UE is not using the removed radio link to communicate with the SS.

8.3.4.9.4 Method of test

Initial Condition

System Simulator: 2 cells - both Cell 1 and Cell 2 are active

Specific Message Contents

System Information Block type 11

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Time to trigger	5000

UE: PS-DCCH+DTCH_DCH_HSDSCH (state 6-17) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.4.9

Parameter	Unit	Cell 1				Cell 2			
		T0	T1	T2	T3	T0	T1	T2	T3
UTRA RF Channel Number		Mid Range Test Frequency				Mid Range Test Frequency			
CPICH Ec	dBm/3.84MHz	-60	-60	-75	-60	-75	-60	-60	OFF

Table 8.3.4.9 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

At the start of the test, the UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.9. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.9. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS remove the radio link from cell 1 and then SS transmits an

ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed.

When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 2. The UE shall transmit a UE CAPABILITY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.9 so as to generate a radio link failure condition. The UE shall detect the radio link failure UE shall re-select to cell 1 and transmit a CELL UPDATE message. SS transmits a CELL UPDATE CONFIRM message after it receive CELL UPDATE message from UE. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities..

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.9
2	→		MEASUREMENT REPORT	See specific message contents for this message
3	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID in cell 2)
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, without interfering with existing connections on the radio link in cell 1.
5				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.9
6	→		MEASUREMENT REPORT	See specific message contents for this message
7	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information".
8	→		ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 1 and stop HS-PDSCH reception.
9	←		UE CAPABILITY ENQUIRY	Use default message.

10	→	UE CAPABILITY INFORMATION	Use default message.
11	←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
12			SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.9
13	→	CELL UPDATE	UE sends this message in cell 1.
14	←	CELL UPDATE CONFIRM	See message content.
15	→	UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

MEASUREMENT REPORT (Step 2)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to the parameter set in TS 34.108	
- Code number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not present	
- TPC combination index	0	
- SSDT cell identity	Not present	R99 and Rel-4 only
- Close loop timing adjustment mode	Not present	
- TFCI combining indicator	FALSE	
- SCCPCH information for FACH	Not present	R99 and Rel-4 only

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 7)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to the same P-CPICH scrambling code assigned for cell 1

CELL UPDATE (Step 13)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 14)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

8.3.4.9.5 Test requirement

After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 3 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 5 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 7 the UE shall remove the radio link from cell 1 and it shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC. UE shall stop HS-DSCH reception.

After step 10 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 12 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "radio link failure".

After step 14, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

8.3.4.10 Active set update in soft handover: Radio Link addition and serving HS-DSCH / E-DCH cell change

8.3.4.10.1 Definition and applicability

All UEs which support FDD and HS-PDSCH and E-DPDCH.

8.3.4.10.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following. The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> perform the physical layer synchronisation procedure B as specified in TS 25.214;

…

1> if the IE "E-HICH information" is included:

2> store this E-HICH configuration for the concerning radio link.

1> if the IE "E-HICH information" is included:

2> store this E-RGCH configuration for the concerning radio link, if included.

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28 in TS 25.331;

1> if the radio link currently considered to be the serving HS-DSCH radio link is indicated in the IE "Radio Link Removal Information":

2> no longer consider any radio link as the serving HS-DSCH radio link;

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25 in TS 25.331.

1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6 in TS 25.331:

2> if the IEs "Δ_{ACK}", "Δ_{NACK}", and "HARQ_preamble_mode" are present, act on the received information elements;

2> if the new H-RNTI and "Primary CPICH info" are included:

3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell.

2> if the IE "MAC-hs reset indicator" is included:

3> reset the MAC-hs entity.

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25 in TS 25.331.

1> if the IE "E-DCH reconfiguration information" is included:

2> if the IE "E-DCH RL Info other cells" is present:

3> if the IE "E-HICH Information" is present:

4> store the E-HICH and E-RGCH information (if present), contained therein, for the indicated radio link.

3> if the IE "E-HICH release indicator" is present:

4> delete the stored E-HICH, E-AGCH and E-RGCH (if any) configurations.

3> if the IE "E-RGCH release indicator" is set present:

4> delete the stored E-RGCH configuration for this RL.

2> if the IE "E-DCH RL Info new serving cell" is present:

3> consider the cell indicated in "Primary CPICH info" as serving E-DCH radio link and no longer consider any other radio link as serving E-DCH radio link;

3> store the E-HICH and E-RGCH information (if present), contained therein, for the new serving E-DCH radio link;

3> if the IE "E-RGCH release indicator" is present:

4> delete the stored E-RGCH configuration for this RL.

3> store the newly received E-AGCH configuration.

2> if the IEs "E-DPCCH/DPCCH power offset" and/or "Reference E-TFCI PO" and/or "Power offset for scheduling info" are present, act on the received information elements.

2> if the serving E-DCH radio link was another radio link than this radio link prior to reception of the message:

3> if the IE "New Primary E-RNTI" is not included:

4> clear the Primary E-RNTI stored in the variable E_RNTI.

3> if the IE "New Secondary E-RNTI" is not included:

4> clear the Secondary E-RNTI stored in the variable E_RNTI.

1> if the radio link currently considered to be the serving E-DCH radio link is indicated in the IE "Radio Link Removal Information":

2> no longer consider any radio link as the serving E-DCH radio link.

…

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronization B, specified in TS 25.214;

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.10.3 Test purpose

To confirm that the UE performs a radio link addition with serving HS-DSCH / E-DCH serving cell change according to the received ACTIVE SET UPDATE message.

8.3.4.10.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A13, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH
- UE supports E-DPDCH

Test Procedure

Table 8.3.4.10

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec	dBm/3.84MHz	-60	-70	-70	-60

Table 8.3.4.10 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The downlink transmission power is set according to values in column “T0” in table 8.3.4.10. The UE has a radio bearer mapped to the E-DCH/HS-DSCH and the signalling radio bearers mapped on E-DCH/DCH in cell 1.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.10. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity" set to 1a.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which adds a second radio link in cell 2 and also changes the E-DCH and HS-DSCH serving cell to cell 2. When the UE receives this message, the UE shall configure layer 1 to begin reception on DPCH as well as E-DCH transmission and HS-DSCH reception using the new radio link in cell 2. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

To check that the UE is sending to both cells of the active set, the SS triggers the UE to send a UE CAPABILITY INFORMATION which it receives from the other cells than it has received the ACTIVE SET UPDATE COMPLETE.

SS calls for generic procedure C.3 to check that the UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3	SS			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.10
4	→		MEASUREMENT REPORT	See specific message contents for this message
5	←		ACTIVE SET UPDATE	The SS instructs the UE to add cell 2 in the active set and perform a serving E-DCH and HS-DSCH cell change to cell 2
6	SS			At the activation time, the SS changes the serving E-DCH and HS-DSCH radio link to cell 2 and performs MAC-hs reset.
7	→		ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2 and performs a serving E-DCH and HS-DSCH cell change to cell 2. SS receives this message from cell 2.
7a				SS is reconfigured to listen on cell 1
7b	←		UE CAPABILITY ENQUIRY	
7c	→		UE CAPABILITY INFORMATION	SS receives this message from cell 1
7d	←		UE CAPABILITY INFORMATION CONFIRM	
8	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

MEASUREMENT REPORT (Step 4)

Use the same message as specified in 34.108 except for the following:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 5)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink	

	DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	1	
- Close loop timing adjustment mode	Not Present	
- TFCI Combining Indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not Present	
- HS-SCCH Channelisation Code Information		
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Measurement Power Offset	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- HARQ Info	Not Present	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information	Not Present	
- E-DCH RL Info other cells	Not Present	

8.3.4.10.5 Test requirement

After step 3 the UE shall transmit a MEASUREMENT REPORT message.

After step 6 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message.

8.3.4.11 Active set update in soft handover: Radio Link addition/removal and serving HS-DSCH / E-DCH cell change, with discontinuous uplink transmission

8.3.4.11.1 Definition and applicability

All UEs which support FDD and UL DTX

8.3.4.11.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

…

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronisation B, as specified in TS 25.214;

1> the procedure ends on the UE side.

…

1> if any of the IEs "DTX-DRX timing information" or "DTX-DRX information" are stored in the UE:

2> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

…

If the UE receives RRC CONNECTION SETUP, ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> the UE shall determine the value for the DTX_DRX_STATUS variable.

The variable DTX_DRX_STATUS shall be set to TRUE only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> both variables HS_DSCH RECEPTION and E_DCH_TRANSMISSION are set to TRUE;

1> no DCH transport channel is configured;

1> the variable DTX_DRX_PARAMS is set;

1> the UE has received the IE "DTX-DRX timing information".

If any of the above conditions is not met and the variable DTX_DRX_STATUS is set to TRUE, the UE shall:

1> set the variable DTX_DRX_STATUS to FALSE;

1> clear the variable DTX_DRX_PARAMS;

1> stop DTX-DRX mode related activities.

If variable DTX_DRX_STATUS is set to true and the serving HS-DSCH cell was changed as a result of the received message the UE shall instruct the physical layer to consider HS-SCCH orders were never received.

Whenever the variable DTX_DRX_STATUS is set to TRUE after receiving this message and the value of IE "DTX-DRX timing information" included in this message is not "Continue", the UE shall:

1> if the variable DTX_DRX_STATUS was set to TRUE before receiving this message:

2> re-configure the physical layer to perform discontinuous uplink DPCCH transmission and enable discontinuous downlink reception operations according to the variable DTX_DRX_PARAMS at the CFN corresponding to the frame boundary that is offset by the value of the IE "Enabling Delay" from the frame boundary where uplink transmission starts with new configuration;

2> let the MAC layer continue with the current restriction on E-DCH transmission and monitoring of absolute and relative grant channels from the frame boundary where the uplink transmission starts with the new configuration and for the duration of the IE "Enabling Delay".

1> else:

2> perform discontinuous uplink DPCCH transmission and enable discontinuous downlink reception operations by configuring the physical layer according to the variable DTX_DRX_PARAMS at the CFN corresponding to the frame boundary that is offset by the value of the IE "Enabling Delay" from the frame boundary where uplink transmission starts with new configuration.

1> configure the MAC layer to start restricting E-DCH transmissions and monitor absolute and relative grant channels at the CFN corresponding to the frame boundary that is offset by the value of IE "Enabling Delay" from the frame boundary where uplink transmission starts with new configuration taking into account the IEs "UE DTX DRX Offset", "MAC DTX Cycle", "MAC Inactivity Threshold" and "Inactivity Threshold for UE Grant Monitoring".

…

If the IE "DTX-DRX timing information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> if the CHOICE "timing" is set to "New timing":

2> use the newly received DTX-DRX timing configuration.

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

…

If the IE "DTX–DRX information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the contents of the IE in the variable DTX_DRX_PARAMS;

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34;

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple of the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple or a divisor of the value of the IE "CQI Feedback cycle, k"; or

1> if the value of the IE "UE DPCCH burst 1" is greater than the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DPCCH burst 2" is greater than the value of the IE "UE DTX cycle 2"; or

1> if the IE "UE DTX long preamble length" is set to 4 or 15 slots and the value of the IE "Inactivity Threshold for UE DTX cycle 2" is less than 4 TTIs (for 10ms E-DCH TTI) or 8 TTIs (for 2ms E-DCH TTI); or

1> if the IE "UE DRX cycle" is not an integer multiple or a divisor of the value of the IE "UE DTX cycle 1"; or

1> if the IE "DRX Information" is included in this message while the IE "DTX information" is not included in this message; or

1> if the value of the IE "UE DTX cycle 1" is not an integer multiple or a divisor of the value of the IE "MAC DTX cycle":

2> the UE behaviour is unspecified.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.3.4, 8.5.34, 8.6.6.38, 8.6.6.39

8.3.4.11.3 Test purpose

1. To confirm that the UE performs a radio link addition involving a HS-DSCH / E-DCH serving cell change, with discontinuous transmissions according to the received ACTIVE SET UPDATE message.

2. To confirm that the UE performs a further radio link addition in the absence of discontinuous transmission according to the received ACTIVE SET UPDATE message.

3. To confirm that UE performs further radio link removal of a non DTX-DRX cell, with discontinuous transmissions according to the received ACTIVE SET UPDATE message.

8.3.4.11.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1, 2 are active and cell 3 is switched off

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A20, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports DPCCH Discontinuous Transmission

Test Procedure

Table 8.3.4.11

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		T0	T1	T2	T3	T0	T1	T2	T3	T0	T1	T2	T3
UTRA RF Channel Number		Mid Range Test Frequency				Mid Range Test Frequency				Mid Range Test Frequency			
CPICH Ec	dBm/3.84MHz	-60	-70	-70	-70	-70	-60	-60	-60	OFF	OFF	-60	OFF

Table 8.3.4.11 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution.

The downlink transmission power is set according to values in column “T0” in table 8.3.4.11. The UE has a radio bearer mapped to the E-DCH/HS-DSCH with UL DTX configured and the signalling radio bearers mapped on E-DCH/DCH in cell 1.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.11. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity" set to 1a.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which adds a second radio link in cell 2 and also changes the E-DCH and HS-DSCH serving cell to cell 2. When the UE receives this message, the UE shall configure layer 1 to begin E-DCH transmission and HS-DSCH reception, with UL DPCCH discontinuous transmission, using the new radio link in cell 2. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used.

The SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the E-DCH in cell 1 and cell 2. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

The SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.11. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added for non CPC cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink F-DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID). As discontinuous transmission is not configured by ACTIVE SET UPDATE, the UE sets up continuous transmission on all cells.

To check that the UE is sending to all cells of the active set, the SS triggers the UE to send a UE CAPABILITY INFORMATION which it receives from the cells which received the ACTIVE SET UPDATE COMPLETE.

The SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.11. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 3.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 and 2 on DCCH using AM RLC which removes a radio link in cell 3. When the UE receives this message, the UE shall set up UL DPCCH discontinuous transmission on all cells. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used.

The SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the E-DCH in cell 1 and cell 2. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS calls for generic procedure C.3 to check that the UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	SS			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.10
2	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2)
3	←		ACTIVE SET UPDATE	The SS instructs the UE to add cell 2, with CPC enabled, in the active set, and perform a serving E-DCH and HS-DSCH cell change to cell 2
4	→		ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2. SS receives this message on cell 1. UE performs a serving E-DCH and HS-DSCH cell change to cell 2 with discontinuous transmission activated at the activation time.
5	SS			At the activation time, the SS changes the serving E-DCH and HS-DSCH radio link to cell 2 and performs MAC-hs reset.
6	SS			The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used (i.e. duration of 10 consecutive DTX cycle 2).
7				SS is reconfigured to listen on cell 2
8	←		UE CAPABILITY ENQUIRY	
9	→		UE CAPABILITY INFORMATION	SS receives this message on cell
10	←		UE CAPABILITY INFORMATION CONFIRM	
11	SS			SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.11
12	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 3
13	←		ACTIVE SET UPDATE	SS transmits this message on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink F-DPCH information and other optional parameters relevant for the additional radio link with Primary CPICH info used for the reference ID in cell 3). Note that discontinuous transmission is not configured for this cell and subsequently all cells in the active set
14	→		ACTIVE SET UPDATE COMPLETE	The UE shall add new radio link to cell 3 without interfering with existing connections on the radio links in cell 1 and cell 2. CPC should be deactivated

14a	SS		The SS waits to allow sufficient time for Activation time in Step no: 13 to expire, and then verifies that the time between 11 consecutive CQI indications is 40ms. (i.e. duration of 10 consecutive CQI feedback cycles).
15			SS is reconfigured to listen on cell 2
16	←	UE CAPABILITY ENQUIRY	Use default message sent on cell 2.
17	→	UE CAPABILITY INFORMATION	SS receives this message on cell 2
18	←	UE CAPABILITY INFORMATION CONFIRM	Use default message
19		VOID	
19a	SS		SS configures its downlink transmission power settings according to columns “T3” in table 8.3.4.11
19	SS		SS configures its downlink transmission power settings according to columns “T3” in table 8.3.4.11
20	→	MEASUREMENT REPORT	See specific message contents for this message (event ‘1b’ for cell 3)
21	←	ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information" with CPC enabled, in the active set.
22	→	ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 3.
23	SS		The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used (i.e. duration of 10 consecutive DTX cycle 2).
24	←	UE CAPABILITY ENQUIRY	Use default message sent on cell 1 and cell 2.
25	→	UE CAPABILITY INFORMATION	SS receives this message on cell 2
26	←	UE CAPABILITY INFORMATION CONFIRM	Use default message
27	←→	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency measurement reporting criteria - Reporting deactivation threshold	3

MEASUREMENT REPORT (Step 2)

Use the same message as specified in 34.108 except for the following:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	Cell 1. See Note 1
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is present
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	Cell 2
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 may appear in any order.

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
DTX-DRX timing information		
CHOICE *timing*	Continue	
DTX-DRX Information	Not Present	
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not Present	
- Code number	12	
- TPC Combination Index	1	
- TFCI Combining Indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not Present	
- HS-SCCH Channelisation Code Information		
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Measurement Power Offset	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- HARQ Info	Not Present	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	

- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information	Not Present	
- E-DCH RL Info other cells	Not Present	

MEASUREMENT REPORT (Step 12)

Use the same message as specified in 34.108 except for the following:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	Cell 1. See Note 1
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is present
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is present
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	Cell 3
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2, 3 may appear in any order.

ACTIVE SET UPDATE (Step 13)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
DTX-DRX timing information	Not Present	
DTX-DRX Information	Not Present	
DRX Information	Not Present	
HS-SCCH less information	Not Present	
Radio link addition information	Cell 3	
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not Present	
- Code number	12	
- TPC Combination Index	2	
- TFCI Combining Indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	

MEASUREMENT REPORT (Step 20)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	UE may optionally include report for Cell 3
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	Cell 3
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: UE may optionally include Cell measured results IE for Cell 3

ACTIVE SET UPDATE (Step 21)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to the same P-CPICH scrambling code assigned for cell 3
DTX-DRX timing information	
CHOICE *timing*	
- New timing	
- Enabling Delay	0
- UE DTX DRX Offset	1 if 2ms TTI selected, otherwise 0
DTX-DRX Information	
- CHOICE *E-DCH TTI length*	Unless stated otherwise, this should be set to 2ms if the UE supports 2ms TTI, or 10ms if the UE does not support 2ms TTI.
- UE DTX cycle 1	8 if 2ms TTI selected, otherwise 10
- UE DTX cycle 2	16 if 2ms TTI selected, otherwise 20
- MAC DTX cycle	8 if 2ms TTI selected, otherwise 10
- Inactivity Threshold for UE DTX cycle 2	
- UE DTX long preamble length	4
- MAC Inactivity Threshold	1 if 2ms TTI selected, otherwise 8
- CQI DTX Timer	32
- UE DPCCH burst_1	1
- UE DPCCH burst_2	1
DRX Information	
- UE DRX cycle	8 if 2ms TTI selected, otherwise 10
- Inactivity Threshold for UE DRX cycle	32
- Inactivity Threshold for UE Grant Monitoring	32 if 2ms TTI selected, otherwise 8
- UE DRX Grant Monitoring	TRUE
Uplink DPCCH slot format information	1

8.3.4.11.5 Test requirement

After step 1 the UE shall transmit a MEASUREMENT REPORT message.

At step 6 the time between 11 consecutive CQI indications shall be 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used.

After step 13 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message.

After step 19 the UE shall transmit a MEASUREMENT REPORT message with event 1B.

After step 21 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message

At step 23 the time between 11 consecutive CQI indications shall be 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used.

8.3.4.12 Active set update in soft handover: Radio Link addition/removal (stop and start of UL 16QAM)

8.3.4.12.1 Definition and applicability

All UEs which support FDD, E-DCH and UL 16 QAM.

8.3.4.12.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

1> perform the physical layer synchronisation procedure B as specified in [29];

1> if the IE "E-HICH information" is included:

2> store this E-HICH configuration for the concerning radio link.

1> if the IE "E-HICH information" is included:

2> store this E-RGCH configuration for the concerning radio link, if included.

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28;

1> if the IE "MAC-es/e reset indicator" is included in the IE "UL 16QAM configuration":

2> reset the MAC-es/e / MAC-is/i entity [15].

NOTE 1: If the IE "MAC-es/e reset indicator" is not included in the IE "UL 16QAM configuration" and 16QAM operations starts or stops, the UE behaviour is unspecified.

1> if the IE "UL 16QAM settings" is not included in the IE "16QAM configuration":

2> indicate to lower layers to stop any operation in 16QAM mode.

NOTE 2: If the IE "UL 16QAM configuration" is not included and 16QAM mode operation is currently ongoing, the UE behaviour is unspecified.

…

If the IE "E-DCH Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> for FDD:

2> if the IE "E-DPCCH Info" is included:

3> store the newly received E-DPCCH configuration.

2> if the IE "E-DPDCH Info" is included:

3> store the newly received E-DPDCH configuration.

2> if the IE "UL 16QAM settings" is not included:

3> indicate to lower layers to stop any operation in 16QAM mode.

…

If the IE "UL 16QAM settings" is included, the UE shall:

1> indicate to lower layers to operate in 16QAM mode, using the parameters contained in the IE.

…

Reference

3GPP TS 25.331 clause 8.3.4.3, 8.6.6.37, 8.6.6.42

8.3.4.12.3 Test purpose

1. To confirm that the UE starts E-DCH transmission using 16AM modulation according to the ACTIVE SET UPDATE message.

2. To confirm that the UE stops E-DCH transmission using 16AM modulation according to the ACTIVE SET UPDATE message.

8.3.4.12.4 Method of test

Initial Condition

System Simulator: 2 cells - both Cell 1 and Cell 2 are active

UE: Idle state (State 3 or State 7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH
- UE supports UL 16QAM
- UE fully supports F-DPCH

Specific Message Contents

System Information Block type 11

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Time to trigger	1000

Test Procedure

Table 8.3.4.12

Parameter	Unit	Cell 1					Cell 2				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
UTRA RF Channel Number		Mid Range Test Frequency					Mid Range Test Frequency				
CPICH Ec	dBm/3.84MHz	-60	-60	-60	-60	-75	-75	-60	-75	-60	-60

Table 8.3.4.12 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE is brought to the CELL_DCH state after a successful incoming call attempt. The SS follows the procedure in TS 34.108 clause 7.1.3 (Mobile Terminated), to set up a user RAB, but with the default RAB replaced by the one described in 34.108, clause 6.10.2.4.6.3: Interactive or background / PS RAB + SRBs mapped onto E-DCH and HS-DSCH.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.12. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" and UL 16QAM parameters.

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current downlink activities of existing radio links. Uplink should be configured for 16QAM transmission. The UE shall

transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. UL 16QAM transmission should be checked by SS

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.12. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS remove the radio link from cell 2 and then SS transmits an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed.

When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 2. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. UL 16 QAM is still active on cell 1.

SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.12. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information", excludes UL 16QAM settings and also changes the E-DCH and HS-DSCH serving cell to cell 2. When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1

The UE shall then transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC UE should revert to normal E-DCH transmission and this should be checked by SS on cell 2.

Expected main sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		Paging Type 1	
1a	→		RRC CONNECTION REQUEST	
1b	←		RRC CONNECTION SETUP	
1c	→		RRC CONNECTION SETUP COMPLETE	
1d	→		SERVICE REQUEST	
1e	←		AUTHENTICATION AND CIPHERING REQUEST	
1f	→		AUTHENTICATION AND CIPHERING RESPONSE	
1g	←		SECURITY MODE COMMAND	
1h	→		SECURITY MODE COMPLETE	
1i	←		ACTIVATE RB TEST MODE	
1j	→		ACTIVATE RB TEST MODE COMPLETE	
1k	←		RADIO BEARER SETUP	RRC RAB SETUP See specific message contents for this message
1l	→		RADIO BEARER SETUP COMPLETE	
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.12
3	→		MEASUREMENT REPORT	See specific message contents for this message (event ‘1a’ for cell 2)
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information" for cell 2 and “16QAM configuration” and “UL 16QAM settings”
5	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, with UL 16QAM active
6	←→		Check for UL 16QAM	SS should verify that UL 16QAM is activated on E-DCH according to the sub test procedure below
7				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.12
8	→		MEASUREMENT REPORT	See specific message contents for this message (event ‘1b’ for cell 2)
9	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information".
10	→		ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 2.
11	←→		Check for UL 16QAM on cell 1	SS should verify that UL 16QAM is activated on E-DCH according to the sub test procedure below
12				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.12
13	→		MEASUREMENT REPORT	See specific message contents for this message (event ‘1a’ for cell 2)

14	←	ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information" for cell 2 and specifically excludes “16QAM configuration” and “UL 16QAM settings”
15	→	ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2 but with UL 16 QAM inactive
16	←→	Check for UL QPSK	SS should verify that “normal” E-DCH transmission (QPSK) is activated on E-DCH according to the sub test procedure below
17			SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.12
18	→	MEASUREMENT REPORT	See specific message contents for this message (event ‘1b’ for cell 1)
19	←	ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information" for cell 1.
20	→	ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 1.
21	←→	Check for UL QPSK	SS should verify that “normal” E-DCH transmission (QPSK) is activated on E-DCH according to the sub test procedure below
22	←	DEACTIVATE RB TEST MODE	
23	→	DEACTIVATE RB TEST MODE COMPLETE	

Test Procedure to Check for UL 16QAM and QPSK

Refer to section 14.7.1a.3 for the specific parameters related to the loopback test for this section.

Expected sub sequence

Step	Direction		Message	Comments
	UE	SS		
1			(Void)	
2			(Void)	
3	←		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is set to 7992 (Note 4)
4	→		CLOSE UE TEST LOOP COMPLETE (DCCH)	
5	SS			The SS sets the HS-DSCH TFRC test point (N_{PDUs} = 1, *M* = QPSK, *N*codes = 1 and TFRI = 19). and the number of HARQ processes is 6 as per section 14.7.1a.3
6	←		DOWNLINK MAC-hs PDU (HS-DSCH#1)	For each DTCH mapped on HS-DSCH the SS sends test data. MAC-d PDU size is configured for 336 bits in the test case, please refer to Note 3.
7	→		SI indicating data	
8	←		Absolute grant	Grant value 31 for maximum bit rate
9	→		UPLINK RLC PDUs	If UL 16QAM is active then UE will use 2ms TTI transport block size table 2 (Note 1, also ref 25.331, section 10.3.6.99) with E-TFCI 103 (Note 2, Note 4). SS shall check the E-FTCI to verify 16QAM modulation on UL If UL QSPK is active then UE will use 2ms TTI transport block size table 0 (Note 1) with E-TFCI 119. SS will check E-TFCI to verify QPSK as per "normal" E-DCH transmission
10	←		Absolute grant	Grant value 1, removal of SG
11	←		OPEN UE TEST LOOP (DCCH)	
12	→		OPEN UE TEST LOOP COMPLETE (DCCH)	
13			(Void)	
14			(Void)	

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.
NOTE 3: The test data size is for DTCH mapped to E-DCH selected according to the MAC-d PDU size to be tested.
NOTE 4: The UL RLC SDU size is calculated as 25*320-8= 7992, such that TB size 8450 corresponding to E-TFCI 103 will be selected. With PLnon-max = 0.84, [((8450+24[CRC])/2[numblocks]) *3 [TC] +12[Trellis bits]*2[numblocks] = 25446 bits. 25446 * PLnon-max = 21374.64, this guarantees as per algorithm in 25.212 clause 4.8.4.1,16QAM to be selected $[2\times M_2+2\times M_4]$

Specific Message Contents

RADIO BEARER SETUP (Step 1k)

The contents of the Radio Bearer Setup message is identical to the message sub-type titled as "This IE is needed for "Packet to CELL_DCH / E-DCH / HS-DSCH using one multiplexing option (1/1) and SRBs mapped on E-DCH/HS-DSCH"" as found in 34.108 clause 9 with the following exception

Information Element	Value/remark
- RAB information for setup	
- RAB info	
- PDCP info	Not Present
E-DCH info	
- MAC-es/e reset indicator	TRUE
- E-DPCCH info	
- E-DPCCH/DPCCH power offset	1
- Happy bit delay condition	100 ms
- E-TFC Boost Info	Not Present
- E-DPDCH power interpolation	Not Present
- E-DPDCH info	
- E-TFCI table index	1
- E-DCH minimum set E-TFCI	9
- Reference E-TFCIs	5 E-TFCIs
- Reference E-TFCI	11
- Reference E-TFCI PO	4
- Reference E-TFCI	67
- Reference E-TFCI PO	18
- Reference E-TFCI	71
- Reference E-TFCI PO	23
- Reference E-TFCI	75
- Reference E-TFCI PO	26
- Reference E-TFCI	81
- Reference E-TFCI PO	27
- Maximum channelisation codes	2sf2and2sf4
- PLnon-max	0.84
- Scheduling Information Configuration	
- Periodicity for Scheduling Info – no grant	Not Present
- Periodicity for Scheduling Info – grant	Not Present
- Power Offset for Scheduling Info	0
- 3-Index-Step Threshold	Not Present
- 2-Index-Step Threshold	Not Present
- Scheduled Transmission configuration	
- 2ms scheduled transmission grant HARQ process allocation	Not Present
- Serving Grant	Not Present

MEASUREMENT REPORT (Step 3, 13)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	Not present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code number	F-DPCH code number as used in Cell1	
- TPC Combination Index	0	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
UL 16QAM configuration		
- BetaEd gain E-AGCH table selection	1	
- MAC-es/e reset indicator	TRUE	
- E-TFCI table index	Not Present	
E-DCH reconfiguration information same serving cell		
- E-DPCCH/DPCCH power offset	0	
- Reference E-TFCIs	2 E-TFCIs	
- Reference E-TFCI	11	
- Reference E-TFCI PO	4	
- Reference E-TFCI	83	
- Reference E-TFCI PO	16	

MEASUREMENT REPORT (Step 8)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 9)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to the same P-CPICH scrambling code assigned for cell 2
UL 16QAM configuration	
- BetaEd gain E-AGCH table selection	1
- MAC-es/e reset indicator	TRUE
- E-TFCI table index	Not Present

ACTIVE SET UPDATE (Step 14)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	Not present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code number	F-DPCH code number as used in Cell1	
- TPC Combination Index	0	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not Present	
- HS-SCCH Channelisation Code Information		
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Measurement Power Offset	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- HARQ Info	Not Present	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	
UL 16QAM configuration	Not Present	
- MAC-es/e reset indicator	TRUE	
- E-TFCI table index	Not Present	

MEASUREMENT REPORT (Step 18)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 19)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to the same P-CPICH scrambling code assigned for cell 1

8.3.4.12.5 Test requirement

At step 3 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 5 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure and active UL 16QAM.

At step 6 the UE shall transmit loop back data on E-DCH using 16QAM.

At step 8 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 10 the UE shall remove the radio link from cell 2 and it shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC.

At step 11 the UE shall transmit loop back data on E-DCH using 16QAM.

At step 13 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 15 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure and deactivate UL 16QAM.

At step 16 the UE shall transmit loop back data on E-DCH using QPSK.

At step 18 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 20 the UE shall remove the radio link from cell 1 and it shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC.

At step 21 the UE shall transmit loop back data on E-DCH using QPSK.

8.3.4.13 Active set update in soft handover: Radio Link addition/removal and serving HS-DSCH / E-DCH cell change, with activation/deactivation of 64QAM

8.3.4.13.1 Definition and Applicability

All UEs which support FDD ,mac-ehs and 64QAM

8.3.4.13.2 Conformance Requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

Extract From 25.331 clause 8.6.6.36:

If the IE "Downlink HS-PDSCH Information" is included and the UE would be in CELL_DCH state after completion of this procedure, the UE shall:

1> for 1.28 Mcps TDD, if the HS-PDSCH has been configured by the IE "DL Multi-carrier information":

2> clear other stored carriers configuration in the IE "DL Multi-carrier information".

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34.

1> if the IE "HS-DSCH Timeslot Configuration" or "HS-PDSCH Midamble Configuration" is included:

2> store the received configuration;

2> determine the value for the HS_DSCH_RECEPTION variable and take actions as described in subclause 8.5.25.

Extract From 25.331 clause 8.3.4.3:

1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6:

2> if the IEs "Δ_{ACK}", "Δ_{NACK}", and "HARQ_preamble_mode" are present, act on the received information elements;

2> if the new H-RNTI and "Primary CPICH info" are included:

3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell. If the IE "Downlink Secondary Cell Info FDD" is included for a cell associated with the serving HS-DSCH cell, consider that cell a secondary serving HS-DSCH cell.

2> if the IE "MAC-hs reset indicator" is included:

3> reset the MAC-hs/ehs entity [15].

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

[…]

>FDD					
>>Downlink 64QAM configured	OP		Enumerated (TRUE)	Absence of this IE means that the HS-SCCH does not use the 64QAM format. The presence of this IE means the UE uses the octet aligned table [15].	REL-7
>>HS-DSCH TB size table	CV-*Not64QAM*		Enumerated (octet aligned)	If this IE is present, octet aligned table [15] is used, else bit aligned table [15] is used.	REL-7

Condition	Explanation
Not64QAM	This IE is optionally present if 64QAM is not configured and MAC-ehs is configured. Otherwise it is not needed.

Reference(s)

TS 25.331 clause 8.6.6.36 and 8.3.4.3, 10.3.6.23a

8.3.4.13.3 Test purpose

3. To confirm that the UE starts HS-DSCH transmission using DL 64AM modulation according to the ACTIVE SET UPDATE message.

4. To confirm that the UE stops HS-DSCH transmission using DL 64AM modulation according to the ACTIVE SET UPDATE message.

8.3.4.13.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 and 2 are active

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A17b, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD

- UE supports mac-ehs and 64QAM

- UE fully supports F-DPCH

Test Procedure

Table 8.3.4.13

Parameter	Unit	Cell 1			Cell 2		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			Mid Range Test Frequency		
CPICH Ec	dBm/3.84MHz	-60	-60	-75	-75	-60	-60

Table 8.3.4.13 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.13. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" and DL 64QAM parameters. When the UE receives this message, the UE shall configure layer 1 to begin E-DCH transmission and HS-DSCH reception, with DL 64QAM, using the new radio link and making cell 2 the serving cell. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 using the configured 64QAM parameters and the UE shall respond with a UE CAPABILITY INFORMATION message. The SS completes the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message, using 64QAM, to the UE.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.13. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS will remove the radio link from cell 1 and then SS transmits an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed. This also stops HS-DSCH transmission using DL 64AM modulation. When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 and the UE shall respond with a UE CAPABILITY INFORMATION message. The SS completes the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message to the UE.

Expected main sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.12
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2)
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information" for cell 2. 64QAM is configured and Cell 2 becomes the serving Cell.
5	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, with DL 64QAM active
6	←		UE CAPABILITY ENQUIRY	SRBs mapped on HS channels hence 64QAM used for signalling
7	→		UE CAPABILITY INFORMATION	
8	←		UE CAPABILITY INFORMATION CONFIRM	
				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.x
9	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 1)
10	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information". 64QAM is switched off and Cell 2 remains the serving Cell.
11	→		ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 1.
12	←		UE CAPABILITY ENQUIRY	SRBs mapped conventionally on HS channels
13	→		UE CAPABILITY INFORMATION	
14	←		UE CAPABILITY INFORMATION CONFIRM	SRB2 on HS-DSCH

Specific Message Contents

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code number	F-DPCH code number as used in Cell1	
- TPC Combination Index	1	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	1	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 2 HS-SCCH	
- HS-SCCH Channelisation Code	6	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	TRUE	
- HS-DSCH TB size table	Not Present	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

MEASUREMENT REPORT (Step 9)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 10)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to the same P-CPICH scrambling code assigned for cell 1
Serving Cell Change Parameters	
- HARQ_preamble_mode	1
- Downlink HS-PDSCH Information	
- HS-SCCH Info	
- CHOICE mode	FDD
- DL Scrambling Code	Not present
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH
- HS-SCCH Channelisation Code	7
- Measurement Feedback Info	
- CHOICE mode	FDD
- Pohsdsch	6 dB
- CQI Feedback cycle, k	4 ms
- CQI repetition factor	1
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)
- CHOICE mode	FDD (no data)
- Downlink 64QAM configured	Not Present
- HS-DSCH TB size table	Octet aligned

8.3.4.13.5 Test requirement

At step 3 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 5 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure and DL 64QAM.

At step 6 the UE should receive UE CAPABILITY ENQUIRY mapped on DL 64QAM HS-DSCH

At step 9 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 11 the UE shall remove the radio link from cell 1 and it shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC.

At step 12 the UE should receive UE CAPABILITY ENQUIRY mapped on DL QPSK HS-DSCH(mac-ehs).

At step 14 the UE should receive UE CAPABILITY INFORMATION CONFIRM.

8.3.4.13a Active set update in soft handover: Radio Link addition/removal and serving HS-DSCH/E-DCH cell change, with activation/deactivation of 64QAM with SRBs mapped to E-DCH/DCH

8.3.4.13a.1 Definition and Applicability

All UEs which support FDD ,mac-ehs and 64QAM

8.3.4.13a.2 Conformance Requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

2> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

[...]

If the IE "Downlink HS-PDSCH Information" is included and the UE would be in CELL_DCH state after completion of this procedure, the UE shall:

1> for 1.28 Mcps TDD, if the HS-PDSCH has been configured by the IE "DL Multi-carrier information":

2> clear other stored carriers configuration in the IE "DL Multi-carrier information".

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34.

2> if the IE "HS-DSCH Timeslot Configuration" or "HS-PDSCH Midamble Configuration" is included:

2> store the received configuration;

2> determine the value for the HS_DSCH_RECEPTION variable and take actions as described in subclause 8.5.25.

[...]

1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6:

2> if the IEs "Δ_{ACK}", "Δ_{NACK}", and "HARQ_preamble_mode" are present, act on the received information elements;

2> if the new H-RNTI and "Primary CPICH info" are included:

3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell. If the IE "Downlink Secondary Cell Info FDD" is included for a cell associated with the serving HS-DSCH cell, consider that cell a secondary serving HS-DSCH cell.

2> if the IE "MAC-hs reset indicator" is included:

3> reset the MAC-hs/ehs entity [15].

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

[…]

>FDD					
>>Downlink 64QAM configured	OP		Enumerated (TRUE)	Absence of this IE means that the HS-SCCH does not use the 64QAM format. The presence of this IE means the UE uses the octet aligned table [15].	REL-7
>>HS-DSCH TB size table	CV-*Not64QAM*		Enumerated (octet aligned)	If this IE is present, octet aligned table [15] is used, else bit aligned table [15] is used.	REL-7

Condition	**Explanation**
Not64QAM	This IE is optionally present if 64QAM is not configured and MAC-ehs is configured. Otherwise it is not needed.

Reference(s)

TS 25.331 clause 8.6.6.36 and 8.3.4.3, 10.3.6.23a

8.3.4.13a.3 Test purpose

1. To confirm that the UE starts HS-DSCH transmission using DL 64AM modulation according to the ACTIVE SET UPDATE message.

2. To confirm that the UE stops HS-DSCH transmission using DL 64AM modulation according to the ACTIVE SET UPDATE message.

8.3.4.13a.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 and 2 are active

UE: PS_DCCH DCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition, A17e, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD

- UE supports mac-ehs and 64QAM

Test Procedure

Table 8.3.4.13a

Parameter	Unit	Cell 1			Cell 2		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number	-	Mid Range Test Frequency			Mid Range Test Frequency		
CPICH Ec	dBm/3.84MHz	-60	-60	-75	-75	-60	-60

Table 8.3.4.13a illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.13a. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" and DL 64QAM parameters. When the UE receives this message, the UE shall configure layer 1 to begin E-DCH transmission and HS-DSCH reception, with DL 64QAM, using the new radio link and making cell 2 the serving cell. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.13a. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS will remove the radio link from cell 1 and then SS transmits an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed. This also stops HS-DSCH transmission using DL 64AM modulation. When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

Expected main sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE: PS_DCCH DCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.13a
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2)
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information" for cell 2. 64QAM is configured and Cell 2 becomes the serving Cell.
5	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, with DL 64QAM active
				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.13a
6	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 1)
7	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information". 64QAM is switched off and Cell 2 remains the serving Cell.
8	→		ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 1.

Specific Message Contents

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not present	
-DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	Not present	
-Spreading factor	Refer to TS 34.108 clause 6.10.2.4 “Typical radio parameter sets”	
-Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
-Scrambling code change	Not Present	
- TPC Combination Index	1	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	1	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 2 HS-SCCH	
- HS-SCCH Channelisation Code	6	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	TRUE	
- HS-DSCH TB size table	Octet Aligned	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

MEASUREMENT REPORT (Step 6)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 7)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to the same P-CPICH scrambling code assigned for cell 1
Serving Cell Change Parameters	
- HARQ_preamble_mode	1
- Downlink HS-PDSCH Information	
- HS-SCCH Info	
- CHOICE mode	FDD
- DL Scrambling Code	Not present
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH
- HS-SCCH Channelisation Code	7
- Measurement Feedback Info	
- CHOICE mode	FDD
- Pohsdsch	6 dB
- CQI Feedback cycle, k	4 ms
- CQI repetition factor	1
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)
- CHOICE mode	FDD (no data)
- Downlink 64QAM configured	Not Present
- HS-DSCH TB size table	Not Present

8.3.4.13a.5 Test requirement

At step 3 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 5 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure and DL 64QAM.

At step 6 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 8 the UE shall remove the radio link from cell 1 and it shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC.

8.3.4.14 Active Set Update in Soft Handover: Radio Link addition/removal and serving HS-DSCH / E-DCH cell change with activation/deactivation of MIMO

8.3.4.14.1 Definition and applicability

All UE categories which support MIMO and F-DPCH or Enhanced F-DPCH.

8.3.4.14.2 Conformance requirement

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> if the IE "MIMO parameters" is not included:

2> clear the MIMO_PARAMS variable;

2> trigger lower layers to stop operation in MIMO mode.

1> otherwise:

2> for FDD, if the IE "MIMO N_cqi_typeA/M_cqi ratio" is included:

3> store the value of the IE "MIMO N_cqi_typeA/M_cqi ratio" in the MIMO_PARAMS variable.

2> for FDD, if the IE "MIMO pilot configuration" is included:

3> store the value of the IE "MIMO pilot configuration" in the MIMO_PARAMS variable.

[…]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the UE shall:

1> take actions related to the MIMO_PARAMS variable as specified in subclause 8.5.32;

1> determine the value of the MIMO_STATUS variable.

The MIMO_STATUS variable shall be set to TRUE only when all the following conditions are met:

1> The UE is in CELL_DCH state;

1> the variable HS_DSCH_RECEPTION is set to TRUE;

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO N_cqi_typeA/M_cqi ratio"; and

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO pilot configuration".

1> for 1.28 Mcps TDD, the variable MIMO_PARAMS contains a value for the IE "MIMO SF Mode for HS-PDSCH dual stream".

If any of the above conditions is not met and the MIMO_STATUS variable is set to TRUE, the UE shall:

1> set the MIMO_STATUS variable to FALSE;

1> clear the MIMO_PARAMS variable;

1> trigger lower layers to stop operation in MIMO mode.

[…]

With the exception of the provisions of subclause 6A.3, the following shall apply when the UE is configured in MIMO mode:

1) The UE derives the PCI value as defined in subclause 6A.4 and either a type A or a type B CQI value as defined in subclause 6A.2.2 depending on which type of CQI shall be reported as defined below.

Reference

3GPP TS 25.331 clause 8.5.32, 8.5.33

3GPP TS 25.214 clause 6A.1.2.2

8.3.4.14.3 Test purpose

1. To confirm that the UE starts MIMO reception according to the received ACTIVE SET UPDATE message.
2. To confirm that the UE maintains MIMO reception according to the received ACTIVE SET UPDATE message
3. To confirm that the UE stops MIMO reception according to the received ACTIVE SET UPDATE message.

8.3.4.14.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 non MIMO cell, Cell 2 MIMO configured, Cell 3 MIMO configured

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-17) under condition A17b, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports MIMO
- UE fully supports F-DPCH or Enhanced F-DPCH

Test Procedure

Table 8.3.4.14-1

Cell	UTRA RF Channel Number
Cell 1	Mid Range Test Frequency
Cell 2	Mid Range Test Frequency
Cell 3	Mid Range Test Frequency

Table 8.3.4.14-2

		Time					
Parameter	Unit	T0	T1	T2	T3	T4	T5
Cell 1 CPICH Ec	dBm/3.84MHz	-60	-60	-75	-75	-75	-60
Cell 2 CPICH Ec	dBm/3.84MHz	-75	-60	-60	-60	-75	-75
Cell 3 CPICH Ec	dBm/3.84MHz	-75	-75	-75	-60	-60	-60

Table 8.3.4.14 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.14-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" and MIMO configuration. When the UE receives this message, the UE shall activate MIMO reception and configure SRB and user plane bearers for HS-DSCH reception (L1 configured for MIMO on separate antennae) using the new radio link with cell 2 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 using MIMO configuration. The UE shall respond with a UE CAPABILITY INFORMATION message. The SS completes this part of the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message to the UE with SRB using MIMO configuration.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.14-2. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS will remove the radio link from cell 1 and then SS transmits an ACTIVE SET UPDATE message using MIMO, which includes IE "Radio Link Removal Information" and specifying the S-CPICH information of the cell to be removed. When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC on SRB2. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 from Cell 2 using MIMO configuration and the UE shall respond with a UE CAPABILITY INFORMATION message. The SS completes this part of the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message to the UE with SRB configured for MIMO.

The SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.14-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 2 on DCCH using AM RLC and MIMO configuration which includes the IE "Radio Link Addition Information" and MIMO parameters. When the UE receives this message, the UE shall maintain MIMO reception but with Cell 3 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 using MIMO configuration. The UE shall respond with a UE CAPABILITY INFORMATION message. The SS completes this part of the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message to the UE with SRB configured for MIMO.

SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.14-2. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS will remove the radio link from cell 1 and then SS transmits

an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the S-CPICH information of the cell to be removed.

SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.14-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message from cell 1 on DCCH using MIMO configuration which includes the IE "Radio Link Addition Information" but no MIMO parameters in RRC message. When the UE receives this message, the UE shall deactivate MIMO reception and use cell 1 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 on HS-DSCH. The UE shall respond with a UE CAPABILITY INFORMATION message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.14-2.
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2).
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information" for cell 2. Valid MIMO parameters are specified and Cell 2 becomes the serving Cell.
5	→		ACTIVE SET UPDATE COMPLETE	
6				At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 2 and applies the new configuration.
7	←		UE CAPABILITY ENQUIRY	Use default message. SRB2 is sent using the configured L1 MIMO configuration. i.e. single data stream on antenna 1 and antenna 2 with separate modulation patterns on S-CPICH.
8	→		UE CAPABILITY INFORMATION	
9	←		UE CAPABILITY INFORMATION CONFIRM	SRB2 is sent on HS-DSCH using configured L1 MIMO from Cell 2.
10				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.14-2.
11	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 1).
12	←		ACTIVE SET UPDATE	The SS transmits this message on SRB2 using MIMO configuration which includes IE "Radio Link Removal Information". Valid MIMO configuration parameters are specified.
13	→		ACTIVE SET UPDATE COMPLETE	
14	SS			At the activation time the SS removes the radio link associated with Cell 1
15				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.14-2.
16	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 3).
17	←		ACTIVE SET UPDATE	SS transmits this message (SRB2 using MIMO configuration) from cell 2. The message includes IE "Radio Link Addition Information" for cell 3. Cell 3 to become the serving Cell.
18	→		ACTIVE SET UPDATE COMPLETE	
19	SS			At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 3 and applies the new configuration.

20	←	UE CAPABILITY ENQUIRY	Use default message. SRB2 is sent using the configured L1 MIMO configuration from Cell3
21	→	UE CAPABILITY INFORMATION	
22	←	UE CAPABILITY INFORMATION CONFIRM	SRB2 is sent on HS-DSCH using configured L1 MIMO
23			SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.14-2
24	→	MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 2)
25	←	ACTIVE SET UPDATE	The SS transmits this message on SRB2 using MIMO configuration. The RRC message includes IE "Radio Link Removal Information" for Cell 2
26	→	ACTIVE SET UPDATE COMPLETE	
27	SS		At the activation time the SS removes the radio link associated with Cell 2
28			SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.14-2
29	→	MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 1)
30	←	ACTIVE SET UPDATE	The SS transmits this message on SRB2 using MIMO configuration. The RRC message includes IE "Radio Link Addition Information" for Cell 1 with MIMO configuration absent. Cell 1 to become the active Cell
31	→	ACTIVE SET UPDATE COMPLETE	
32	SS		At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 1 and applies the new configuration.
33	←	UE CAPABILITY ENQUIRY	Use default message. SRB2 sent on HS-DSCH from Cell 1
34	→	UE CAPABILITY INFORMATION	
35	←	UE CAPABILITY INFORMATION CONFIRM	SRB2 on HS-DSCH from Cell 1

Specific Message Contents

Specific Message Content

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	2 kinds
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1b
- Triggering condition 1	Active set cells
- Triggering condition 2	Not Present
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2, cell 3 shall be in accordance with the default SIBs as specified in TS 34.108.

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1 and 2 may appear in any order.

NOTE 2: Cell measured results for cells 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present it can appear in any order.

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
MIMO Parameters		
- MIMO Operation	Start	
-		
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code number	F-DPCH code number as used in Cell1	
- TPC Combination Index	1	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Measurement Power Offset	12 (6 dB)	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	12	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	

- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

UE CAPABILITY ENQUIRY (Steps 7, 20, 33)

Use the same message sub-type found in TS 34.108 clause 9.1

UE CAPABILITY INFORMATION (Steps 8, 21, 34)

Use the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Steps 9, 22, 35)

Use the same message sub-type found in TS 34.108 clause 9.1

MEASUREMENT REPORT (Step 11)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	Cell 2. See Note 1
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	Cell 1. see Note 1
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	Cell 3. see Note 1
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured results for cells 1 and 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level)

ACTIVE SET UPDATE (Step 12)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
MIMO Parameters		
- MIMO Operation	Continue	
-		
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	
Radio link removal information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 1	

MEASUREMENT REPORT (Step 16)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured result for cell 1 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

ACTIVE SET UPDATE (Step 17)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0111'	
New Primary E-RNTI	'0101 0101 0101 0111'	
MIMO Parameters		
- MIMO Operation	Start	
-		
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 3	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code Number	F-DPCH code number as used in Cell1	
- TPC Combination Index	0	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 3	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Measurement Power Offset	12 (6 dB)	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	12	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 3	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	

- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

MEASUREMENT REPORT (Step 24)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3(FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. see Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. see Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured results for cells 1 and 2 may or may not be present (depends upon the capability of the UE and test uncertainties in power level)

ACTIVE SET UPDATE (Step 25)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
MIMO Parameters		
- MIMO Operation	Continue	
-		
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	
Radio link removal information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	

MEASUREMENT REPORT (Step 29)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured result for cell 2 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

ACTIVE SET UPDATE (Step 30)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 1101'	
New Primary E-RNTI	'0101 0101 0101 1101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 1	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code Number	F-DPCH code number as used in Cell1	
- TPC Combination Index	1	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Measurement Power Offset	12 (6 dB)	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	6	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

8.3.4.14.5 Test requirements

At steps 3, 11, 16, 24, 29 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At steps 5, 13, 18 and 26, 31 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the previous ACTIVE SET UPDATE and indicate readiness to accept the new configuration at activation time.

At step 8, 21, 34, the UE should transmit UE CAPABILITY INFORMATION on SRB2.

8.3.4.14a Active Set Update in Soft Handover: Radio Link addition/removal and serving HS-DSCH / E-DCH cell change with activation/deactivation of MIMO with SRBs mapped on E-DCH/DCH

8.3.4.14a.1 Definition and applicability

All UE categories which support MIMO.

8.3.4.14a.2 Conformance requirement

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> if the IE "MIMO parameters" is not included:

2> clear the MIMO_PARAMS variable;

2> trigger lower layers to stop operation in MIMO mode.

1> otherwise:

2> for FDD, if the IE "MIMO N_cqi_typeA/M_cqi ratio" is included:

3> store the value of the IE "MIMO N_cqi_typeA/M_cqi ratio" in the MIMO_PARAMS variable.

2> for FDD, if the IE "MIMO pilot configuration" is included:

4> store the value of the IE "MIMO pilot configuration" in the MIMO_PARAMS variable.

[…]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the UE shall:

1> take actions related to the MIMO_PARAMS variable as specified in subclause 8.5.32;

1> determine the value of the MIMO_STATUS variable.

The MIMO_STATUS variable shall be set to TRUE only when all the following conditions are met:

1> The UE is in CELL_DCH state;

1> the variable HS_DSCH_RECEPTION is set to TRUE;

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO N_cqi_typeA/M_cqi ratio"; and

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO pilot configuration".

1> for 1.28 Mcps TDD, the variable MIMO_PARAMS contains a value for the IE "MIMO SF Mode for HS-PDSCH dual stream".

If any of the above conditions is not met and the MIMO_STATUS variable is set to TRUE, the UE shall:

1> set the MIMO_STATUS variable to FALSE;

1> clear the MIMO_PARAMS variable;

2> trigger lower layers to stop operation in MIMO mode.

[…]

With the exception of the provisions of subclause 6A.3, the following shall apply when the UE is configured in MIMO mode:

1) The UE derives the PCI value as defined in subclause 6A.4 and either a type A or a type B CQI value as defined in subclause 6A.2.2 depending on which type of CQI shall be reported as defined below.

Reference

3GPP TS 25.331 clause 8.5.32, 8.5.33

3GPP TS 25.214 clause 6A.1.2.2

8.3.4.14a.3 Test purpose

1. To confirm that the UE starts MIMO reception according to the received ACTIVE SET UPDATE message.
2. To confirm that the UE maintains MIMO reception according to the received ACTIVE SET UPDATE message
3. To confirm that the UE stops MIMO reception according to the received ACTIVE SET UPDATE message.

8.3.4.14a.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 non MIMO cell, Cell 2 MIMO configured, Cell 3 MIMO configured

UE: PS_DCCH_DCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A17d, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports MIMO

Test Procedure

Table 8.3.4.14a-1

Cell	UTRA RF Channel Number
Cell 1	Mid Range Test Frequency
Cell 2	Mid Range Test Frequency
Cell 3	Mid Range Test Frequency

Table 8.3.4.14a-2

		Time					
Parameter	Unit	T0	T1	T2	T3	T4	T5
Cell 1 CPICH Ec	dBm/3.84MHz	-60	-60	-75	-75	-75	-60
Cell 2 CPICH Ec	dBm/3.84MHz	-75	-60	-60	-60	-75	-75
Cell 3 CPICH Ec	dBm/3.84MHz	-75	-75	-75	-60	-60	-60

Table 8.3.4.14a illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.14a-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" and MIMO configuration. When the UE receives this message, the UE shall activate MIMO reception (L1 configured for MIMO on separate antennae) using the new radio

link with cell 2 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.14a-2. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS will remove the radio link from cell 1 and then SS transmits an ACTIVE SET UPDATE message using MIMO, which includes IE "Radio Link Removal Information" and specifying the S-CPICH information of the cell to be removed. When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC on SRB2.

The SS will transmit a RLC PDU on DTCH on the MIMO configuration (L1 configured for MIMO on separate antennae). The SS waits for the RLC PDU to be sent back in the UPLINK and verifies the PDU content.

The SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.14a-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 2 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" and MIMO parameters. When the UE receives this message, the UE shall maintain MIMO reception but with Cell 3 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.14a-2. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS will remove the radio link from cell 1 and then SS transmits an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the S-CPICH information of the cell to be removed.

SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.14a-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message from cell 1 on DCCH which includes the IE "Radio Link Addition Information" but no MIMO parameters in RRC message. When the UE receives this message, the UE shall deactivate MIMO reception and use cell 1 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH_DCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.14a-2.
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2).
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information" for cell 2. Valid MIMO parameters are specified and Cell 2 becomes the serving Cell.
5	→		ACTIVE SET UPDATE COMPLETE	
6				At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 2 and applies the new configuration.
7				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.14a-2.
8	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 1).
9	←		ACTIVE SET UPDATE	The SS transmits this message including IE "Radio Link Removal Information". Valid MIMO configuration parameters are specified.
10	→		ACTIVE SET UPDATE COMPLETE	
11	SS			At the activation time the SS removes the radio link associated with Cell 1
12				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.14a-2.
13	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 3).
14	←		ACTIVE SET UPDATE	SS transmits this message from cell 2. The message includes IE "Radio Link Addition Information" for cell 3. Cell 3 to become the serving Cell.
15	→		ACTIVE SET UPDATE COMPLETE	
16	SS			At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 3 and applies the new configuration.
17				SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.14a-2
18	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 2)
19	←		ACTIVE SET UPDATE	The SS transmits this message including the IE "Radio Link Removal Information" for Cell 2
20	→		ACTIVE SET UPDATE COMPLETE	

21	SS		At the activation time the SS removes the radio link associated with Cell 2
22			SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.14a-2
23	→	MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 1)
24	←	ACTIVE SET UPDATE	The SS transmits this message including the IE "Radio Link Addition Information" for Cell 1 with MIMO configuration absent. Cell 1 to become the active Cell
25	→	ACTIVE SET UPDATE COMPLETE	
26	SS		At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 1 and applies the new configuration.

Specific Message Contents

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	2 kinds
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1b
- Triggering condition 1	Active set cells
- Triggering condition 2	Not Present
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2, cell 3 shall be in accordance with the default SIBs as specified in TS 34.108.

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1 and 2 may appear in any order.

NOTE 2: Cell measured results for cells 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present it can appear in any order.

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
MIMO Parameters		
- MIMO Operation	Start	
- CHOICE mode	FDD	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not present	
-DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	Not present	
-Spreading factor	Refer to TS 34.108 clause 6.10.2.4 “Typical radio parameter sets”	
-Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
-Scrambling code change	Not Present	
- TPC Combination Index	1	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	12	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	

- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

MEASUREMENT REPORT (Step 8)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	Cell 2. See Note 1
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	Cell 1. see Note 1
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	Cell 3. see Note 1
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured results for cells 1 and 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

ACTIVE SET UPDATE (Step 9)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
MIMO Parameters		
- MIMO Operation	Continue	
- CHOICE mode	FDD	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
Radio link removal information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 1	

MEASUREMENT REPORT (Step 13)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured result for cell 1 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

ACTIVE SET UPDATE (Step 14)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0111'	
New Primary E-RNTI	'0101 0101 0101 0111'	
MIMO Parameters		
- MIMO Operation	Start	
- CHOICE mode	FDD	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 3	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not present	
-DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	Not present	
-Spreading factor	Refer to TS 34.108 clause 6.10.2.4 “Typical radio parameter sets”	
-Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
-Scrambling code change	Not Present	
- TPC Combination Index	0	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 3	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	12	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 3	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	

- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

MEASUREMENT REPORT (Step 18)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3(FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. see Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. see Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured results for cells 1 and 2 may or may not be present (depends upon the capability of the UE and test uncertainties in power level)

ACTIVE SET UPDATE (Step 19)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
MIMO Parameters		
- MIMO Operation	Continue	
- CHOICE mode	FDD	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
Radio link removal information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	

MEASUREMENT REPORT (Step 23)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured result for cell 2 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

ACTIVE SET UPDATE (Step 24)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 1101'	
New Primary E-RNTI	'0101 0101 0101 1101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 1	
- Downlink DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not present	
-DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	Not present	
-Spreading factor	Refer to TS 34.108 clause 6.10.2.4 “Typical radio parameter sets”	
-Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
-Scrambling code change	Not Present	
- TPC Combination Index	1	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	6	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	

- CHOICE E-RGCH Information - E-DCH RL Info other cells	Not Present	

8.3.4.14a.5 Test requirements

At steps 3, 8, 13, 18, 23 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At steps 5, 10, 15, 20, and 25 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the previous ACTIVE SET UPDATE and indicate readiness to accept the new configuration at activation time.

8.3.4.15 Active set update: Dual Cell (DC) Activation by Serving Cell Change from non DC-HSDPA capable cell to DC-HSDPA capable cell

8.3.4.15.1 Definition and applicability

All UE categories which support Dual Cell HSDPA. UE supports F-DPCH or Enhanced F-DPCH.

8.3.4.15.2 Conformance requirement

The purpose of the active set update procedure is to update the active set of the connection between the UE and UTRAN. This procedure shall be used in CELL_DCH state. The UE should keep on using the old RLs while configuring the new RLs. Also the UE should keep the transmitter turned on during the procedure. This procedure is only used in FDD mode.

…

The procedure is initiated when UTRAN orders a UE in CELL_DCH state, to make the following modifications of the active set of the connection:

a) Radio link addition;

b) Radio link removal;

c) Combined radio link addition and removal;

d) Addition of a radio link to the E-DCH active set;

e) Removal of a radio link from the E-DCH active set.

The procedure also allows the addition or removal of a radio link on a secondary serving HS-DSCH cell. Radio links on the secondary serving HS-DSCH cell are not part of the active set.

In case a) and c), UTRAN should:

1> prepare new additional radio link(s) in the UTRAN prior to the command to the UE.

In all cases, UTRAN should:

1> send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC;

1> create active sets that contain at least one common radio link across a DPCH or F-DPCH frame boundary as the result of one or multiple (parallel) active set update procedures.

UTRAN should include the following information:

1> IE "Radio Link Addition Information": Downlink DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add. This IE is needed in cases a) and c) listed above;

1> IE "Downlink Secondary Cell Info FDD": Downlink optional parameters relevant to reception of secondary serving HS-DSCH cell;

1> IE "Radio Link Removal Information": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove. This IE is needed in cases b) and c) listed above;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH information" to indicate which radio link to add to the E-DCH active set. This IE is needed in case d) above, when the RL added to the E-DCH active set is already in the DCH active set;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH release indicator" to indicate which radio link to remove from the E-DCH active set. This IE is needed in case e) above, when the RL removed from the E-DCH active set remains in the DCH active set.

…

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

…

1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6:

2> if the IEs "Δ_{ACK}", "Δ_{NACK}", and "HARQ_preamble_mode" are present, act on the received information elements;

2> if the new H-RNTI and "Primary CPICH info" are included:

3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell. If the IE "Downlink Secondary Cell Info FDD" is included for a cell associated with the serving HS-DSCH cell, consider that cell a secondary serving HS-DSCH cell.

2> if the IE "MAC-hs reset indicator" is included:

3> reset the MAC-hs/ehs entity [15].

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

Reference

3GPP TS 25.331 clause 8.3.4, 8.3.4.2, 8.3.4.3

8.3.4.15.3 Test purpose

To confirm that the UE performs HS-DSCH serving cell change from non DC-HSDPA capable cell to DC –HSDPA capable cell

8.3.4.15.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 non DC-HSDPA cell, Cell 2/3 DC HSDPA cell(s) with cell 2 (Anchor Carrier) and Cell 3 (Secondary Carrier)

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-17) under condition A17b, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD

- UE category supports DC HSDPA
- UE supports F-DPCH or Enhanced F-DPCH

Test Procedure

Table 8.3.4.15

Parameter	Unit	Cell 1		Dual Cell (2 and 3)	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency (see Note 1)	
CPICH Ec	dBm/3.84MHz	-60	-70	-70	-60
Note 1: DC HSDPA Cell test frequencies are specified in [9] cl 5.1.1 for the operating band under test. For the secondary Cell 3 no other common physical channel other than CPICH shall be configured [5] cl. 4.2.4. The SFN and Tcell of the secondary cell are the same as the serving cell [29] cl. 7.1.					

Table 8.3.4.15 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Note that Cell 2 and cell 3 are configured as DC HSDPA Cells with Cell 2 as the Anchor Carrier and Cell 3 as the Secondary Carrier cell (definitions according to TS 25.825 section 4.2.1).

The downlink transmission power is set according to values in column “T0” in table 8.3.4.15. The UE has user plane and signalling radio bearers mapped on E-DCH/HS-DSCH in cell 1.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.15. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity" set to 1a.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which adds a second radio link in cell 2, changes the E-DCH and HS-DSCH serving cell to cell 2 and includes Downlink Secondary Cell 3 parameters. When the UE receives this message, the UE shall configure layer 1 to begin E-DCH transmission and HS-DSCH reception using the new radio links on Anchor Carrier Cell 2 and Secondary Carrier Cell 3. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. SS checks that this RRC message is received on Anchor Carrier Cell 2.

To check that the UE has performed serving cell change to DC HSDPA Cell , the SS sends UE CAPABILITY ENQUIRY on both Anchor Carrier Cell 2 and Secondary Carrier Cell 3 using SRB2 mapped onto HS-DSCH. The UE shall respond to each message in turn with UE CAPABILITY INFORMATION message sent to Anchor Carrier Cell 2. The SS completes the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.15.
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2).
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The RRC message instructs the UE to add dual cell HSDPA Cell 2 and 3 to the active set and perform a serving E-DCH and HS-DSCH Cell change to the DC-HSDPA.
5	SS			At the activation time DC-HSDPA is configured, Cell 2 becomes the serving E-DCH /HS-DSCH Cell and Cell 3 the secondary cell.
6	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link for DC HSDPA cell and active HS-DSCH reception from Cells 2 and 3.
7	←		UE CAPABILITY ENQUIRY	Use default message. SRB2 on HS-DSCH from Anchor Carrier Cell 2.
8	→		UE CAPABILITY INFORMATION	
9	←		UE CAPABILITY INFORMATION CONFIRM	SRB2 is sent on HS-DSCH from Cell 2.
10	←		UE CAPABILITY ENQUIRY	Use default message. SS configures and transmits SRB2 on HS-DSCH from Secondary Carrier Cell 3.
11	→		UE CAPABILITY INFORMATION	
12	←		UE CAPABILITY INFORMATION CONFIRM	SRB2 is sent on HS-DSCH from Cell 3.

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1 and 2 may appear in any order.

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink F-DPCH info for each RL		
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code Number	F-DPCH code number as used in Cell1	
- TPC Combination Index	1	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	Reference to TS 34.108 clause 6.10.2.4.5 Parameter Set	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	2 E-TFCIs	
- Reference E-TFCI	11	
- Reference E-TFCI PO	4	
- Reference E-TFCI	83	
- Reference E-TFCI PO	16	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information		
- Channelisation Code	4	

- Signature Sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
- E-DCH RL Info other cells	Not Present	
Downlink secondary cell info FDD		
- CHOICE Configuration info	New configuration	
- New HRNTI	'1010 1010 1010 1010'	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet aligned	
- Primary CPICH info		
- Primary scrambling code	Set to the primary scrambling code of cell 3	
- DL Scrambling Code	Not Present. Mandatory default implies same scrambling code as for the primary CPICH	
- HS-SCCH Channelisation Code Information	1 HS-SCCH code	
- HS-SCCH Channelisation Code	7	
- Measurement Power Offset	6 dB	
- UARFCN downlink (Nd)	Reference to clause 5.1 Test frequencies. Note that for the secondary cell the UARFCN is a positive offset of 25 from the UARFCN of the test frequency of the primary cell which equates to 5MHz channel spacing	

UE CAPABILITY ENQUIRY (Steps 7, 10)

Use the same message sub-type found in TS 34.108 clause 9.1.

UE CAPABILITY INFORMATION (Steps 8, 11)

Use the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Steps 9, 12)

Use the same message sub-type found in TS 34.108 clause 9.1.

8.3.4.15.5 Test requirements

At step 3 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 6 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure, the change of serving cell to DC HSDPA.

At step 8 and step 11 the UE should transmit UE CAPABILITY INFORMATION on SRB2.

8.3.4.15a Active set update: Dual Cell (DC) Activation by Serving Cell Change from non DC-HSDPA capable cell to DC-HSDPA capable cell with SRB mapped on E-DCH/DCH

8.3.4.15a.1 Definition and applicability

All UE categories which support Dual Cell HSDPA.

8.3.4.15a.2 Conformance requirement

The purpose of the active set update procedure is to update the active set of the connection between the UE and UTRAN. This procedure shall be used in CELL_DCH state. The UE should keep on using the old RLs while configuring the new RLs. Also the UE should keep the transmitter turned on during the procedure. This procedure is only used in FDD mode.

…

The procedure is initiated when UTRAN orders a UE in CELL_DCH state, to make the following modifications of the active set of the connection:

a) Radio link addition;

b) Radio link removal;

c) Combined radio link addition and removal;

d) Addition of a radio link to the E-DCH active set;

e) Removal of a radio link from the E-DCH active set.

The procedure also allows the addition or removal of a radio link on a secondary serving HS-DSCH cell. Radio links on the secondary serving HS-DSCH cell are not part of the active set.

In case a) and c), UTRAN should:

1> prepare new additional radio link(s) in the UTRAN prior to the command to the UE.

In all cases, UTRAN should:

1> send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC;

1> create active sets that contain at least one common radio link across a DPCH or F-DPCH frame boundary as the result of one or multiple (parallel) active set update procedures.

UTRAN should include the following information:

1> IE "Radio Link Addition Information": Downlink DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add. This IE is needed in cases a) and c) listed above;

1> IE "Downlink Secondary Cell Info FDD": Downlink optional parameters relevant to reception of secondary serving HS-DSCH cell;

1> IE "Radio Link Removal Information": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove. This IE is needed in cases b) and c) listed above;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH information" to indicate which radio link to add to the E-DCH active set. This IE is needed in case d) above, when the RL added to the E-DCH active set is already in the DCH active set;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH release indicator" to indicate which radio link to remove from the E-DCH active set. This IE is needed in case e) above, when the RL removed from the E-DCH active set remains in the DCH active set.

…

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

…

1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6:

2> if the IEs "Δ_{ACK}", "Δ_{NACK}", and "HARQ_preamble_mode" are present, act on the received information elements;

2> if the new H-RNTI and "Primary CPICH info" are included:

3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell. If the IE "Downlink Secondary Cell Info FDD" is included for a cell associated with the serving HS-DSCH cell, consider that cell a secondary serving HS-DSCH cell.

2> if the IE "MAC-hs reset indicator" is included:

3> reset the MAC-hs/ehs entity [15].

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

…..

If the IE "RB mapping info" is included, the UE shall:

...

For FDD the list of multiplexing options configured in the UE for each RB and SRB should comply with the following rules otherwise the UE behaviour is not specified:

- ...
- at most one multiplexing option can contain the combination "DCH" or "DCH + HS-DSCH" for the DL together with "DCH" for the UL;
- at most one multiplexing option can contain the combination "HS-DSCH" or "DCH + HS-DSCH" for the DL together with "DCH" for the UL;
- ...

Reference

3GPP TS 25.331 clause 8.3.4, 8.3.4.2, 8.3.4.3, 8.6.4.8

8.3.4.15a.3 Test purpose

To confirm that the UE performs HS-DSCH serving cell change from non DC-HSDPA capable cell to DC –HSDPA capable cell (SRB on DCH).

8.3.4.15a.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 non DC-HSDPA cell, Cell 2/3 DC HSDPA cell(s) with cell 2 (Anchor Carrier) and Cell 3 (Secondary Carrier)

UE: PS_DCCH+DTCH E-DCH/HS_DSCH (state 6-18) as specified in clause 7.4 of TS 34.108. See specific message contents for Radio Bearer Setup message.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports DC HSDPA

Test Procedure

Table 8.3.4.15a

Parameter	Unit	Cell 1		Dual Cell (2 and 3)	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency (see Note 1)	
CPICH Ec	dBm/3.84MHz	-60	-70	-70	-60
Note 1: For Secondary Carrier Cell 3 the UARFCN is a positive offset of 25 from the UARFCN of the test frequency of the Anchor Carrier Cell 2 which translates to 5MHz channel frequency spacing					

Table 8.3.4.15a illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Note that Cell 2 and cell 3 are configured as DC HSDPA Cells with Cell 2 as the Anchor Carrier and Cell 3 as the Secondary Carrier cell.

The downlink transmission power is set according to values in column “T0” in table 8.3.4.15a. The UE has user plane mapped on E-DCH/HS-DSCH and signalling radio bearers mapped on E-DCH/DCH in cell 1.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.15a. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity" set to 1a.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which adds a second radio link in cell 2, changes the E-DCH and HS-DSCH serving cell to cell 2 and includes Downlink Secondary Cell 3 parameters. When the UE receives this message, the UE shall configure layer 1 to begin E-DCH transmission and HS-DSCH reception using the new radio links on Anchor Carrier Cell 2 and Secondary Carrier Cell 3. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. SS checks that this RRC message is received on Anchor Carrier Cell 2.

To check that the UE has performed serving cell change to DC HSDPA Cell , SS monitors CQI reports on HS-DPCCH received from the UE on Cell 2.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.15a.
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2).
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The RRC message instructs the UE to add primary HSDPA Cell 2 to the active set and HSDPA cell 3 as the secondary cell And also perform a serving E-DCH and HS-DSCH Cell change to the DC-HSDPA.
5	SS			At the activation time DC-HSDPA is configured, Cell 2 becomes the serving E-DCH /HS-DSCH Cell and Cell 3 the secondary cell.
6	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link for DC HSDPA cell and active HS-DSCH reception from Cells 2 and 3.
7				SS starts monitoring CQI reports on HS-DPCCH received from the UE on Primary Cell 2 and Secondary Cell 3.SS waits for 10 CQI reports.

Specific Mesaage Contents.

RADIO BEARER SETUP

The message to be used in this test is same as condition A25b, as specified in clause 7.4 of TS 34.108 except the following:

Information Element	Value/remark
Downlink secondary cell info FDD	NOT PRESENT

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1 and 2 may appear in any order.

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink DPCH info for each RL		
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not present	
-DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	Not present	
-Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
-Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	1	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	1	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	Reference to TS 34.108 clause 6.10.2.4.5 Parameter Set	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	2 E-TFCIs	
- Reference E-TFCI	11	
- Reference E-TFCI PO	4	
- Reference E-TFCI	83	
- Reference E-TFCI PO	16	
- Power Offset for Scheduling Info	Not Present	

- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information		
- Channelisation Code	4	
- Signature Sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
- E-DCH RL Info other cells	Not Present	
Downlink secondary cell info FDD		
- CHOICE Configuration info	New configuration	
- New HRNTI	'1010 1010 1010 1010'	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet aligned	
- Primary CPICH info		
- Primary scrambling code	Set to the primary scrambling code of cell 3	
- DL Scrambling Code	Not Present. Mandatory default implies same scrambling code as for the primary CPICH	
- HS-SCCH Channelisation Code Information	1 HS-SCCH code	
- HS-SCCH Channelisation Code	7	
- Measurement Power Offset	6 dB	
- UARFCN downlink (Nd)	Reference to clause 5.1 Test frequencies. Note that for the secondary cell the UARFCN is a positive offset of 25 from the UARFCN of the test frequency of the primary cell which equates to 5MHz channel spacing	

8.3.4.15a.5 Test requirements

At step 3 SS shall receive a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 6 SS shall receive an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure, the change of serving cell to DC HSDPA.

At step 7 SS should start receiving CQI report for Cell 2 and Cell 3 on HS-DPCCH from the UE.

8.3.4.16 Active set update: Dual Cell (DC) Activation by Serving Cell Change from DC-HSDPA capable cell to non DC-HSDPA capable cell

8.3.4.16.1 Definition and applicability

All UE categories which support Dual Cell HSDPA. UE supports F-DPCH or Enhanced F-DPCH.

8.3.4.16.2 Conformance requirement

The purpose of the active set update procedure is to update the active set of the connection between the UE and UTRAN. This procedure shall be used in CELL_DCH state. The UE should keep on using the old RLs while configuring the new RLs. Also the UE should keep the transmitter turned on during the procedure. This procedure is only used in FDD mode.

…

The procedure is initiated when UTRAN orders a UE in CELL_DCH state, to make the following modifications of the active set of the connection:

a) Radio link addition;

b) Radio link removal;

c) Combined radio link addition and removal;

d) Addition of a radio link to the E-DCH active set;

e) Removal of a radio link from the E-DCH active set.

The procedure also allows the addition or removal of a radio link on a secondary serving HS-DSCH cell. Radio links on the secondary serving HS-DSCH cell are not part of the active set.

In case a) and c), UTRAN should:

1> prepare new additional radio link(s) in the UTRAN prior to the command to the UE.

In all cases, UTRAN should:

1> send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC;

1> create active sets that contain at least one common radio link across a DPCH or F-DPCH frame boundary as the result of one or multiple (parallel) active set update procedures.

UTRAN should include the following information:

1> IE "Radio Link Addition Information": Downlink DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add. This IE is needed in cases a) and c) listed above;

1> IE "Downlink Secondary Cell Info FDD": Downlink optional parameters relevant to reception of secondary serving HS-DSCH cell;

1> IE "Radio Link Removal Information": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove. This IE is needed in cases b) and c) listed above;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH information" to indicate which radio link to add to the E-DCH active set. This IE is needed in case d) above, when the RL added to the E-DCH active set is already in the DCH active set;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH release indicator" to indicate which radio link to remove from the E-DCH active set. This IE is needed in case e) above, when the RL removed from the E-DCH active set remains in the DCH active set.

…

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

…

1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6:

2> if the IEs "Δ_{ACK}", "Δ_{NACK}", and "HARQ_preamble_mode" are present, act on the received information elements;

2> if the new H-RNTI and "Primary CPICH info" are included:

3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell. If the IE "Downlink Secondary Cell Info FDD" is included for a cell associated with the serving HS-DSCH cell, consider that cell a secondary serving HS-DSCH cell.

2> if the IE "MAC-hs reset indicator" is included:

3> reset the MAC-hs/ehs entity [15].

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

Reference

3GPP TS 25.331 clause 8.3.4, 8.3.4.2, 8.3.4.3

8.3.4.16.3 Test purpose

To confirm that the UE performs HS-DSCH serving cell change from DC-HSDPA capable cell to non DC –HSDPA capable cell

8.3.4.16.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 non DC-HSDPA cell, Cell 2/3 DC HSDPA cell(s) with cell 2 (Primary Carrier) and Cell 3 (Secondary Carrier)

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-17) under condition A25, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports DC HSDPA
- UE supports F-DPCH or Enhanced F-DPCH

Test Procedure

Table 8.3.4.16

Parameter	Unit	DC HSDPA Cell (2, 3)		Cell 1	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency (see Note 1)		Mid Range Test Frequency	
CPICH Ec	dBm/3.84MHz	-60	-60	-75	-60
Note 1: DC HSDPA Cell test frequencies are specified in [9] section 5.1.1 for the operating band under test. For the secondary Cell 3 no other common physical channel other than CPICH shall be configured [5] cl. 4.2.4. The SFN and Tcell of the secondary cell are the same as the serving cell [29] cl. 7.1					

Table 8.3.4.16 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Note that Cell 2 and Cell 3 are DC HSDPA Cells with Cell 2 configured as the primary carrier and Cell 3 configured as the secondary cell (definition according to TS 25.825 section 4.2.1).

The downlink transmission power is set according to values in column "T0" in table 8.3.4.16. The UE has user plane bearers and signalling bearers mapped to the E-DCH/HS-DSCH of the DC HSDPA Cell configuration according to Radio Bearer Setup condition A25. As part of the initial condition, a check is made to verify that DC-HSDPA is configured by sending UE CAPABILITY ENQUIRY RRC message from both primary and secondary cell. The UE shall respond with UE CAPABILITY INFORMATION. SS shall then send UE CAPABILITY INFORMATION CONFIRM to complete this part of the procedure.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.16. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for Cell 1 according to IE "Intra-frequency event identity" set to 1a.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 2 on DCCH using AM RLC which adds a second radio link in cell 1and changes the E-DCH and HS-DSCH serving cell from DC-HSDPA Cell (2,3) to cell 1. When the UE receives this message, at the activation time, the UE shall configure layer 1 to begin E-DCH transmission and HS-DSCH reception using the new radio link on primary cell 1. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. SS checks that this RRC messages is received on Cell 1.

The SS transmits UE CAPABILITY ENQUIRY from Cell 1. The UE shall respond with UE CAPABILITY INFORMATION. SS completes the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.16.
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 1).
4	←		ACTIVE SET UPDATE	SS transmits this message in primary carrier Cell 2 on downlink DCCH using AM RLC. The RRC message instructs the UE to add Cell 1 to the active set and perform a serving E-DCH and HS-DSCH Cell change to Cell 1.
5	SS			At the activation time Cell 1 becomes the serving E-DCH /HS-DSCH Cell.
6	→		ACTIVE SET UPDATE COMPLETE	
			Void	
			Void	
			Void	
			Void	
11	←		UE CAPABILITY ENQUIRY	Use default message. SRB2 on HS-DSCH from Cell 1.
12	→		UE CAPABILITY INFORMATION	
13	←		UE CAPABILITY INFORMATION CONFIRM	SRB2 is sent on HS-DSCH from Cell 1.

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C SFN Frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
Note 1: Cell measured results for cells 1 and 2 may appear in any order.	

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 1	
- Downlink F-DPCH info for each RL		
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code number	F-DPCH code number as used in Cell1	
- TPC Combination Index	1	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	Reference to TS 34.108 clause 6.10.2.4.5 Parameter Set	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	2 E-TFCIs	
- Reference E-TFCI	11	
- Reference E-TFCI PO	4	
- Reference E-TFCI	83	
- Reference E-TFCI PO	16	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information		
- Channelisation Code	4	

- Signature Sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
- E-DCH RL Info other cells	Not Present	

UE CAPABILITY ENQUIRY (Steps 7, 9, 11)

Use the same message sub-type found in TS 34.108 clause 9.1.

UE CAPABILITY INFORMATION (Step 12)

Use the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 13)

Use the same message sub-type found in TS 34.108 clause 9.1.

8.3.4.16.5 Test requirements

At step 3 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 6 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure and the change of serving cell.

At step 12 the UE should transmit UE CAPABILITY INFORMATION on SRB2.

8.3.4.16a Active set update: Dual Cell (DC) Activation by Serving Cell Change from DC-HSDPA capable cell to non DC-HSDPA capable cell with SRB mapped on E-DCH/DCH

8.3.4.16a.1 Definition and applicability

All UE categories which support Dual Cell HSDPA.

8.3.4.16a.2 Conformance requirement

The purpose of the active set update procedure is to update the active set of the connection between the UE and UTRAN. This procedure shall be used in CELL_DCH state. The UE should keep on using the old RLs while configuring the new RLs. Also the UE should keep the transmitter turned on during the procedure. This procedure is only used in FDD mode.

…

The procedure is initiated when UTRAN orders a UE in CELL_DCH state, to make the following modifications of the active set of the connection:

a) Radio link addition;

b) Radio link removal;

c) Combined radio link addition and removal;

d) Addition of a radio link to the E-DCH active set;

e) Removal of a radio link from the E-DCH active set.

The procedure also allows the addition or removal of a radio link on a secondary serving HS-DSCH cell. Radio links on the secondary serving HS-DSCH cell are not part of the active set.

In case a) and c), UTRAN should:

1> prepare new additional radio link(s) in the UTRAN prior to the command to the UE.

In all cases, UTRAN should:

1> send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC;

1> create active sets that contain at least one common radio link across a DPCH or F-DPCH frame boundary as the result of one or multiple (parallel) active set update procedures.

UTRAN should include the following information:

1> IE "Radio Link Addition Information": Downlink DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add. This IE is needed in cases a) and c) listed above;

1> IE "Downlink Secondary Cell Info FDD": Downlink optional parameters relevant to reception of secondary serving HS-DSCH cell;

1> IE "Radio Link Removal Information": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove. This IE is needed in cases b) and c) listed above;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH information" to indicate which radio link to add to the E-DCH active set. This IE is needed in case d) above, when the RL added to the E-DCH active set is already in the DCH active set;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH release indicator" to indicate which radio link to remove from the E-DCH active set. This IE is needed in case e) above, when the RL removed from the E-DCH active set remains in the DCH active set.

…

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

…

1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6:

2> if the IEs "Δ_{ACK}", "Δ_{NACK}", and "HARQ_preamble_mode" are present, act on the received information elements;

2> if the new H-RNTI and "Primary CPICH info" are included:

3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell. If the IE "Downlink Secondary Cell Info FDD" is included for a cell associated with the serving HS-DSCH cell, consider that cell a secondary serving HS-DSCH cell.

2> if the IE "MAC-hs reset indicator" is included:

3> reset the MAC-hs/ehs entity [15].

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

...

If the IE "RB mapping info" is included, the UE shall:

...

For FDD the list of multiplexing options configured in the UE for each RB and SRB should comply with the following rules otherwise the UE behaviour is not specified:

- ...
- at most one multiplexing option can contain the combination "DCH" or "DCH + HS-DSCH" for the DL together with "DCH" for the UL;
- at most one multiplexing option can contain the combination "HS-DSCH" or "DCH + HS-DSCH" for the DL together with "DCH" for the UL;
- ...

Reference

3GPP TS 25.331 clause 8.3.4, 8.3.4.2, 8.3.4.3, 8.6.4.8

8.3.4.16a.3 Test purpose

To confirm that the UE performs HS-DSCH serving cell change from DC-HSDPA capable cell to non DC – HSDPA capable cell with SRB on DCH

8.3.4.16a.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 non DC-HSDPA cell, Cell 2/3 DC HSDPA cell(s) with cell 2 (Primary Carrier) and Cell 3 (Secondary Carrier)

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A25b, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports DC HSDPA

Test Procedure

Table 8.3.4.16a

Parameter	Unit	DC HSDPA Cell (2, 3)		Cell 1	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency (see Note 1)		Mid Range Test Frequency	
CPICH Ec	dBm/3.84MHz	-60	-70	-70	-60
Note 1: For secondary carrier cell 3 the UARFCN is a positive offset of 25 from the UARFCN of the primary carrier frequency cell 2 which translates to 5MHz channel frequency spacing					

Table 8.3.4.16a illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Note that Cell 2 and Cell 3 are DC HSDPA Cells with Cell 2 configured as the primary carrier and Cell 3 configured as the secondary cell.

The downlink transmission power is set according to values in column "T0" in table 8.3.4.16a. The UE has user plane bearers mapped to the E-DCH/HS-DSCH of the DC HSDPA Cell and signalling bearers mapped to DCH on cell 2.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.16a. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for Cell 1 according to IE "Intra-frequency event identity" set to 1a.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 2 on DCCH using AM RLC which adds a second radio link in cell 1and changes the E-DCH and HS-DSCH serving cell from DC-HSDPA Cell (2,3) to cell 1.

When the UE receives this message, at the activation time, the UE shall configure layer 1 to begin E-DCH transmission and HS-DSCH reception using the new radio link on primary cell 1. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. SS checks that this RRC messages is received on Cell 1.

To check that the UE has performed serving HS-DSCH cell change to Cell 1, SS monitors CQI reports on HS-DPCCH received from the UE on Cell 1.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.16a.
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 1).
4	←		ACTIVE SET UPDATE	SS transmits this message in primary carrier Cell 2 on downlink DCCH using AM RLC. The RRC message instructs the UE to add Cell 1 to the active set and perform a serving E-DCH and HS-DSCH Cell change to Cell 1.
5	SS			At the activation time Cell 1 becomes the serving E-DCH /HS-DSCH Cell.
6	→		ACTIVE SET UPDATE COMPLETE	
7				SS starts monitoring CQI reports on HS-DPCCH received from the UE on Cell 1. SS waits for 10 CQI reports.

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is present and includes IE COUNT-C SFN frame difference
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1 and 2 may appear in any order.

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 1	
- Downlink DPCH info for each RL		
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	Not present	
-Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
-Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	1	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	1	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	Reference to TS 34.108 clause 6.10.2.4.5 Parameter Set	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	2 E-TFCIs	
- Reference E-TFCI	11	
- Reference E-TFCI PO	4	
- Reference E-TFCI	83	

- Reference E-TFCI PO	16	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information		
- Channelisation Code	4	
- Signature Sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
- E-DCH RL Info other cells	Not Present	

8.3.4.16a.5 Test requirements

At step 3 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 6 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure and the change of serving cell.

At step 7 the UE shall start transmitting CQI report on HS-DPCCH to Cell 1.

8.3.4.17 Active Set Update in Soft Handover: Radio Link addition/removal and serving HS-DSCH / E-DCH cell change with simultaneous activation/deactivation of 64QAM and MIMO

8.3.4.17.1 Definition and applicability

UE category supports combined 64QAM and MIMO activation. UE support FDD and F-DPCH or Enhanced F-DPCH.

8.3.4.17.2 Conformance requirement

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> if the IE "MIMO parameters" is not included:

2> clear the MIMO_PARAMS variable;

2> trigger lower layers to stop operation in MIMO mode.

1> otherwise:

2> for FDD, if the IE "MIMO N_cqi_typeA/M_cqi ratio" is included:

3> store the value of the IE "MIMO N_cqi_typeA/M_cqi ratio" in the MIMO_PARAMS variable.

2> for FDD, if the IE "MIMO pilot configuration" is included:

5> store the value of the IE "MIMO pilot configuration" in the MIMO_PARAMS variable.

[…]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the UE shall:

1> take actions related to the MIMO_PARAMS variable as specified in subclause 8.5.32;

1> determine the value of the MIMO_STATUS variable.

The MIMO_STATUS variable shall be set to TRUE only when all the following conditions are met:

1> The UE is in CELL_DCH state;

1> the variable HS_DSCH_RECEPTION is set to TRUE;

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO N_cqi_typeA/M_cqi ratio"; and

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO pilot configuration".

1> for 1.28 Mcps TDD, the variable MIMO_PARAMS contains a value for the IE "MIMO SF Mode for HS-PDSCH dual stream".

If any of the above conditions is not met and the MIMO_STATUS variable is set to TRUE, the UE shall:

1> set the MIMO_STATUS variable to FALSE;

1> clear the MIMO_PARAMS variable;

3> trigger lower layers to stop operation in MIMO mode.

[…]

With the exception of the provisions of subclause 6A.3, the following shall apply when the UE is configured in MIMO mode:

1) The UE derives the PCI value as defined in subclause 6A.4 and either a type A or a type B CQI value as defined in subclause 6A.2.2 depending on which type of CQI shall be reported as defined below.

[…]

>FDD					
>>Downlink 64QAM configured	OP		Enumerated (TRUE)	Absence of this IE means that the HS-SCCH does not use the 64QAM format. The presence of this IE means the UE uses the octet aligned table [15].	REL-7
>>HS-DSCH TB size table	CV-*Not64QAM*		Enumerated (octet aligned)	If this IE is present, octet aligned table [15] is used, else bit aligned table [15] is used.	REL-7

Condition	**Explanation**
Not64QAM	This IE is optionally present if 64QAM is not configured and MAC-ehs is configured. Otherwise it is not needed.

Reference

3GPP TS 25.331 clause 8.5.32, 8.5.33, 10.3.6.23a

3GPP TS 25.214 clause 6A.1.2.2

8.3.4.17.3 Test purpose

1. To confirm that the UE starts 64QAM and MIMO reception according to the received ACTIVE SET UPDATE message.

2. To confirm that the UE maintains 64QAM and MIMO reception according to the received ACTIVE SET UPDATE message

3. To confirm that the UE stops 64QAM and MIMO reception according to the received ACTIVE SET UPDATE message.

8.3.4.17.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1: non 64QAM and MIMO cell, Cell 2: 64QAM and MIMO configured, Cell 3: 64QAM and MIMO configured

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-17) under condition A17b, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports combined 64QAM and MIMO
- UE supports F-DPCH or Enhanced-F-DPCH

Test Procedure

Table 8.3.4.17-1

Cell	UTRA RF Channel Number
Cell 1	Mid Range Test Frequency
Cell 2	Mid Range Test Frequency
Cell 3	Mid Range Test Frequency

Table 8.3.4.17-2

		Time					
Parameter	Unit	T0	T1	T2	T3	T4	T5
Cell 1 CPICH Ec	dBm/3.84MHz	-60	-60	-75	-75	-75	-60
Cell 2 CPICH Ec	dBm/3.84MHz	-75	-60	-60	-60	-75	-75
Cell 3 CPICH Ec	dBm/3.84MHz	-75	-75	-75	-60	-60	-60

Table 8.3.4.17 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.17-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" and 64QAM and MIMO configuration. At the activation time, the UE shall activate 64QAM and MIMO reception and configure SRB and user plane bearers for HS-DSCH reception (L1 configured for 64QAM and MIMO on separate antennae) using the new radio link with cell 2 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 using 64QAM and MIMO configuration. The UE shall respond with a UE CAPABILITY INFORMATION message. The SS completes this part of the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message to the UE with SRB configured for 64QAM and MIMO.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.17-2. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS will remove the radio link from cell 1 and then SS transmits an ACTIVE SET UPDATE message using 64QAM and MIMO configuration, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed. When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC on SRB2. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 from Cell 2 using 64QAM and MIMO configuration and the UE shall respond with a UE CAPABILITY INFORMATION message. The SS completes this part of the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message to the UE with SRB configured for 64QAM and MIMO.

The SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.17-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 2 on DCCH using AM RLC and 64QAM and MIMO configuration which includes the IE "Radio Link Addition Information". At the activation time, the UE shall maintain 64QAM and MIMO reception but with Cell 3 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 using 64QAM and MIMO configuration. The UE shall respond with a UE CAPABILITY INFORMATION message. The SS completes this part of the procedure by transmitting a UE CAPABILITY INFORMATION CONFIRM message to the UE with SRB configured for 64QAM and MIMO.

SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.17-2. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1b' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS will remove the radio link from cell 2 and then SS transmits an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed.

SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.17-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 1 and then the SS transmits to the UE an ACTIVE SET UPDATE message from cell 3 on DCCH using MIMO configuration which includes the IE "Radio Link Addition Information" but with no MIMO or 64QAM parameters in RRC message. When the UE receives this message, the UE shall deactivate 64QAM and MIMO reception and use cell 1 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The SS transmits a UE CAPABILITY ENQUIRY message on DL SRB2 on HS-DSCH using QPSK. The UE shall respond with a UE CAPABILITY INFORMATION message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.17-2.
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2).
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information" for cell 2. Valid MIMO parameters and 64QAM parameters are specified and Cell 2 becomes the serving Cell.
5	→		ACTIVE SET UPDATE COMPLETE	
6	SS			At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 2 and applies the new configuration.
7	←		UE CAPABILITY ENQUIRY	Use default message. SRB2 is sent using the configured L1 64QAM and MIMO configuration. i.e. parallel data stream on antenna 1 and antenna 2 with separate modulation patterns on P-CPICH.
8	→		UE CAPABILITY INFORMATION	
9	←		UE CAPABILITY INFORMATION CONFIRM	SRB2 is sent on HS-DSCH using configured L1 64QAM and MIMO from Cell 2.
10				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.17-2.
11	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 1).
12	←		ACTIVE SET UPDATE	The SS transmits this message on SRB2 using 64QAM and MIMO configuration which includes IE "Radio Link Removal Information". Valid MIMO configuration parameters are specified.
13	→		ACTIVE SET UPDATE COMPLETE	
14	SS			At the activation time the SS removes the radio link associated with Cell 1
15				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.17-2.
16	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 3).
17	←		ACTIVE SET UPDATE	SS transmits this message (SRB2 using 64QAM and MIMO configuration) from cell 2. The message includes IE "Radio Link Addition Information" for cell 3. Cell 3 to become the serving Cell.
18	→		ACTIVE SET UPDATE COMPLETE	

19	SS		At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 3 and applies the new configuration.
20	←	UE CAPABILITY ENQUIRY	Use default message. SRB2 is sent using the configured L1 64QAM and MIMO configuration from Cell3.
21	→	UE CAPABILITY INFORMATION	
22	←	UE CAPABILITY INFORMATION CONFIRM	SRB2 is sent on HS-DSCH using configured L1 64QAM and MIMO.
23			SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.17-2.
24	→	MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 2).
25	←	ACTIVE SET UPDATE	The SS transmits this message on SRB2 using 64QAM and MIMO configuration. The RRC message includes IE "Radio Link Removal Information" for Cell 2.
26	→	ACTIVE SET UPDATE COMPLETE	
27	SS		At the activation time the SS removes the radio link associated with Cell 2
28			SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.17-2.
29	→	MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 1).
30	←	ACTIVE SET UPDATE	The SS transmits this message on SRB2 using 64QAM and MIMO configuration. The RRC message includes IE "Radio Link Addition Information" for Cell 1 with 64QAM and MIMO configuration absent. Cell 1 to become the active Cell.
31	→	ACTIVE SET UPDATE COMPLETE	
32	SS		At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 1 and applies the new configuration.
33		UE CAPABILITY ENQUIRY	Use default message. SRB2 sent on HS-DSCH from Cell 1 using QPSK.
34	→	UE CAPABILITY INFORMATION	
35	←	UE CAPABILITY INFORMATION CONFIRM	SRB2 on HS-DSCH from Cell 1 using QPSK.

Specific Message Content

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	2 kinds
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1b
- Triggering condition 1	Active set cells
- Triggering condition 2	Not Present
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2, cell 3 shall be in accordance with the default SIBs as specified in TS 34.108.

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1 and 2 may appear in any order.

NOTE 2: Cell measured results for cells 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present it can appear in any order.

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
MIMO Parameters		
- MIMO Operation	Start	
- CHOICE mode	FDD	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code number	F-DPCH code number as used in Cell1	
- TPC Combination Index	1	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	TRUE	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	12	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	

- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

UE CAPABILITY ENQUIRY (Steps 7, 20, 33)

Use the same message sub-type found in TS 34.108 clause 9.1

UE CAPABILITY INFORMATION (Steps 8, 21, 34)

Use the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Steps 9, 22, 35)

Use the same message sub-type found in TS 34.108 clause 9.1

MEASUREMENT REPORT (Step 11)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	Cell 2. See Note 1
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	Cell 1. see Note 1
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	Cell 3. see Note 1
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured results for cells 1 and 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level)

ACTIVE SET UPDATE (Step 12)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
MIMO Parameters		
- MIMO Operation	Continue	
- CHOICE mode	FDD	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	
Radio link removal information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 1	

MEASUREMENT REPORT (Step 16)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured result for cell 1 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

ACTIVE SET UP DATE (Step 17)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0111'	
New Primary E-RNTI	'0101 0101 0101 0111'	
MIMO Parameters		
- MIMO Operation	Start	
- CHOICE mode	FDD	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 3	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code number	F-DPCH code number as used in Cell1	
- TPC Combination Index	0	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 3	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	TRUE	
- HS-DSCH TB size table	Not Present	
- HARQ Info		
- Number of Processes	12	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 3	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	

- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

MEASUREMENT REPORT (Step 24)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3(FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. see Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. see Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- CHOICE event result	Intra-frequency measurement event results
- Intra-frequency event identity	1b
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured results for cells 1 and 2 may or may not be present (depends upon the capability of the UE and test uncertainties in power level)

ACTIVE SET UPDATE (Step 25)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
MIMO Parameters		
- MIMO Operation	Continue	
- CHOICE mode	FDD	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	
Radio link removal information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	

MEASUREMENT REPORT (Step 29)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order. Cell measured result for cell 2 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

ACTIVE SET UPDATE (Step 30)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 1101'	
New Primary E-RNTI	'0101 0101 0101 1101'	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 1	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code number	F-DPCH code number as used in Cell1	
- TPC Combination Index	1	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	6	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 1	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

8.3.4.17.5 Test requirements

At steps 3, 11, 16, 24, 29 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At steps 5, 13, 18 and 26, 31 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the previous ACTIVE SET UPDATE and indicate readiness to accept the new configuration at activation time.

At step 8, 21, 34, the UE should transmit UE CAPABILITY INFORMATION on SRB2.

8.3.4.18 Test procedure for enhanced serving HS-DSCH cell change: serving HS-DSCH / E-DCH cell change, with discontinuous uplink transmission and downlink reception

8.3.4.18.1 Definition and applicability

All UEs which support FDD,UL DTX,DPCCH Discontinuous Transmission and Target Cell Pre-Configuration.

8.3.4.18.2 Conformance requirement

For the measurement, which triggered the MEASUREMENT REPORT message, the UE shall:

1> if the measurement report is triggered by intra frequency event 1d and the table "Target cell preconfigurations" in the variable TARGET_CELL_PRECONFIGURATION includes the Radio link that triggered the event:

2> if an "Activation time offset" different from 0 is configured for the target cell, include the IE "Activation time" in MEASUREMENT REPORT message. The Activation time shall be calculated by adding the Activation time offset to the current CFN:

3> start continuous monitoring of target cell HS-SCCH indexed as number 1 in IE "Serving HS-DSCH cell information" in the stored configuration;

3> stop monitoring target cell HS-SCCH at Activation time.

2> else:

3> start if not running, or restart if running, timer T324;

3> start continuous monitoring of target cell HS-SCCH indexed as number 1 in IE "Serving HS-DSCH cell information" in the stored configuration until the expiry of timer T324.

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

…

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronisation B, as specified in TS 25.214;

1> the procedure ends on the UE side.

…

1> if any of the IEs "DTX-DRX timing information" or "DTX-DRX information" are stored in the UE:

2> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

…

If the UE receives RRC CONNECTION SETUP, ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> the UE shall determine the value for the DTX_DRX_STATUS variable.

The variable DTX_DRX_STATUS shall be set to TRUE only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> both variables HS_DSCH RECEPTION and E_DCH_TRANSMISSION are set to TRUE;

1> no DCH transport channel is configured;

1> the variable DTX_DRX_PARAMS is set;

1> the UE has received the IE "DTX-DRX timing information".

If any of the above conditions is not met and the variable DTX_DRX_STATUS is set to TRUE, the UE shall:

1> set the variable DTX_DRX_STATUS to FALSE;

1> clear the variable DTX_DRX_PARAMS;

1> stop DTX-DRX mode related activities.

If variable DTX_DRX_STATUS is set to true and the serving HS-DSCH cell was changed as a result of the received message the UE shall instruct the physical layer to consider HS-SCCH orders were never received.

Whenever the variable DTX_DRX_STATUS is set to TRUE after receiving this message and the value of IE "DTX-DRX timing information" included in this message is not "Continue", the UE shall:

1> if the variable DTX_DRX_STATUS was set to TRUE before receiving this message:

2> re-configure the physical layer to perform discontinuous uplink DPCCH transmission and enable discontinuous downlink reception operations according to the variable DTX_DRX_PARAMS at the CFN corresponding to the frame boundary that is offset by the value of the IE "Enabling Delay" from the frame boundary where uplink transmission starts with new configuration;

2> let the MAC layer continue with the current restriction on E-DCH transmission and monitoring of absolute and relative grant channels from the frame boundary where the uplink transmission starts with the new configuration and for the duration of the IE "Enabling Delay".

1> else:

2> perform discontinuous uplink DPCCH transmission and enable discontinuous downlink reception operations by configuring the physical layer according to the variable DTX_DRX_PARAMS at the CFN corresponding to the frame boundary that is offset by the value of the IE "Enabling Delay" from the frame boundary where uplink transmission starts with new configuration.

1> configure the MAC layer to start restricting E-DCH transmissions and monitor absolute and relative grant channels at the CFN corresponding to the frame boundary that is offset by the value of IE "Enabling Delay" from the frame boundary where uplink transmission starts with new configuration taking into account the IEs "UE DTX DRX Offset", "MAC DTX Cycle", "MAC Inactivity Threshold" and "Inactivity Threshold for UE Grant Monitoring".

…

If the IE "DTX-DRX timing information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> if the CHOICE "timing" is set to "New timing":

2> use the newly received DTX-DRX timing configuration.

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

…

If the IE "DTX–DRX information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the contents of the IE in the variable DTX_DRX_PARAMS;

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34;

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple of the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple or a divisor of the value of the IE "CQI Feedback cycle, k"; or

1> if the value of the IE "UE DPCCH burst 1" is greater than the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DPCCH burst 2" is greater than the value of the IE "UE DTX cycle 2"; or

1> if the IE "UE DTX long preamble length" is set to 4 or 15 slots and the value of the IE "Inactivity Threshold for UE DTX cycle 2" is less than 4 TTIs (for 10ms E-DCH TTI) or 8 TTIs (for 2ms E-DCH TTI); or

1> if the IE "UE DRX cycle" is not an integer multiple or a divisor of the value of the IE "UE DTX cycle 1"; or

1> if the IE "DRX Information" is included in this message while the IE "DTX information" is not included in this message; or

1> if the value of the IE "UE DTX cycle 1" is not an integer multiple or a divisor of the value of the IE "MAC DTX cycle":

2> the UE behaviour is unspecified.

Reference

3GPP TS 25.331 clause 8.4.22

3GPP TS 25.331 clause 8.2.2.3, 8.3.4, 8.5.34, 8.6.6.38, 8.6.6.39

8.3.4.18.3 Test purpose

1. To confirm that the UE performs continuously monitoring on HS-SCCH when performing serving HS-DSCH cell change with target cell pre-configuration, with discontinuous uplink transmission and downlink reception according to the received ACTIVE SET UPDATE message.

2. To confirm that the UE performs discontinuous uplink DPCCH transmission and downlink reception according to the IE "Target cell preconfiguration information" within new cell after enhanced serving HS-DSCH cell change.

8.3.4.18.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and cell 2 are active

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A20, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports DPCCH Discontinuous Transmission
- UE supports target cell preconfiguration

Test Procedure

Table 8.3.4.18

Parameter	Unit	Cell 1			Cell 2		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			Mid Range Test Frequency		
CPICH Ec	dBm/3.84MHz	-60	-60	-70	-70	-60	-60

Table 8.3.4.18 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The downlink transmission power is set according to values in column “T0” in table 8.3.4.18. The UE has a radio bearer mapped to the E-DCH/HS-DSCH and the signalling radio bearers mapped on E-DCH/HS-DSCH in cell 1.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.18. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity" set to 1a.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which adds a second radio link in cell 2 with preconfiguration and DTX-DRX information for cell 1. The SS sets the IE “Activation Time offset” to 4, which indicates to UE the enhanced serving HS-DSCH cell change is a synchronized handover procedure. When the UE receives this message, the UE shall configure layer 1 to begin E-DCH transmission, with UL DPCCH discontinuous transmission. Cell 1 shall be kept as the serving HS-DSCH cell. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

The SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.18. The SS sends a MEASUREMENT CONTROL message to the UE configuring event 1D “Change of best cell”, and the UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE “Intra-frequency event identity” set to 1d. UE shall calculate “Activation Time” according to “Activation Time offset” in ACTIVE SET UPDATE message, and include the “Activation Time” in MEASUREMNT REPORT message.

The SS shall not send any HSDPA data on cell 1 after the start of T2. During time period T2 UTRAN shall send an HS-SCCH order on HS-SCCH-1 from cell 2 implying enhanced serving HS-DSCH from cell 1 to cell 2.

UE shall exit discontinuous uplink transmission and downlink reception state in cell 1, and start continuous monitoring of HS-SCCH order on HS-SCCH-1 from cell 2 until the expiry of Activation Time.

When UE has received the HS-SCCH order successfully from cell 2, the UE shall configure layer 1 to begin E-DCH transmission, with UL DPCCH discontinuous transmission, using the new radio link in cell 2. The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used.

The SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the E-DCH in cell 1 and cell 2. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS calls for generic procedure C.3 to check that the UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	SS			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.18
2	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2)
3	←		ACTIVE SET UPDATE	The SS instructs the UE to start discontinuous uplink transmission with DTX-DRX information in cell 1. The SS instructs the UE to add cell 2 in the active set, and perform a preconfiguration to cell 2
4	→		ACTIVE SET UPDATE COMPLETE	The UE adds the radio link cell 2 and performs a preconfiguration to cell 2. The UE performs discontinuous uplink transmission in cell 1. SS receives this message from cell 2.
5	SS			SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.18
6	←		MEASUREMENT CONTROL	Configure event 1D "Change of best cell"
7	→		MEASUREMENT REPORT	See specific message contents for this message (event '1d' for cell 2)
8	←		HS-SCCH order	SS shall send an HS-SCCH order from cell 2 implying enhanced serving HS-DSCH from cell 1 to cell 2.
9	SS			At the activation time, the SS changes the serving E-DCH and HS-DSCH radio link to cell 2.
10	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	At the activation time, the UE performs a serving E-DCH and HS-DSCH cell change to cell 2 with discontinuous transmission. SS receives this message from cell 2.
11	SS			The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used (i.e. duration of 10 consecutive DTX cycle 2).
12				SS is reconfigured to listen on cell 2
13	←		UE CAPABILITY ENQUIRY	
14	→		UE CAPABILITY INFORMATION	SS receives this message from cell 2
15	←		UE CAPABILITY INFORMATION CONFIRM	
16	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

MEASUREMENT REPORT (Step 2)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE message (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element/Group name	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	"now".
-New U-RNTI	Not Present
CN information elements	
-CN Information info	Not Present
Phy CH information elements	
-DTX-DRX timing information	
-CHOICE *timing*	
- New timing	
- Enabling Delay	0 if 2ms TTI selected, otherwise 16
- UE DTX DRX Offset	1 if 2ms TTI selected, otherwise 0
-DTX-DRX Information	
-DTX information	
- CHOICE *E-DCH TTI length*	Unless stated otherwise, this should be set to 2ms if the UE supports 2ms TTI, or 10ms if the UE does not support 2ms TTI.
- UE DTX cycle 1	8 if 2ms TTI selected, otherwise 10
- UE DTX cycle 2	16 if 2ms TTI selected, otherwise 20
- MAC DTX cycle	8 if 2ms TTI selected, otherwise 10
- Inactivity Threshold for UE DTX cycle 2	32 if 2ms TTI selected, otherwise 8
- UE DTX long preamble length	4
- MAC Inactivity Threshold	1 if 2ms TTI selected, otherwise 8
- CQI DTX Timer	32
- UE DPCCH burst_1	1
- UE DPCCH burst_2	1
-DRX Information	
- UE DRX cycle	8 if 2ms TTI selected, otherwise 10
- Inactivity Threshold for UE DRX cycle	32
- Inactivity Threshold for UE Grant	32 if 2ms TTI selected, otherwise 8
Monitoring	
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
Downlink radio resources	
-Radio link addition information	Radio link addition information required for each RL to add
-Primary CPICH info	Same as defined in cell2
-Downlink DPCH info for each RL	
-CHOICE *mode*	
-FDD	
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	This should be reflected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-Closed loop timing adjustment mode	Not Present
-TFCI combining indicator	FALSE
-SCCPCH Information for FACH	Not Present
-Target cell preconfiguration information	Target cell preconfiguration information required
-Activation Time offset	4
-New H-RNTI	'0101 0101 0101 0101'

Information Element/Group name	Value/Remark
-New Primary E-RNTI	'0101 0101 0101 0111'
-New Secondary E-RNTI	Not Present
Serving Cell Change Parameters	
- Serving Cell Change MAC reset	TRUE
- Serving Cell Change Message Type	PHYSICAL CHANNEL RECONFIGURATION
- Serving Cell Change Transaction Id	0
-Serving HS-DSCH cell information	
-Δ_{ACK}	3
-Δ_{NACK}	3
-HARQ_preamble_mode	0
-Primary CPICH info	0
-Downlink HS-PDSCH Information	
- HS-SCCH Info	
- Measurement Feedback Info	
- CHOICE mode	
FDD	
- Downlink 64QAM configured	FALSE
- HS-DSCH TB size table	FALSE
- HARQ Info	
- Number of Processes	6
- CHOICE *Memory Partitioning*	Implicit
- MAC-hs reset indicator	FALSE
-E-DCH reconfiguration information	
- E-DCH RL Info new serving cell	
- Primary CPICH info	
- Primary Scrambling Code	Set to the primary scrambling code of cell 2
- E-AGCH Info	
- E-AGCH Channelisation Code	10
- Serving Grant	Not Present
- E-DPCCH/DPCCH power offset	Not Present
- Reference E-TFCIs	Not present
- Power Offset for Scheduling Info	Not Present
- 3-Index-Step Threshold	Not Present
- 2-Index-Step Threshold	Not Present
- E-HICH Information	Not Present
- CHOICE E-RGCH Information	Not Present
- E-DCH RL Info other cells	Not Present
-DTX-DRX timing information	
-CHOICE *timing*	
- New timing	
- Enabling Delay	0 if 2ms TTI selected, otherwise 16
- UE DTX DRX Offset	1 if 2ms TTI selected, otherwise 0
-DTX-DRX Information	
-DTX information	
- CHOICE *E-DCH TTI length*	Unless stated otherwise, this should be set to 2ms if the UE supports 2ms TTI, or 10ms if the UE does not support 2ms TTI.
- UE DTX cycle 1	8 if 2ms TTI selected, otherwise 10
- UE DTX cycle 2	16 if 2ms TTI selected, otherwise 20
- MAC DTX cycle	8 if 2ms TTI selected, otherwise 10
- Inactivity Threshold for UE DTX cycle 2	32 if 2ms TTI selected, otherwise 8
- UE DTX long preamble length	4
- MAC Inactivity Threshold	1 if 2ms TTI selected, otherwise 8
- CQI DTX Timer	32
- UE DPCCH burst_1	1
- UE DPCCH burst_2	1
-DRX Information	
- UE DRX cycle	8 if 2ms TTI selected, otherwise 10
- Inactivity Threshold for UE DRX cycle	32
- Inactivity Threshold for UE Grant Monitoring	32 if 2ms TTI selected, otherwise 8
-HS-SCCH less Information	Not Present
-MIMO parameters	Not Present
- Downlink secondary cell info FDD	Not Present
Radio link removal information	Radio link removal information required for each RL to remove
-Radio link removal information	Not Present
-TX Diversity Mode	None

MEASUREMENT CONTROL (Step 6)

Use the same message as specified in 34.108 except for the following:

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
- CHOICE measurement type	Intra-frequency measurement
- Intra frequency cell info list	Not present
- Intra-frequency measurement quantity	
- Filter coefficient	3
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	FALSE
- CPICH Ec/N0 reporting indicator	TRUE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	FALSE
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not Present
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each event	
- Intra-frequency event identity	1D
- Triggering condition 2	Active set cells
- Hysteresis	8 (4 dB)
- Time to trigger	20 mSec
- Reporting cell status	
- CHOICE reported cell	Report cells within active set
- Maximum number of reported cells	3
- Use CIO	FALSE
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 7)

Use the same message as specified in 34.108 except for the following:

Information Element	Value/remark
Activation time	Checked that this IE is present
Measurement identity	2
Measured results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- DeltaRSCP	Not checked
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- DeltaRSCP	Not checked
- Pathloss	Checked that this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional Measured results	Check to see if this IE is absent
Event results	Check to see if set to "Intra-frequency event results"
- Event ID	Check to see if set to "1D"
- Cell measurement event results	
- Primary scrambling code	Check to see if set to "Primary scrambling code of Cell 2"

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 10)

Use the same message sub-type found in TS 34.108 clause 9.1

UE CAPABILITY ENQUIRY (Step 13)

Use the same message sub-type found in TS 34.108 clause 9.1

UE CAPABILITY INFORMATION (Step 14)

Use the same message sub-type found in TS 34.108 clause 9.1

UE CAPABILITY INFORMATION CONFIRM (Step 15)

Use the same message sub-type found in TS 34.108 clause 9.1

8.3.4.18.5 Test requirement

After step 2 the UE shall transmit a MEASUREMENT REPORT message with event 1A.

After step 4 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message.

After step 7 the UE shall transmit a MEASUREMENT REPORT message with event 1D.

After step 10 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

At step 11 the time between 11 consecutive CQI indications shall be 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used.

8.3.4.19 Active set update: Dual Cell (DC) and MIMO Activation by Serving Cell Change from non-DC-HSDPA capable cell to DC-HSDPA capable cell

8.3.4.19.1 Definition and applicability

All UE categories which support Dual Cell HSDPA and MIMO. UE supports F-DPCH or Enhanced F-DPCH.

8.3.4.19.2 Conformance requirement

The purpose of the active set update procedure is to update the active set of the connection between the UE and UTRAN. This procedure shall be used in CELL_DCH state. The UE should keep on using the old RLs while configuring the new RLs. Also the UE should keep the transmitter turned on during the procedure. This procedure is only used in FDD mode.

[…]

The procedure is initiated when UTRAN orders a UE in CELL_DCH state, to make the following modifications of the active set of the connection:

a) Radio link addition;

b) Radio link removal;

c) Combined radio link addition and removal;

d) Addition of a radio link to the E-DCH active set;

e) Removal of a radio link from the E-DCH active set.

The procedure also allows the addition or removal of a radio link on a secondary serving HS-DSCH cell. Radio links on the secondary serving HS-DSCH cell are not part of the active set.

In case a) and c), UTRAN should:

1> prepare new additional radio link(s) in the UTRAN prior to the command to the UE.

In all cases, UTRAN should:

1> send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC;

1> create active sets that contain at least one common radio link across a DPCH or F-DPCH frame boundary as the result of one or multiple (parallel) active set update procedures.

UTRAN should include the following information:

1> IE "Radio Link Addition Information": Downlink DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add. This IE is needed in cases a) and c) listed above;

1> IE "Downlink Secondary Cell Info FDD": Downlink optional parameters relevant to reception of secondary serving HS-DSCH cell;

1> IE "Radio Link Removal Information": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove. This IE is needed in cases b) and c) listed above;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH information" to indicate which radio link to add to the E-DCH active set. This IE is needed in case d) above, when the RL added to the E-DCH active set is already in the DCH active set;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH release indicator" to indicate which radio link to remove from the E-DCH active set. This IE is needed in case e) above, when the RL removed from the E-DCH active set remains in the DCH active set.

[…]

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

[…]

1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6:

2> if the IEs "Δ_{ACK}", "Δ_{NACK}", and "HARQ_preamble_mode" are present, act on the received information elements;

2> if the new H-RNTI and "Primary CPICH info" are included:

3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell. If the IE "Downlink Secondary Cell Info FDD" is included for a cell associated with the serving HS-DSCH cell, consider that cell a secondary serving HS-DSCH cell.

2> if the IE "MAC-hs reset indicator" is included:

3> reset the MAC-hs/ehs entity [15].

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

[…]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> if the IE "MIMO parameters" is not included:

2> clear the MIMO_PARAMS variable;

2> trigger lower layers to stop operation in MIMO mode.

1> otherwise:

2> for FDD, if the IE "MIMO N_cqi_typeA/M_cqi ratio" is included:

3> store the value of the IE "MIMO N_cqi_typeA/M_cqi ratio" in the MIMO_PARAMS variable.

2> for FDD, if the IE "MIMO pilot configuration" is included:

3> store the value of the IE "MIMO pilot configuration" in the MIMO_PARAMS variable.

[…]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the UE shall:

1> take actions related to the MIMO_PARAMS variable as specified in subclause 8.5.32;

1> determine the value of the MIMO_STATUS variable.

The MIMO_STATUS variable shall be set to TRUE only when all the following conditions are met:

1> The UE is in CELL_DCH state;

1> the variable HS_DSCH_RECEPTION is set to TRUE;

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO N_cqi_typeA/M_cqi ratio"; and

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO pilot configuration".

1> for 1.28 Mcps TDD, the variable MIMO_PARAMS contains a value for the IE "MIMO SF Mode for HS-PDSCH dual stream".

If any of the above conditions is not met and the MIMO_STATUS variable is set to TRUE, the UE shall:

1> set the MIMO_STATUS variable to FALSE;

1> clear the MIMO_PARAMS variable;

1> trigger lower layers to stop operation in MIMO mode.

[…]

With the exception of the provisions of subclause 6A.3, the following shall apply when the UE is configured in MIMO mode:

1) The UE derives the PCI value as defined in subclause 6A.4 and either a type A or a type B CQI value as defined in subclause 6A.2.2 depending on which type of CQI shall be reported as defined below.

[…]

An entry in the variable SECONDARY_CELL_HS_DSCH_RECEPTION shall be set to TRUE only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the corresponding IE "Downlink Secondary Cell Info FDD" is included;

1> the variable HS_DSCH_RECEPTION is set to TRUE;

[…]

If any of the above conditions is not met for a secondary serving HS-DSCH cell, and the corresponding entry in the variable SECONDARY_CELL_HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the corresponding entry in the variable SECONDARY_CELL_HS_DSCH_RECEPTION to FALSE;

1> clear the corresponding entry in the variable DOWNLINK_SECONDARY_CELL_INFO;

1> flush the HARQ buffers of the HARQ entity associated to that secondary serving HS-DSCH cell;

1> release the HARQ resources associated to that secondary serving HS-DSCH cell.

If there is at least one entry in the variable SECONDARY_CELL_HS_DSCH_RECEPTION set to TRUE, the UE shall:

1> apply the i-th entry in the variables DOWNLINK_SECONDARY_CELL_INFO, SECONDARY_CELL_HS_DSCH_RECEPTION, and SECONDARY_CELL_MIMO_STATUS to the i-th secondary serving HS-DSCH cell.

[…]

For each entry in the variable SECONDARY_CELL_HS_DSCH_RECEPTION which is set to TRUE, the UE shall:

1> receive the HS-SCCH(s) according to the corresponding IE "Downlink Secondary Cell Info FDD" on the serving HS-DSCH radio link applying the scrambling code as received in the corresponding IE "DL Scrambling code";

1> perform HS-DSCH reception procedures for the corresponding secondary serving HS-DSCH cell according to the stored HS-PDSCH configuration as stated in:

[…]

Whenever any entry in the variable SECONDARY_CELL_HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS-SCCH reception procedures on the corresponding secondary serving HS-DSCH cell;

1> determine the value for the SECONDARY_CELL_E_DCH_TRANSMISSION and take the corresponding actions as described in subclause 8.5.58.

If any entry in the variable SECONDARY_CELL_HS_DSCH_RECEPTION is set to TRUE and the serving HS-DSCH cell was changed as a result of the received message or HS-SCCH order from the target cell, the UE shall instruct the physical layer to consider that the HS-SCCH orders from the serving cell were never received.

[…]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message which includes the IE "Downlink secondary cell info FDD" for any of the secondary serving HS-DSCH cells, the UE shall:

1> if the IE "Secondary cell MIMO parameters" is not included in the IE "Downlink secondary cell info FDD":

2> clear the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable;

1> if the CHOICE "Configuration Info" in the IE "Secondary cell MIMO parameters" has the value "Continue":

2> continue using the stored parameters in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable;

1> otherwise:

2> if the IE "MIMO N_cqi_typeA/M_cqi ratio" is included:

3> store the value of the IE "MIMO N_cqi_typeA/M_cqi ratio" in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable.

2> if the IE "MIMO pilot configuration" is included:

3> store the value of the IE "MIMO pilot configuration" in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable.

1> determine the value of the SECONDARY_CELL_MIMO_STATUS variable for the corresponding HS-DSCH serving cell.

The SECONDARY_CELL_MIMO_STATUS variable shall be set to TRUE for a secondary HS-DSCH serving cell only when all the following conditions are met:

1> The UE is in CELL_DCH state;

1> the variable SECONDARY_CELL_HS_DSCH_RECEPTION is set to TRUE for that secondary HS-DSCH serving cell;

1> if the UE does not support MIMO only with single stream restriction, the corresponding entry in the variable SECONDARY_CELL_MIMO_PARAMS contains a value for the IE "MIMO N_cqi_typeA/M_cqi ratio"; and

1> the corresponding entry in the variable SECONDARY_CELL_MIMO_PARAMS contains a value for the IE "MIMO pilot configuration".

If any of the above conditions is not met and the SECONDARY_CELL_MIMO_STATUS variable is set to TRUE for that secondary HS-DSCH serving cell, the UE shall:

1> set the entry in the SECONDARY_CELL_MIMO_STATUS variable corresponding to that secondary HS-DSCH serving cell to FALSE;

1> clear the entry in the SECONDARY_CELL_MIMO_PARAMS variable corresponding to that secondary HS-DSCH serving cell;

1> trigger lower layers to stop MIMO operation on that secondary serving HS-DSCH cell.

Whenever the entry in the variable SECONDARY_CELL_HS_DSCH_RECEPTION is set to TRUE for a secondary HS-DSCH serving cell, the UE shall:

1> if the UE supports MIMO only with single stream restriction (FDD only):

2> indicate to lower layers to start operation in MIMO mode restricted to single stream transmission on that secondary serving HS-DSCH cell, using the parameter values stored in the corresponding entry in the variable SECONDARY_CELL_MIMO_PARAMS.

1> else:

2> indicate to lower layers to start operation in MIMO mode on that secondary serving HS-DSCH cell, using the parameter values stored in the corresponding entry in the variable SECONDARY_CELL_MIMO_PARAMS.

1> for FDD, when MIMO only with single stream restriction is configured:

2> if MAC-ehs is not configured:

2> the UE behaviour is undefined.

Reference

3GPP TS 25.331 clause 8.3.4.2, 8.3.4.3, 8.5.32, 8.5.33, 8.5.51, 8.5.57

8.3.4.19.3 Test purpose

To confirm that the UE performs HS-DSCH serving cell change and start MIMO reception from non DC-HSDPA and non MIMO capable cell to DC-HSDPA and MIMO capable cell.

8.3.4.19.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1: non DC-HSDPA and non MIMO cell, Cell 2/3: DC-HSDPA and MIMO configured cell(s) with cell 2 (Primary Carrier) and Cell 3 (Secondary Carrier).

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-17) under condition A17b, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports combined DC HSDPA and MIMO
- UE supports F-DPCH or Enhanced F-DPCH

Test Procedure

Table 8.3.4.19-1

Cell	UTRA RF Channel Number
Cell 1	Mid Range Test Frequency
Cell (2,3)	Mid Range Test Frequency(see Note1)
Note 1: DC HSDPA Cell test frequencies are specified in [9] cl 5.1.1 for the operating band under test. For the secondary Cell 3 no other common physical channel other than CPICH shall be configured [5] cl. 4.2.4. The SFN and Tcell of the secondary cell are the same as the serving cell [29] cl. 7.1.	

Table 8.3.4.19-2

		Time	
Parameter	Unit	T0	T1
Cell 1 CPICH Ec	dBm/3.84MHz	-60	-70
Cell (2,3) CPICH Ec	dBm/3.84MHz	-70	-60

Table 8.3.4.17 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution.

Note that Cell 2 and Cell 3 are combined DC HSDPA and MIMO Cells with Cell 2 configured as the primary carrier and Cell 3 configured as the secondary cell (definition according to TS 25.825 section 4.2.1).

The downlink transmission power is set according to values in column “T0” in table 8.3.4.19-2. The UE has user plane bearers and signalling bearers mapped on E-DCH/HS-DSCH in cell 1.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.19-2. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity" set to ‘1a’ in SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which adds a second radio link in cell 2, changes the E-DCH and HS-DSCH serving cell to cell 2 and includes Downlink Secondary Cell 3 parameters and MIMO configuration. When UE receive this message, the UE shall configure layer 1 to begin reception E-DCH transmission, HS-DSCH reception and MIMO reception using the new radio links on Anchor Carrier Cell 2 and Secondary Carrier Cell 3. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. SS checks that this RRC messages is received on Anchor Carrier Cell 2.

To check that the UE has performed serving cell change to DC HSDPA Cell, SS monitors for CQI reports on HS-DPCCH received from UE on Cell 2 and Cell 3.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.19-2.
3	→		MEASUREMENT REPORT	See specific message contents for this message (event ‘1a’ for cell 2).
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The RRC message instructs the UE to add dual HSDPA Cell 2 and 3 to the active set and perform a serving E-DCH and HS-DSCH Cell change to the DC-HSDPA. Valid MIMO parameters are specified.
5	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link for DC HSDPA cell and active HS-DSCH and MIMO reception from Cells 2 and 3.
6	SS			At the activation time DC-HSDPA and MIMO are configured, Cell 2 becomes the serving E-DCH /HS-DSCH Cell and Cell 3 the secondary cell.
7	SS			SS starts monitoring CQI reports on HS-DPCCH received from the UE on Primary Cell 2 and Secondary Cell 3. SS waits for 10 CQI reports.

Specific Message Content

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 2: Cell measured results for cells 1 and 2 may appear in any order.

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
MIMO Parameters		
- MIMO Operation	Start	
- CHOICE mode	FDD	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	

Radio link addition information			
- Primary CPICH Info			
- Primary scrambling code	Primary scrambling code of Cell 2		
- Downlink F-DPCH info for each RL			
- CHOICE mode	FDD		
- Primary CPICH usage for channel estimation	P-CPICH may be used.		
- F-DPCH frame offset	Calculated value from Cell synchronisation information		
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present		
- Secondary CPICH info	Not present		
- Secondary scrambling code	Not present1		
- Code number	F-DPCH code number as used in Cell1		
- TPC Combination Index	1		
- TFCI combining indicator	FALSE		
- E-HICH Information			
- Channelisation code	4		
- Signature sequence	1		
- CHOICE E-RGCH Information			
- E-RGCH Information			
- Signature Sequence	0		
- RG combination index	0		
Serving HS-DSCH cell information			
- Δ_{ACK}	Not Present		
- Δ_{NACK}	Not Present		
- HARQ_preamble_mode	0		
- Primary CPICH info			
- Primary Scrambling Code	Set to the primary scrambling code of cell 2		
- Downlink HS-PDSCH Information			
- HS-SCCH Info			
- CHOICE mode	FDD		
- DL Scrambling Code	Not present		
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH		
- HS-SCCH Channelisation Code	7		
- Measurement Feedback Info			
- CHOICE mode	FDD		
- Pohsdsch	6 dB		
- CQI Feedback cycle, k	4 ms		
- CQI repetition factor	1		
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)		
- CHOICE mode	FDD (no data)		
- Downlink 64QAM configured	Not Present		
- HS-DSCH TB size table	Octet Aligned		
- HARQ Info			
- Number of Processes	Reference to TS 34.108 clause 6.10.2.4.5 Parameter Set		
- CHOICE *Memory Partitioning*	Implicit		
- MAC-hs reset indicator	TRUE		
E-DCH reconfiguration information			
- E-DCH RL Info new serving cell			
- Primary CPICH info			
- Primary Scrambling Code	Set to the primary scrambling code of cell 2		
- E-AGCH Info			
- E-AGCH Channelisation Code	10		
- Serving Grant	Not Present		
- E-DPCCH/DPCCH power offset	Not Present		
- Reference E-TFCIs	2 E-TFCIs		
- Reference E-TFCI	11		
- Reference E-TFCI PO	4		
- Reference E-TFCI	83		
- Reference E-TFCI PO	16		
- Power Offset for Scheduling Info	Not Present		
- 3-Index-Step Threshold	Not Present		
- 2-Index-Step Threshold	Not Present		
- E-HICH Information			
- CHOICE mode	FDD		
- Channelisation Code	4		
- Signature Sequence	1		

- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
- E-DCH RL Info other cells	Not Present	
Downlink secondary cell info FDD		
- CHOICE Configuration info	New configuration	
- New HRNTI	'1010 1010 1010 1010'	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet aligned	
- Primary CPICH info		
- Primary scrambling code	Set to the primary scrambling code of cell 3	
- DL Scrambling Code	Not Present. Mandatory default implies same scrambling code as for the primary CPICH	
- HS-SCCH Channelisation Code Information	1 HS-SCCH code	
- HS-SCCH Channelisation Code	7	
- Measurement Power Offset	6 dB	
- UARFCN downlink (Nd)	Reference to clause 5.1 Test frequencies. Note that for the secondary cell the UARFCN is a positive offset of 25 from the UARFCN of the test frequency of the primary cell which equates to 5MHz channel spacing	
-Secondary cell MIMO parameters		
- CHOICE Configuration info	New configuration	
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	

8.3.4.19.5 Test requirements

At step 3 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 5 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure, the change of serving cell to combined DC HSDPA and MIMO.

At step 7 the UE shall on each stream on both Cell 2 and Cell 3 transmit CQI reports.

8.3.4.19a Void

8.3.4.19b Active set update: DB-DC-HSDPA and MIMO Activation by Serving Cell Change from non-DC-HSDPA capable cell to DB-DC-HSDPA capable cell

The scope and description of the present TC is the same as test case 8.3.4.19 with the following differences:

- Test case applicability limited to Rel-10 or later releases UE supporting dual band operation.
- Cells configuration: Cell 4 replaces Cell 3.
- Cell 2 and Cell 4 are configured on different bands.

8.3.4.20 Active set update in soft handover: Radio Link addition/removal on the secondary E-DCH active set

8.3.4.20.1 Definition and applicability

All UE categories which support Dual Cell HSUPA operation. UE supports F-DPCH or Enhanced F-DPCH. UE supports FDD E-DCH category 8 or 9.

8.3.4.20.2 Conformance requirement

The purpose of the active set update procedure is to update the active set of the connection between the UE and UTRAN. This procedure shall be used in CELL_DCH state. The UE should keep on using the old RLs while configuring the new RLs. Also the UE should keep the transmitter turned on during the procedure. This procedure is only used in FDD mode.

…

The procedure is initiated when UTRAN orders a UE in CELL_DCH state, to make the following modifications of the active set of the connection:

a) Radio link addition to the active set;

b) Radio link removal from the active set;

c) Combined radio link addition and removal on the active set;

d) Addition of a radio link to the E-DCH active set;

e) Removal of a radio link from the E-DCH active set.

f) Radio link addition to the secondary E-DCH active set;

g) Radio link removal from the secondary E-DCH active set;

h) Combined radio link addition and removal on the secondary E-DCH active set;

The procedure also allows the addition or removal of a radio link on the downlink frequencies associated with the secondary serving HS-DSCH cells. If the UE is not operating in Dual Cell E-DCH operation, radio links on the downlink frequencies associated with the secondary serving HS-DSCH cells are not part of the active set. Otherwise, radio links on the frequency associated with the first secondary serving HS-DSCH cell, are part of the secondary E-DCH active set.

Additionally, the procedure also allows the update of Target cell preconfiguration information for existing radio link(s).

In case a), c), f) and h), UTRAN should:

1> prepare new additional radio link(s) in the UTRAN prior to the command to the UE.

In case a), b), c), d) and e), UTRAN should:

1> send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC;

1> create active sets that contain at least one common radio link across a DPCH or F-DPCH frame boundary as the result of one or multiple (parallel) active set update procedures.

In case f), g) and h), UTRAN should:

1> send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC;

1> create secondary E-DCH active sets that contain at least one common radio link across a F-DPCH frame boundary as the result of one or multiple (parallel) active set update procedures.

UTRAN should include the following information:

1> IE "Radio Link Addition Information": Downlink DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add. This IE is needed in cases a) and c) listed above;

1> IEs "Downlink Secondary Cell Info FDD": Downlink optional parameters relevant to the reception of secondary serving HS-DSCH cells;

1> IE "Uplink Secondary Cell Info FDD": Uplink optional parameters relevant to transmission on secondary uplink frequency;

1> IE "Radio Link Removal Information": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove. This IE is needed in cases b) and c) listed above;

1> IE "Radio link addition information on secondary UL frequency": Downlink F-DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add on the secondary uplink frequency. This IE is needed in cases f) and h) listed above;

1> IE "Radio link removal information on secondary UL frequency": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove on the secondary uplink frequency. This IE is needed in cases g) and h) listed above;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH information" to indicate which radio link to add to the E-DCH active set. This IE is needed in case d) above, when the RL added to the E-DCH active set is already in the DCH active set;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH release indicator" to indicate which radio link to remove from the E-DCH active set. This IE is needed in case e) above, when the RL removed from the E-DCH active set remains in the DCH active set.

…

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information" which are not yet contained in the UEs active set;

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

1> perform the physical layer synchronisation procedure B as specified in [29] for the radio links which are not yet contained in the UEs active set;

1> if the IE "E-HICH information" is included:

2> store this E-HICH configuration for the concerning radio link.

1> if the IE "E-HICH information" is included:

2> store this E-RGCH configuration for the concerning radio link, if included.

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28;

1> stop and reset timer T324 if running;

1> stop monitoring target cell HS-SCCH;

1> if the IE "MAC-es/e reset indicator" is included in the IE "UL 16QAM configuration":

2> reset the MAC-es/e / MAC-is/i entity [15].

NOTE 1: If the IE "MAC-es/e reset indicator" is not included in the IE "UL 16QAM configuration" and 16QAM operations starts or stops, the UE behaviour is unspecified.

1> if the IE "UL 16QAM settings" is not included in the IE "16QAM configuration":

2> indicate to lower layers to stop any operation in 16QAM mode.

NOTE 2: If the IE "UL 16QAM configuration" is not included and 16QAM mode operation is currently ongoing, the UE behaviour is unspecified.

1> if the IEs "E-TFCI Boost Info" and/or "E-DPDCH power interpolation" are present, act on the received information elements;

1> if the IEs "E-DPCCH/DPCCH power offset" and/or "Reference E-TFCI PO" are included in the IE "E-DCH reconfiguration information same serving cell", act on the received information elements;

NOTE 3: If E-TFCI boost is signalled to the UE and a reference E-TFCI <= E-TFCI Boost is signalled to the UE with a Reference E-TFCI PO of value 30 or 31, the UE behaviour is unspecified.

1> if the radio link currently considered to be the serving HS-DSCH radio link is indicated in the IE "Radio Link Removal Information":

2> no longer consider any radio link as the serving HS-DSCH radio link;

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

1> for each radio link in the IE "Radio Link Addition Information":

2> take the actions related to TARGET_CELL_PRECONFIGURATION variable as described in subclause 8.5.52.

1> if the radio link in the IE "Radio Link Addition Information" is already contained in the UE active set and the IE "Radio Link Addition Information" attempts to reconfigure parameters other than "Target cell preconfiguration information" IE for the radio link:

2> the UE behaviour is unspecified.

NOTE 4: To configure or reconfigure the "Target cell preconfiguration information" IE for the radio link already contained in the UE active set, UTRAN should provide the same value of the mandatory IEs in the IE "Radio Link Addition Information" as the one previously configured. Otherwise the UE behaviour is unspecified.

1> if the table "Target cell preconfigurations" in the variable TARGET_CELL_PRECONFIGURATION included the RL indicated in IE "Radio Link Removal Information":

2> clear the entry from the variable TARGET_CELL_PRECONFIGURATION.

1> if the "E-DCH RL Info other cells" in the table "Target cell preconfiguration information" in the variable TARGET_CELL_PRECONFIGURATION included the RL indicated in the IE "Radio Link Removal Information":

2> clear all "E-DCH RL Info other cells" entries in the variable TARGET_CELL_PRECONFIGURATION for the removed RL(s).

1> if the radio link currently considered to be the serving E-DCH radio link is indicated in the IE "Radio Link Removal Information":

2> no longer consider any radio link as the serving E-DCH radio link.

1> if the IE "Uplink Secondary Cell Info FDD" is included; or

1> if the IE "E-DCH reconfiguration information on secondary uplink frequency" is included; or

1> if the IE "Radio link addition information on secondary UL frequency" is included; or

1> if the IE "Radio link removal information on secondary UL frequency" is included:

2> act as specified in 8.3.4.3a.

1> determine the value for the E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronisation B, as specified in [29];

1> the procedure ends on the UE side.

…

The UE shall:

1> if the IE "Uplink Secondary Cell Info FDD" is included:

2> act as specified in subclause 8.6.6.49.

2> determine the value for the SECONDARY_CELL_E_DCH_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.58.

1> if the IE "Radio link addition information on secondary UL frequency" or the IE "Radio link removal information on secondary UL frequency" is included:

2> first add the RLs indicated in the IE "Radio link addition information on secondary UL frequency";

2> remove the RLs indicated in the IE "Radio link removal information on secondary UL frequency". If the UE secondary E-DCH active set is full or becomes full, an RL, which is included in the IE "Radio link removal information on secondary UL frequency" for removal, shall be removed before adding RL, which is included in the IE "Radio link addition information on secondary UL frequency" for addition;

2> store this E-HICH configuration for the concerning radio link to be added, if included;

2> store this E-RGCH configuration for the concerning radio link to be added, if included;

2> if the secondary uplink frequency is an activated uplink frequency after the active set update procedure:

3> perform the physical layer synchronisation procedure B as specified in [29] for the concerning radio link to be added if included.

1> if the IE "E-DCH reconfiguration information on secondary UL frequency" is included:

2> if the IE "E-DCH RL Info for other cells" is present:

3> if the IE "E-HICH Information" is present:

4> store the E-HICH and E-RGCH information (if present), contained therein, for the indicated radio link.

3> if the IE "E-RGCH release indicator" is present:

4> delete the stored E-RGCH configuration for the indicated radio link.

2> if the IE "E-DCH RL Info for new secondary serving E-DCH cell" is present:

3> consider the radio link identified by the IE "Primary CPICH info" in the first IE "Downlink secondary cell info FDD" as the secondary serving E-DCH radio link, and no longer consider any other radio link as secondary serving E-DCH radio link.

3> store the E-HICH and E-RGCH information (if present), contained therein, for the new secondary serving E-DCH radio link;

3> if the IE "E-RGCH release indicator" is present:

4> delete the stored E-RGCH configuration for the new secondary serving E-DCH radio link.

3> store the newly received E-AGCH configuration for the new secondary serving E-DCH radio link;

3> if the old secondary serving E-DCH cell remains in the secondary E-DCH active set after the active set update, or if the new secondary serving E-DCH cell was already in the secondary E-DCH active set prior to the active set update:

4> keep the current activation status of the secondary uplink frequency and take the corresponding actions as described in subclause 8.5.58.

3> otherwise:

4> consider the secondary uplink frequency as not activated and take the corresponding actions as described in subclause 8.5.58.

Reference

3GPP TS 25.331 clause 8.3.4, 8.3.4.2, 8.3.4.3, 8.3.4.3a

8.3.4.20.3 Test purpose

1. To confirm that the UE adds radio link to the secondary E-DCH set after receiving ACTIVE SET UPDATE message, which includes IE "Radio link addition information on secondary UL frequency " and specifying the P-CPICH information of the cell to be added.

2. To confirm that the UE removes radio link from the secondary E-DCH set after receiving ACTIVE SET UPDATE message, which includes IE " Radio link removal information on secondary UL frequency" and specifying the P-CPICH information of the cell to be removed.

8.3.4.20.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1, Cell 2/3 DC HSUPA cell(s) with Cell 2 (Serving HS.DSCH cell/Primary uplink frequency) and Cell 3 (Secondary serving HS.DSCH cell /Secondary uplink frequency)

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A25c, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports DC HSUPA
- UE supports F-DPCH or Enhanced F-DPCH
- UE category supports FDD E-DCH category 8 or 9

Test Procedure

Table 8.3.4.20-1

Cell	UTRA RF Channel Number
Cell 1	Mid Range Test Frequency
Cell (2,3)	Mid Range Test Frequency(see Note1)
Note 1: DC HSUPA Cell test frequencies are specified in [9] cl. [FFS] for the operating band under test. The SFN and Tcell of the secondary cell are the same as the serving cell [29] cl. 7.1.	

Table 8.3.4.20-2

		Time			
Parameter	Unit	T0	T1	T2	T3
Cell 1 CPICH Ec	dBm/3.84MHz	-75	-60	OFF	-60
Cell (2,3) CPICH Ec	dBm/3.84MHz	-60	-60	-60	-60

Table 8.3.4.20-1 and Table 8.3.4.20-2 illustrate the downlink power to be applied for the 3 cells at various time instants of the test execution. Note that Cell 2 and Cell 3 are DC HSUPA Cells with Cell 2 configured as the primary uplink cell and Cell 3 configured as the secondary uplink cell.

The downlink transmission power is set according to values in column "T0" in table 8.3.4.20-2. The UE has user plane bearers and signalling bearers mapped to the E-DCH/HS-DSCH of the DC HSUPA Cell configuration according to Radio Bearer Setup condition [FFS]. The SS transmits to the UE an MEASUREMENT CONTROL message in cell 2 on DCCH using AM RLC, which configures event '1a' and event '1b' for the secondary frequency measurement.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.20-2. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for Cell 1 according to IE "Intra-frequency event identity", which is set to 1a in IE "Intra-frequency measurement reporting criteria on secondary UL frequency" in MEASUREMENT CONTROL message.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 2 on DCCH using AM RLC, which includes IE "Radio link addition information on secondary UL frequency " and specifying the P-CPICH information of the cell to be added. When the UE receives this message, at the activation time, the UE shall configure layer 1 to begin E-DCH transmission using the new radio link on cell 1. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

The SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.20-2. The UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE "Intra-frequency event identity", which is set to 1b in IE "Intra-frequency measurement reporting criteria on secondary UL frequency" in MEASUREMENT CONTROL message. The SS receives this message to confirm that the UE has added the radio link on cell 1 to the secondary E-DCH set.

After the MEASUREMENT REPORT message is received, the SS removes the radio link on cell 1 from the secondary E-DCH active set and then SS transmits an ACTIVE SET UPDATE message, which includes IE " Radio link removal information on secondary UL frequency" and specifying the P-CPICH information of the cell to be removed.

When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link on cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

The SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.20-2. The UE shall transmit a MEASUREMENT REPORT message, which includes the primary scrambling code for Cell 1 according to IE "Intra-frequency event identity", which is set to 1a in IE "Intra-frequency measurement reporting criteria on secondary UL frequency" in MEASUREMENT CONTROL message. The SS receives this message to confirm that the UE has deleted the radio link on cell 1 from the secondary E-DCH set.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2	←		MEASUREMENT CONTROL	See specific message contents for this message (event '1a' and event '1b' configured).
3				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.20-2.
4	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 1).
5	←		ACTIVE SET UPDATE	SS transmits this message in primary carrier Cell 2 on downlink DCCH using AM RLC. The RRC message instructs the UE to add Cell 1 to the secondary E-DCH active set.
6	SS			At the activation time, Cell 1is in the secondary E-DCH active set.
7	→		ACTIVE SET UPDATE COMPLETE	
8				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.20-2.
9	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 1). The SS receives this message to confirm that the UE has added the radio link on cell 1 to the secondary E-DCH set.
10	←		ACTIVE SET UPDATE	SS transmits this message in primary carrier Cell 2 on downlink DCCH using AM RLC. The RRC message instructs the UE to delete Cell 1 from the secondary E-DCH active set.
11	SS			At the activation time, Cell 1 is not in the secondary E-DCH active set.
12	→		ACTIVE SET UPDATE COMPLETE	
13				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.20-2.
14	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 1). The SS receives this message to confirm that the UE has deleted the radio link on cell 1 from the secondary E-DCH set.

MEASUREMENT CONTROL (Step 2)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects an unused integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string

Information Element	Value/remark
	contains the most significant bit of the MAC-I.
- RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting/Event Trigger Reporting Mode	Event Trigger Reporting
Additional measurement list	Not Present
CHOICE Measurement type	Intra-frequency measurement
- Intra-frequency measurement	
- Intra-frequency cell info list	Not present
- Intra-frequency cell info list on secondary UL frequency	
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not present Absence of this IE is equivalent to apply the default duplex distance defined for the operating frequency according to 3GPP TS 25.101 [11]
- UARFCN downlink(Nd)	Reference to table 6.1.2 for Cell 3
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not Present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	Not present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present
- Cells for measurement	Not Present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	Not present
- Intra-frequency measurement reporting criteria on secondary UL frequency	
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not present Absence of this IE is equivalent to apply the default duplex distance defined for the operating frequency according to 3GPP TS 25.101 [11]
- UARFCN downlink(Nd)	Reference to table 6.1.2 for Cell 3
- Parameters required for each event	
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	10 (5dB)

Information Element	Value/remark
- Cells forbidden to affect Reporting range on secondary UL frequency	Not Present
- W	10(1.0): 34.121 test cases
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	2
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4 000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on secondary UL frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1b
- Triggering condition 1	Active set cells
- Triggering condition 2	Not Present
- Reporting Range Constant	10 (5dB)
- Cells forbidden to affect Reporting range on secondary UL frequency	Not Present
- W	10(1.0): 34.121 test cases
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on secondary UL frequency
- Maximum number of reported cells	3

MEASUREMENT REPORT (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	Checked that this IE is absent
Measured Results on secondary UL frequency	
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
Note 1: Cell measured results for cells 1 and 3 may appear in any order.	

ACTIVE SET UPDATE (Step 5)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256
Radio link addition information on secondary UL frequency	
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- Downlink F-DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- F-DPCH frame offset	Calculated value from Cell synchronisation information
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present
- Secondary CPICH info	Not Present
- Secondary scrambling code	Not Present
- Code number	12
- TPC Combination Index	1
- E-HICH Information	
- Channelisation code	4
- Signature sequence	1
- CHOICE E-RGCH Information	
- E-RGCH Information	
- Signature Sequence	0
- STTD indication	FALSE

MEASUREMENT REPORT (Step 9)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	Checked that this IE is absent
Measured Results on secondary UL frequency	
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 10)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Radio link removal information on secondary UL frequency	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to the same P-CPICH scrambling code assigned for cell 1.

MEASUREMENT REPORT (Step 14)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	Checked that this IE is absent
Measured Results on secondary UL frequency	
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 3. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
Note 1: Cell measured results for cells 1 and 3 may appear in any order.	

8.3.4.20.5 Test requirements

At step 4, 9, 14 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC to request adding/deleting radio link on the secondary E-DCH set.

At step 7, 12 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition/deletion procedure.

8.3.4.21 Active Set Update: MIMO Activation by serving cell changes with and without PCI Restrictions and S-CPICH Power Offsets (16QAM + MIMO)

8.3.4.21.1 Definition and applicability

All UE categories which support MIMO and F-DPCH or Enhanced F-DPCH.

8.3.4.21.2 Conformance requirement

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> if the IE "MIMO parameters" is not included:

2> clear the MIMO_PARAMS variable;

2> trigger lower layers to stop operation in MIMO mode.

1> otherwise:

2> for FDD, if the IE "MIMO N_cqi_typeA/M_cqi ratio" is included:

3> store the value of the IE "MIMO N_cqi_typeA/M_cqi ratio" in the MIMO_PARAMS variable.

2> for FDD, if the IE "MIMO pilot configuration" is included:

4> store the value of the IE "MIMO pilot configuration" in the MIMO_PARAMS variable.

[…]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the UE shall:

1> take actions related to the MIMO_PARAMS variable as specified in subclause 8.5.32;

1> determine the value of the MIMO_STATUS variable.

The MIMO_STATUS variable shall be set to TRUE only when all the following conditions are met:

1> The UE is in CELL_DCH state;

1> the variable HS_DSCH_RECEPTION is set to TRUE;

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO N_cqi_typeA/M_cqi ratio"; and

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO pilot configuration".

1> for 1.28 Mcps TDD, the variable MIMO_PARAMS contains a value for the IE "MIMO SF Mode for HS-PDSCH dual stream".

If any of the above conditions is not met and the MIMO_STATUS variable is set to TRUE, the UE shall:

1> set the MIMO_STATUS variable to FALSE;

1> clear the MIMO_PARAMS variable;

2> trigger lower layers to stop operation in MIMO mode.

[…]

With the exception of the provisions of subclause 6A.3, the following shall apply when the UE is configured in MIMO mode:

1) The UE derives the PCI value as defined in subclause 6A.4 and either a type A or a type B CQI value as defined in subclause 6A.2.2 depending on which type of CQI shall be reported as defined below.

[…]

If the UE is not configured with precoding weight set restriction by the higher layers, the optimum precoding weight w_2^{pref} for antenna 2 is taken from the set:

$$w_2^{\text{pref}} \in \left\{ \frac{1+j}{2} \quad \frac{1-j}{2} \quad \frac{-1+j}{2} \quad \frac{-1-j}{2} \right\}$$

If the UE is configured with precoding weight set restriction by the higher layers, the optimum precoding vector weight w_2^{pref} for antenna 2 is taken from the set as defined in table 7J0.

Table 7J0: Selection of the precoding weight set when the precoding weight set restriction is configured by higher layers

Number of Transport Blocks preferred in the composite PCI/CQI report	Precoding weight set from which the optimum precoding weight w_2^{pref} for antenna 2 is taken.
1 (always the case when single-stream restriction is configured to the UE)	$w_2^{pref} \in \left\{ \frac{1+j}{2} \quad \frac{-1-j}{2} \right\}$
2	$w_2^{pref} \in \left\{ \frac{1+j}{2} \quad \frac{1-j}{2} \quad \frac{-1+j}{2} \quad \frac{-1-j}{2} \right\}$

The precoding weight w_2^{pref} is mapped to PCI values as defined in table 7J.

Table 7J: Mapping of preferred precoding weight w_2^{pref} to PCI values

w_2^{pref}	PCI value
$\frac{1+j}{2}$	0
$\frac{1-j}{2}$	1
$\frac{-1+j}{2}$	2
$\frac{-1-j}{2}$	3

Reference

3GPP TS 25.331 clause 8.5.32, 8.5.33

3GPP TS 25.214 clause 6A.1.2.2, 6A.4

8.3.4.21.3 Test purpose

To confirm that the UE performs serving cell change and start MIMO reception from non MIMO capable cell to MIMO capable cell with and without PCI restriction and S-CPICH power offset.

8.3.4.21.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 non MIMO cell, Cell 2 MIMO configured

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-17) under condition A17b, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports MIMO
- UE fully supports F-DPCH or Enhanced F-DPCH

Test Procedure

Table 8.3.4.21-1

Cell	UTRA RF Channel Number
Cell 1	Mid Range Test Frequency
Cell 2	Mid Range Test Frequency

Table 8.3.4.21-2

Parameter	Unit	T0	T1
Cell 1 CPICH Ec	dBm/3.84MHz	-60	-60
Cell 2 CPICH Ec	dBm/3.84MHz	-75	-60

Table 8.3.4.21-2 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.X-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" and MIMO configuration. When the UE receives this message, the UE shall activate MIMO reception and configure SRB and user plane bearers for HS-DSCH reception (L1 configured for MIMO on separate antennae with PCI restriction and S-CPICH Power Offset) using the new radio link with cell 2 as the serving cell. The UE shall respond with ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. UE sends combined CQI/PCI reports of type A/B continuously every 2 ms. The PCI values reported shall be restricted to 0 or 3 for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, restriction shall not apply.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, using MIMO configuration, to the UE to reconfigure MIMO parameters (without PCI restriction and S-CPICH offset). When the UE receives this message, the UE shall reconfigure L1 (without PCI restriction and S-CPICH offset) and respond with PHYSICAL CHANNEL RECONFIGURATION COMPLETE.UE sends combined CQI/PCI reports of type A/B continuously every 2 ms.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		

1	←		UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.x-2.
3	→	MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2).
4	←	ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information" for cell 2. Valid MIMO parameters (with PCI restriction and S-CPICH Power Offset) are specified and Cell 2 becomes the serving Cell.
5	→	ACTIVE SET UPDATE COMPLETE	
6			At the activation time the SS changes the serving E-DCH and HS-DSCH link to Cell 2 and applies the new configuration.
7			UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B. PCI values of 0 or 3 shall be used by the UE for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, the restriction does not apply. The UE shall configure the lower layers with signalled S-CPICH Power offset.
8	←	PHYSICAL CHANNEL RECONFIGURATION	SS transmits this message in cell 2 on downlink DCCH using AM RLC. MIMO parameter reconfigured.
9	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall reconfigure L1 without PCI restriction and S-CPICH offset
10			UE sends combined CQI/PCI reports of type A/B continuously every 2 ms.

Specific Message Contents

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	2 kinds
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	2
- Intra-frequency event identity	1b
- Triggering condition 1	Active set cells
- Triggering condition 2	Not Present
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	0 (0.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	2

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2 shall be in accordance with the default SIBs as specified in TS 34.108.

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1 and 2 may appear in any order.

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
MIMO Parameters		
- MIMO Operation	Start	
-		
- MIMO N_cqi_typeA/M_cqi ratio	1/1	
- MIMO pilot configuration		
- CHOICE Second CPICH pattern	Antenna1 S-CPICH	
- Channelisation code	13	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink F-DPCH info for each RL		
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- F-DPCH frame offset	Calculated value from Cell synchronisation information	
- F-DPCH slot format	3 if UE supports enhanced F-DPCH, otherwise Not Present	
- Secondary CPICH info	Not present	
- Secondary scrambling code	Not present	
- Code number	F-DPCH code number as used in Cell1	
- TPC Combination Index	1	
- TFCI combining indicator	FALSE	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	
- Measurement Power Offset	12 (6 dB)	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	12	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
MIMO-PilotConfiguration-v7f0ext		
- s-cpich-PowerOffset-Mimo	-3	
MIMO-Parameters-v7g0ext		
-precodingWeightSetRestriction	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	

- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	Not Present	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information	Not Present	
- CHOICE E-RGCH Information		
- E-DCH RL Info other cells	Not Present	

PHYSICAL CHANNEL RECONFIGURATION (Step 8)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108 except for the following:

Information Element	Value/remark
HARQ Info	
- Number of processes	6
- CHOICE *Memory Partitioning*	
- Implicit	
Frequency info	Not present
MIMO Parameters	
- MIMO Operation	Start
-	
- MIMO N_cqi_typeA/M_cqi ratio	1/1
- MIMO pilot configuration	
- CHOICE Second CPICH pattern	Antenna1 S-CPICH
- Channelisation code	13
Maximum allowed UL TX power	Not present
Uplink DPCH info	Not present
Downlink HS-PDSCH Information	
- HS-SCCH Info	
- CHOICE mode	FDD
- DL Scrambling Code	Not present
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	7
- Measurement Feedback Info	
- CHOICE mode	FDD
- Measurement Power Offset	12 (6 dB)
- CQI Feedback cycle, k	8 ms
- CQI repetition factor	1
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)
- CHOICE mode	FDD (no data)
- Downlink 64QAM configured	Not Present
- HS-DSCH TB size table	Octet Aligned
MIMO-PilotConfiguration-v7f0ext	
- s-cpich-PowerOffset-Mimo	0
MIMO-Parameters-v7g0ext	
-precodingWeightSetRestriction	FALSE
Downlink information common for all radio links	Not Present
Downlink information for each radio link list	Not Present
- Primary CPICH info	
- Primary scrambling code	150

8.3.4.21.5 Test requirements

At steps 3, UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At steps 5 UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the previous ACTIVE SET UPDATE and indicate readiness to accept the new configuration at activation time.

At step 7, UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B. PCI values of 0 or 3 shall be used by the UE for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, the restriction does not apply.

At step 9, UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC to acknowledge the previous PHYSICAL CHANNEL RECONFIGURATION and indicate readiness to accept the new configuration.

At step 10, UE shall transmit combined CQI/PCI reports of type A/B continuously every 2 ms.

8.3.4.22 Active set update: Dual Cell (DC) Activation by Serving Cell Change from non DC-HSDPA capable cell to DC-HSDPA capable cell with discontinuous uplink transmission and downlink reception

8.3.4.22.1 Definition and applicability

All UEs which support FDD, UL DTX, DL DRX and Dual Cell HSDPA.

8.3.4.22.2 Conformance requirement

The purpose of the active set update procedure is to update the active set of the connection between the UE and UTRAN. This procedure shall be used in CELL_DCH state. The UE should keep on using the old RLs while configuring the new RLs. Also the UE should keep the transmitter turned on during the procedure. This procedure is only used in FDD mode.

…

The procedure is initiated when UTRAN orders a UE in CELL_DCH state, to make the following modifications of the active set of the connection:

a) Radio link addition;

b) Radio link removal;

c) Combined radio link addition and removal;

d) Addition of a radio link to the E-DCH active set;

e) Removal of a radio link from the E-DCH active set.

The procedure also allows the addition or removal of a radio link on a secondary serving HS-DSCH cell. Radio links on the secondary serving HS-DSCH cell are not part of the active set.

In case a) and c), UTRAN should:

1> prepare new additional radio link(s) in the UTRAN prior to the command to the UE.

In all cases, UTRAN should:

1> send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC;

1> create active sets that contain at least one common radio link across a DPCH or F-DPCH frame boundary as the result of one or multiple (parallel) active set update procedures.

UTRAN should include the following information:

1> IE "Radio Link Addition Information": Downlink DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add. This IE is needed in cases a) and c) listed above;

1> IE "Downlink Secondary Cell Info FDD": Downlink optional parameters relevant to reception of secondary serving HS-DSCH cell;

1> IE "Radio Link Removal Information": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove. This IE is needed in cases b) and c) listed above;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH information" to indicate which radio link to add to the E-DCH active set. This IE is needed in case d) above, when the RL added to the E-DCH active set is already in the DCH active set;

1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH release indicator" to indicate which radio link to remove from the E-DCH active set. This IE is needed in case e) above, when the RL removed from the E-DCH active set remains in the DCH active set.

…

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

…

1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6:

2> if the IEs "Δ_{ACK}", "Δ_{NACK}", and "HARQ_preamble_mode" are present, act on the received information elements;

2> if the new H-RNTI and "Primary CPICH info" are included:

3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell. If the IE "Downlink Secondary Cell Info FDD" is included for a cell associated with the serving HS-DSCH cell, consider that cell a secondary serving HS-DSCH cell.

2> if the IE "MAC-hs reset indicator" is included:

3> reset the MAC-hs/ehs entity [15].

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

…..

If the IE "RB mapping info" is included, the UE shall:

...

For FDD the list of multiplexing options configured in the UE for each RB and SRB should comply with the following rules otherwise the UE behaviour is not specified:

- ...
- at most one multiplexing option can contain the combination "DCH" or "DCH + HS-DSCH" for the DL together with "DCH" for the UL;
- at most one multiplexing option can contain the combination "HS-DSCH" or "DCH + HS-DSCH" for the DL together with "DCH" for the UL;
- ...

…

1> if any of the IEs "DTX-DRX timing information" or "DTX-DRX information" are stored in the UE:

2> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

…

If the UE receives RRC CONNECTION SETUP, ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> the UE shall determine the value for the DTX_DRX_STATUS variable.

The variable DTX_DRX_STATUS shall be set to TRUE only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> both variables HS_DSCH RECEPTION and E_DCH_TRANSMISSION are set to TRUE;

1> no DCH transport channel is configured;

1> the variable DTX_DRX_PARAMS is set;

1> the UE has received the IE "DTX-DRX timing information".

If any of the above conditions is not met and the variable DTX_DRX_STATUS is set to TRUE, the UE shall:

1> set the variable DTX_DRX_STATUS to FALSE;

1> clear the variable DTX_DRX_PARAMS;

1> stop DTX-DRX mode related activities.

If variable DTX_DRX_STATUS is set to true and the serving HS-DSCH cell was changed as a result of the received message the UE shall instruct the physical layer to consider HS-SCCH orders were never received.

Whenever the variable DTX_DRX_STATUS is set to TRUE after receiving this message and the value of IE "DTX-DRX timing information" included in this message is not "Continue", the UE shall:

1> if the variable DTX_DRX_STATUS was set to TRUE before receiving this message:

2> re-configure the physical layer to perform discontinuous uplink DPCCH transmission and enable discontinuous downlink reception operations according to the variable DTX_DRX_PARAMS at the CFN corresponding to the frame boundary that is offset by the value of the IE "Enabling Delay" from the frame boundary where uplink transmission starts with new configuration;

2> let the MAC layer continue with the current restriction on E-DCH transmission and monitoring of absolute and relative grant channels from the frame boundary where the uplink transmission starts with the new configuration and for the duration of the IE "Enabling Delay".

1> else:

2> perform discontinuous uplink DPCCH transmission and enable discontinuous downlink reception operations by configuring the physical layer according to the variable DTX_DRX_PARAMS at the CFN corresponding to the frame boundary that is offset by the value of the IE "Enabling Delay" from the frame boundary where uplink transmission starts with new configuration.

1> configure the MAC layer to start restricting E-DCH transmissions and monitor absolute and relative grant channels at the CFN corresponding to the frame boundary that is offset by the value of IE "Enabling Delay" from the frame boundary where uplink transmission starts with new configuration taking into account the IEs "UE DTX DRX Offset", "MAC DTX Cycle", "MAC Inactivity Threshold" and "Inactivity Threshold for UE Grant Monitoring".

…

If the IE "DTX-DRX timing information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> if the CHOICE "timing" is set to "New timing":

2> use the newly received DTX-DRX timing configuration.

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

…

If the IE "DTX–DRX information" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the contents of the IE in the variable DTX_DRX_PARAMS;

1> determine the value for the DTX_DRX_STATUS variable and take the corresponding actions as described in subclause 8.5.34;

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple of the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DTX cycle 2" is not an integer multiple or a divisor of the value of the IE "CQI Feedback cycle, k"; or

1> if the value of the IE "UE DPCCH burst 1" is greater than the value of the IE "UE DTX cycle 1"; or

1> if the value of the IE "UE DPCCH burst 2" is greater than the value of the IE "UE DTX cycle 2"; or

1> if the IE "UE DTX long preamble length" is set to 4 or 15 slots and the value of the IE "Inactivity Threshold for UE DTX cycle 2" is less than 4 TTIs (for 10ms E-DCH TTI) or 8 TTIs (for 2ms E-DCH TTI); or

1> if the IE "UE DRX cycle" is not an integer multiple or a divisor of the value of the IE "UE DTX cycle 1"; or

1> if the IE "DRX Information" is included in this message while the IE "DTX information" is not included in this message; or

1> if the value of the IE "UE DTX cycle 1" is not an integer multiple or a divisor of the value of the IE "MAC DTX cycle":

2> the UE behaviour is unspecified.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.3.4, 8.3.4.2, 8.3.4.3, 8.5.34, 8.6.4.8, 8.6.6.38, 8.6.6.39

8.3.4.22.3 Test purpose

To confirm that the UE performs HS-DSCH serving cell change from non DC-HSDPA capable cell to DC–HSDPA capable cell with discontinuous downlink reception and uplink transmission.

8.3.4.22.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 non DC-HSDPA cell, Cell 2/3 DC HSDPA cell(s) with cell 2 (Anchor Carrier) and cell 3 (Secondary Carrier)

UE: PS_DCCH+DTCH E-DCH/HS_DSCH (state 6-18) under the condition A25 as specified in clause 7.4 of TS 34.108. See specific message contents for Radio Bearer Setup message.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports DC HSDPA
- UE supports DPCCH Discontinuous Transmission
- UE supports HS-DSCH DRX operation

Test Procedure

Table 8.3.4.22

Parameter	Unit	Cell 1		Dual Cell (2 and 3)	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency (see Note 1)	
CPICH Ec	dBm/3.84MHz	-60	-70	-70	-60
Note 1: For Secondary Carrier Cell 3 the UARFCN is a positive offset of 25 from the UARFCN of the test frequency of the Anchor Carrier Cell 2 which translates to 5MHz channel frequency spacing					

Table 8.3.4.22 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Note that cell 2 and cell 3 are configured as DC HSDPA Cells with cell 2 as the Anchor Carrier and cell 3 as the Secondary Carrier cell.

The downlink transmission power is set according to values in column “T0” in table 8.3.4.22. The UE has user plane mapped on E-DCH/HS-DSCH and signalling radio bearers mapped on E-DCH/HS-DSCH in cell 1.

The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.22. The UE transmits a MEASUREMENT REPORT message, which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity" set to 1a.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which adds a second radio link in cell 2, changes the E-DCH and HS-DSCH serving cell to cell 2, and includes Downlink Secondary Cell 3 parameters, discontinuous E-DCH transmission and discontinuous HS-DSCH reception parameters. When the UE receives this message, the UE shall configure layer 1 to begin E-DCH transmission, discontinuous HS-DSCH reception, with UL DPCCH discontinuous transmission, using the new radio link on Anchor Carrier Cell 2 and Secondary Carrier Cell 3. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. SS checks that this RRC message is received on Anchor Carrier cell 2.

The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications (received from the UE on cell 2 and cell 3) is 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←			UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) according to clause 7.4.
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.22.
3	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2).
4	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The RRC message instructs the UE to add primary HSDPA Cell 2 to the active set and HSDPA cell 3 as the secondary cell And also perform a serving E-DCH and HS-DSCH Cell change to the DC-HSDPA and start discontinuous EDCH transmission and discontinuous HSDSCH reception.
5	SS			At the activation time DC-HSDPA is configured, Cell 2 becomes the serving E-DCH /HS-DSCH Cell and Cell 3 the secondary cell.
6	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link for DC HSDPA cell and active HS-DSCH reception from Cells 2 and 3.
7				The SS waits to allow sufficient time for DTX cycle 2 to be active, and CQI DTX Timer to expire, and then verifies that the time between 11 consecutive CQI indications is 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used (i.e. duration of 10 consecutive DTX cycle 2).

Specific Message Contents

RADIO BEARER SETUP (Initial Condition)

The message to be used in this test is same as condition A25, as specified in clause 7.4 of TS 34.108 except the following:

Information Element	Value/remark
Downlink secondary cell info FDD	NOT PRESENT

MEASUREMENT REPORT (Step 3)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	Cell 1. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	Cell 2. See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1and 2 may appear in any order.

ACTIVE SET UPDATE (Step 4)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark	Version
Activation time	(256+CFN-(CFN MOD 8 + 8)) MOD 256	
New H-RNTI	'0101 0101 0101 0101'	
New Primary E-RNTI	'0101 0101 0101 0101'	
CN information elements		
-CN Information info	Not Present	
Phy CH information elements		
-DTX-DRX timing information		
-CHOICE *timing*		
- New timing		
- Enabling Delay	0 if 2ms TTI selected, otherwise 16	
- UE DTX DRX Offset	1 if 2ms TTI selected, otherwise 0	
-DTX-DRX Information		
-DTX information		
- CHOICE *E-DCH TTI length*	Unless stated otherwise, this should be set to 2ms if the UE supports 2ms TTI, or 10ms if the UE does not support 2ms TTI.	
- UE DTX cycle 1	8 if 2ms TTI selected, otherwise 10	
- UE DTX cycle 2	16 if 2ms TTI selected, otherwise 20	
- MAC DTX cycle	8 if 2ms TTI selected, otherwise 10	
- Inactivity Threshold for UE DTX cycle 2	32 if 2ms TTI selected, otherwise 8	
- UE DTX long preamble length	4	
- MAC Inactivity Threshold	1 if 2ms TTI selected, otherwise 8	
- CQI DTX Timer	32	
- UE DPCCH burst_1	1	
- UE DPCCH burst_2	1	
-DRX Information		
- UE DRX cycle	8 if 2ms TTI selected, otherwise 10	
- Inactivity Threshold for UE DRX cycle	32	
- Inactivity Threshold for UE Grant Monitoring	32 if 2ms TTI selected, otherwise 8	
Radio link addition information		
- Primary CPICH Info		
- Primary scrambling code	Primary scrambling code of Cell 2	
- Downlink DPCH info for each RL		
- Primary CPICH usage for channel estimation	P-CPICH may be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not present	
-DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	Not present	
-Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
-Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	1	
- E-HICH Information		
- Channelisation code	4	
- Signature sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	1	
Serving HS-DSCH cell information		
- Δ_{ACK}	Not Present	
- Δ_{NACK}	Not Present	
- HARQ_preamble_mode	0	
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- Downlink HS-PDSCH Information		
- HS-SCCH Info		
- CHOICE mode	FDD	
- DL Scrambling Code	Not present	
- HS-SCCH Channelisation Code Information	Use 1 HS-SCCH	
- HS-SCCH Channelisation Code	7	
- Measurement Feedback Info		
- CHOICE mode	FDD	

- Pohsdsch	6 dB	
- CQI Feedback cycle, k	4 ms	
- CQI repetition factor	1	
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)	
- CHOICE mode	FDD (no data)	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet Aligned	
- HARQ Info		
- Number of Processes	Reference to TS 34.108 clause 6.10.2.4.5 Parameter Set	
- CHOICE *Memory Partitioning*	Implicit	
- MAC-hs reset indicator	TRUE	
E-DCH reconfiguration information		
- E-DCH RL Info new serving cell		
- Primary CPICH info		
- Primary Scrambling Code	Set to the primary scrambling code of cell 2	
- E-AGCH Info		
- E-AGCH Channelisation Code	10	
- Serving Grant	Not Present	
- E-DPCCH/DPCCH power offset	Not Present	
- Reference E-TFCIs	2 E-TFCIs	
- Reference E-TFCI	11	
- Reference E-TFCI PO	4	
- Reference E-TFCI	83	
- Reference E-TFCI PO	16	
- Power Offset for Scheduling Info	Not Present	
- 3-Index-Step Threshold	Not Present	
- 2-Index-Step Threshold	Not Present	
- E-HICH Information		
- Channelisation Code	4	
- Signature Sequence	1	
- CHOICE E-RGCH Information		
- E-RGCH Information		
- Signature Sequence	0	
- RG combination index	0	
- E-DCH RL Info other cells	Not Present	
Downlink secondary cell info FDD		
- CHOICE Configuration info	New configuration	
- New HRNTI	'1010 1010 1010 1010'	
- Downlink 64QAM configured	Not Present	
- HS-DSCH TB size table	Octet aligned	
- Primary CPICH info		
- Primary scrambling code	Set to the primary scrambling code of cell 3	
- DL Scrambling Code	Not Present. Mandatory default implies same scrambling code as for the primary CPICH	
- HS-SCCH Channelisation Code Information	1 HS-SCCH code	
- HS-SCCH Channelisation Code	7	
- Measurement Power Offset	6 dB	
- UARFCN downlink (Nd)	Reference to clause 5.1 Test frequencies. Note that for the secondary cell the UARFCN is a positive offset of 25 from the UARFCN of the test frequency of the primary cell which equates to 5MHz channel spacing	

8.3.4.22.5 Test requirements

At step 3 SS shall receive a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 6 SS shall receive an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set addition procedure, the change of serving cell to DC HSDPA.

At step 7 SS should start receiving CQI report for Cell 2 and Cell 3 on HS-DPCCH from the UE and the time between 11 consecutive CQI indications (received from the UE on Cell 2 and Cell3) is 320ms if 2ms TTI is used, or 400ms if 10ms TTI is used.

8.3.4.23 Active set update in soft handover: Radio Link addition/deletion in multiple radio link environment with 3C-HSDPA or 4C-HSDPA remaining active

NOTE: The active set update soft handover test cases for 4C-HSDPA have been split in to Single band/nonMIMO, Single band/MIMO, Dual band/non-MIMO and Dual band/MIMO test cases. As soft handover for 4C-HSDPA is limited to adding and deleting radio links to the serving HS-DSCH cell then it has been not considered necessary to test the soft handover scenario for all of the supported 4C-HSDPA carrier combinations. Instead the test cases have been designed to cover 4C-HSDPA carrier combinations that will enable testing of all UEs supporting FDD HS-DSCH physical layer categories 29, 30, 31 or 32.

8.3.4.23.1 Active set update in soft handover: Radio Link addition/deletion in multiple radio link environment with 3C-HSDPA remaining active / Single band

8.3.4.23.1.1 Definition and applicability

All UEs which support FDD, 4C-HSDPA Single band operation with 3 carriers.

8.3.4.23.1.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

….

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information" which are not yet contained in the UEs active set;

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

1> perform the physical layer synchronisation procedure B as specified in [29] for the radio links which are not yet contained in the UEs active set;

….

1> if the radio link currently considered to be the serving HS-DSCH radio link is indicated in the IE "Radio Link Removal Information":

2> no longer consider any radio link as the serving HS-DSCH radio link;

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

1> for each radio link in the IE "Radio Link Addition Information":

2> take the actions related to TARGET_CELL_PRECONFIGURATION variable as described in subclause 8.5.52.

….

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronisation B, as specified in TS 25.211;

1> the procedure ends on the UE side.

Reference

3GPP TS 25.331 subclause 8.3.4.3

8.3.4.23.1.3 Test purpose

To confirm that the UE operation remains intact when Single band 3C HSDPA is configured and UE performs a radio link addition/removal according to the received ACTIVE SET UPDATE message.

8.3.4.23.1.4 Method of test

Initial Condition

System Simulator: 4 cells Cell 1 (f1), Cell 2 (f1), Cell 4 (f2) and Cell 7 (f3) where f1, f2, and f3 are adjacent frequencies.

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A36, as specified in clause 7.4 of TS 34.108 using Single band carrier combination with 3 carriers.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports Multi-Cell (UE HS-DSCH categories 29, 30, 31 or 32) and Single band carrier combination with 3 carriers

Test Procedure

Table 8.3.4.23.1.4-1

Parameter	Unit	Cell 1,4,7			Cell 2		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			Mid Range Test Frequency		
CPICH Ec	dBm/3.84MHz	-60	-60	-60	-70	-60	-70

Table 8.3.4.23.1.4-1 illustrates the downlink power to be applied for the 4 cells at various time instants of the test execution.

At the start of the test, the UE is in CELL_DCH state and has a radio bearer mapped on serving HS-DSCH on Cell 1 and secondary HS-DSCH on Cell 4 and Cell 7.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.23.1.4-1. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS checks that UE transmits CQI reports on HS-DPCCH on Cell 1, Cell 4 and Cell 7 to verify that the uplink and downlink activities of existing radio links are intact,

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.23.1.4-1. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2. After the MEASUREMENT REPORT message is received, the SS remove the radio link from cell 2 and then SS transmits an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed.

When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 2. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS checks that UE transmits CQI reports on HS-DPCCH on Cell 1, Cell 4 and Cell 7 to verify that the uplink and downlink activities of existing radio links are intact,

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.23.1.4-1
2	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2).
3	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The RRC message instructs the UE to add Cell 2 to the active set.
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, without interfering with existing connections on the radio link in Cell 1, Cell 4 and Cell 7.
5				SS checks that UE transmits CQI reports on HS-DPCCH on Cell 1, Cell 4 and Cell 7. SS waits for 10 CQI reports from the Anchor Cell 1.
6				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.23.1.4-1
7	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 1)
8	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information". Cell 2 will be removed from the Active Set.
9	→		ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 2.
10				SS checks that UE transmits CQI reports on HS-DPCCH on Cell 1, Cell 4 and Cell 7. SS waits for 10 CQI reports from the Anchor Cell 1.

Specific Message Content

MEASUREMENT REPORT (Step 2)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108	
- Cell ID	Not present	Rel-4
- CHOICE *DPCH info*	Downlink DPCH info for each RL	
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	
- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	0	
- Power offset $P_{TPC-DPDCH}$	Not present	Rel-5
- Close loop timing adjustment mode	Not Present	
- E-HICH Information	Not present	Rel-6
- E-RGCH Information	Not present	Rel-6
- Target cell preconfiguration information	Not present	Rel-8

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 8)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to the same P-CPICH scrambling code assigned for cell 2

8.3.4.23.1.5 Test requirement

At step 2 SS shall receive a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 4 SS shall receive an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set update procedure adding Cell 2 to the active set.

At step 5 SS shall receive CQI report for Cell 1, Cell 4 and Cell 7 on HS-DPCCH.

At step 7 SS shall receive a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 9 SS shall receive an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of updated procedure removing Cell 2 from the active set.

At step 10 SS shall receive CQI report for Cell 1, Cell 4 and Cell 7 on HS-DPCCH.

8.3.4.23.2 Active set update in soft handover: Radio Link addition/deletion in multiple radio link environment with 3C-HSDPA remaining active / Single band / MIMO

8.3.4.23.2.1 Definition and applicability

All UEs which support FDD, 4C-HSDPA Single band operation with 3 carriers and MIMO.

8.3.4.23.2.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

….

The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information" which are not yet contained in the UEs active set;

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

1> perform the physical layer synchronisation procedure B as specified in [29] for the radio links which are not yet contained in the UEs active set;

….

1> if the radio link currently considered to be the serving HS-DSCH radio link is indicated in the IE "Radio Link Removal Information":

2> no longer consider any radio link as the serving HS-DSCH radio link;

2> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

1> for each radio link in the IE "Radio Link Addition Information":

2> take the actions related to TARGET_CELL_PRECONFIGURATION variable as described in subclause 8.5.52.

….

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronisation B, as specified in TS 25.211;

1> the procedure ends on the UE side.

[….]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> if the IE "MIMO parameters" is not included:

2> clear the MIMO_PARAMS variable;

2> trigger lower layers to stop operation in MIMO mode.

1> otherwise:

2> for FDD, if the IE "MIMO N_cqi_typeA/M_cqi ratio" is included:

3> store the value of the IE "MIMO N_cqi_typeA/M_cqi ratio" in the MIMO_PARAMS variable.

2> for FDD, if the IE "MIMO pilot configuration" is included:

3> store the value of the IE "MIMO pilot configuration" in the MIMO_PARAMS variable.

2> for 1.28 Mcps TDD, if the IE "MIMO SF Mode for HS-PDSCH dual stream" is included:

3> store the value of the IE "MIMO SF Mode for HS-PDSCH dual stream" in the MIMO_PARAMS variable.

2> if the IE "MIMO operation" is set to "start":

3> for FDD, if the IE "Precoding weight set restriction" is included:

4> store the value of the IE "Precoding weight set restriction" in the MIMO_PARAMS variable. In addition, it shall be indicated to lower layers that precoding weight set restriction is configured.

3> else:

4> clear the value of the IE "Precoding weight set restriction" in the MIMO_PARAMS variable. In addition, it shall be indicated to lower layers that precoding weight set restriction is not configured.

2> else if the IE "MIMO operation" is set to "continue":

3> if the IE "Precoding weight set restriction" is included:

4> if the IE "Precoding weight set restriction" is already stored in the variable MIMO_PARAMS before receiving this message:

5> continue using "Precoding weight set restriction" for MIMO operation.

4> else:

5> UE behaviour is undefined.

3> else:

4> if the IE "Precoding weight set restriction" is already stored in the variable MIMO_PARAMS before receiving this message:

5> continue using "Precoding weight set restriction" for MIMO operation.

4> else:

5> continue MIMO operation without using "Precoding weight set restriction".

NOTE: This subclause applies to FDD and 1.28 Mcps TDD only.

[….]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the UE shall:

1> take actions related to the MIMO_PARAMS variable as specified in subclause 8.5.32;

1> determine the value of the MIMO_STATUS variable.

The MIMO_STATUS variable shall be set to TRUE only when all the following conditions are met:

1> The UE is in CELL_DCH state;

1> the variable HS_DSCH_RECEPTION is set to TRUE;

1> for FDD, if the UE does not support MIMO only with single stream restriction, or if UE that signalled an HS-DSCH physical layer category of 17 or 18 supports MIMO only with single stream restriction but 64QAM is not configured for downlink, the variable MIMO_PARAMS contains a value for the IE "MIMO N_cqi_typeA/M_cqi ratio"; and

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO pilot configuration".

1> for 1.28 Mcps TDD, the variable MIMO_PARAMS contains a value for the IE "MIMO SF Mode for HS-PDSCH dual stream".

If any of the above conditions is not met and the MIMO_STATUS variable is set to TRUE, the UE shall:

1> set the MIMO_STATUS variable to FALSE;

1> clear the MIMO_PARAMS variable;

1> trigger lower layers to stop operation in MIMO mode on the serving HS-DSCH cell.

If the MIMO_STATUS variable is set to FALSE:

1> if prior to receiving an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the MIMO_STATUS variable was set to TRUE:

2> if the IE "HARQ info" is not included in the received message:

3> the UE behaviour is unspecified.

If the MIMO_STATUS variable is set to TRUE:

1> if prior to receiving an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the MIMO_STATUS variable was set to FALSE:

2> if the IE "HARQ info" is not included in the received message:

3> the UE behaviour is unspecified.

NOTE: This subclause applies to FDD and 1.28 Mcps TDD only.

[….]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message which includes the IE "Downlink secondary cell info FDD" for any of the secondary serving HS-DSCH cells, the UE shall:

1> if the IE "Secondary cell MIMO parameters" is not included in the IE "Downlink secondary cell info FDD":

2> clear the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable;

1> if the CHOICE "Configuration Info" in the IE "Secondary cell MIMO parameters" has the value "Continue":

2> continue using the stored parameters in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable;

1> otherwise:

2> if the IE "MIMO N_cqi_typeA/M_cqi ratio" is included:

3> store the value of the IE "MIMO N_cqi_typeA/M_cqi ratio" in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable.

2> if the IE "MIMO pilot configuration" is included:

3> store the value of the IE "MIMO pilot configuration" in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable.

2> if the IE "Precoding weight set restriction" is included in the IE "Secondary cell MIMO parameters":

3> store the value of the IE "Precoding weight set restriction" in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable;

2> else if the IE "Precoding weight set restriction" is not included in the IE "Secondary cell MIMO parameters":

3> if the IE "MIMO operation" is included in the IE "MIMO parameters" and it is set to "start":

4> if the IE "Precoding weight set restriction" is included in the IE "MIMO parameters":

5> store the value of the IE "Precoding weight set restriction" in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable;

4> else if the IE "Precoding weight set restriction" is not included in the IE "MIMO parameters":

5> clear the value of the IE "Precoding weight set restriction" in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable;

3> else if the IE "MIMO operation" is included in the IE "MIMO parameters" and it is set to "continue" and if the IE "Precoding weight set restriction "is present in the variable MIMO_PARAMS:

4> copy the value of the IE "Precoding weight set restriction" in the variable MIMO_PARAMS and store it in the IE "Precoding weight set restriction" in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable;

3> else:

4> clear the value of the IE "Precoding weight set restriction" in the corresponding entry in the SECONDARY_CELL_MIMO_PARAMS variable.

2> RRC shall indicate to lower layers whether precoding weight set restriction is configured based on the value of the IE "Precoding weight set restriction" in the variable SECONDARY_CELL_MIMO_PARAMS.

1> determine the value of the SECONDARY_CELL_MIMO_STATUS variable for the corresponding secondary serving HS-DSCH cell.

The SECONDARY_CELL_MIMO_STATUS variable shall be set to TRUE for a secondary serving HS-DSCH cell only when all the following conditions are met:

1> The UE is in CELL_DCH state;

1> the variable SECONDARY_CELL_HS_DSCH_RECEPTION is set to TRUE for that secondary serving HS-DSCH cell;

1> if the UE does not support MIMO only with single stream restriction, the corresponding entry in the variable SECONDARY_CELL_MIMO_PARAMS contains a value for the IE "MIMO N_cqi_typeA/M_cqi ratio"; and

1> the corresponding entry in the variable SECONDARY_CELL_MIMO_PARAMS contains a value for the IE "MIMO pilot configuration".

If any of the above conditions is not met and the SECONDARY_CELL_MIMO_STATUS variable is set to TRUE for that secondary serving HS-DSCH cell, the UE shall:

1> set the entry in the SECONDARY_CELL_MIMO_STATUS variable corresponding to that secondary serving HS-DSCH cell to FALSE;

1> clear the entry in the SECONDARY_CELL_MIMO_PARAMS variable corresponding to that secondary serving HS-DSCH cell;

1> trigger lower layers to stop MIMO operation on that secondary serving HS-DSCH cell.

Whenever the entry in the variable SECONDARY_CELL_HS_DSCH_RECEPTION is set to TRUE for a secondary serving HS-DSCH cell, the UE shall:

1> if the UE supports MIMO only with single stream restriction (FDD only):

2> indicate to lower layers to start operation in MIMO mode restricted to single stream transmission on that secondary serving HS-DSCH cell, using the parameter values stored in the corresponding entry in the variable SECONDARY_CELL_MIMO_PARAMS.

1> else:

2> indicate to lower layers to start operation in MIMO mode on that secondary serving HS-DSCH cell, using the parameter values stored in the corresponding entry in the variable SECONDARY_CELL_MIMO_PARAMS.

1> for FDD, when MIMO only with single stream restriction is configured:

2> if MAC-ehs is not configured:

3> the UE behaviour is undefined.

NOTE: This subclause applies to FDD only.

Reference

3GPP TS 25.331 subclause 8.3.4.3, 8.5.32, 8.5.33, 8.5.57

8.3.4.23.2.3 Test purpose

To confirm that the UE operation remains intact when Single band 3C HSDPA with MIMO is configured and UE performs a radio link addition/removal according to the received ACTIVE SET UPDATE message.

8.3.4.23.2.4 Method of test

Initial Condition

System Simulator: 4 cells Cell 1 (f1), Cell 2 (f1), Cell 4 (f2) and Cell 7 (f3) where f1, f2, and f3 are adjacent frequencies.

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A34, as specified in clause 7.4 of TS 34.108 using Single band carrier combination with 3 carriers.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports Multi-Cell with MIMO (UE HS-DSCH categories 30 or 32)

Test Procedure

Table 8.3.4.23.2.4-1

Parameter	Unit	Cell 1,4,7			Cell 2		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Mid Range Test Frequency			Mid Range Test Frequency		
CPICH Ec	dBm/3.84MHz	-60	-60	-60	-70	-60	-70

Table 8.3.4.23.2.4-1 illustrates the downlink power to be applied for the 4 cells at various time instants of the test execution.

At the start of the test, the UE is in CELL_DCH state and has a radio bearer mapped on serving HS-DSCH on Cell 1 and secondary HS-DSCH on Cell 4 and Cell 7.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.23.2.4-1. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS checks that UE transmits composite CQI/PCI reports on each stream for Cell 1, Cell 4 and Cell 7 to verify that the uplink and downlink activities of existing radio links are intact,

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.23.2.4-1. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2. After the MEASUREMENT REPORT message is received, the SS remove the radio link from cell 2 and then SS transmits an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed.

When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 2. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS checks that UE transmits composite CQI/PCI reports on each stream for Cell 1, Cell 4 and Cell 7 to verify that the uplink and downlink activities of existing radio links are intact,

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.23.2.4-1
2	→		MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2).
3	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The RRC message instructs the UE to add Cell 2 to the active set.
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, without interfering with existing connections on the radio link in Cell 1, Cell 4 and Cell 7.
5				SS starts monitoring CQI reports on HS-DPCCH received from the UE on the Anchor Cell 1 and the Secondary cells Cell 4 and Cell 7. SS waits for 10 CQI reports from the Anchor Cell 1.
6				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.23.2.4-1
7	→		MEASUREMENT REPORT	See specific message contents for this message (event '1b' for cell 1)
8	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information". Cell 2 will be removed from the Active Set.
9	→		ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 2.
10				SS starts monitoring CQI reports on HS-DPCCH received from the UE on the Anchor Cell 1 and the Secondary cells Cell 4 and Cell 7. SS waits for 10 CQI reports from the Anchor Cell 1.

Specific Message Content

MEASUREMENT REPORT (Step 2)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark	Version
Radio link addition information		
- Primary CPICH Info		
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108	
- Cell ID	Not present	Rel-4
- CHOICE *DPCH info*	Downlink DPCH info for each RL	
- CHOICE mode	FDD	
- Primary CPICH usage for channel estimation	P-CPICH can be used.	
- DPCH frame offset	Calculated value from Cell synchronisation information	
- Secondary CPICH info	Not Present	
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE	

- Secondary scrambling code	1	
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"	
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.	
- Scrambling code change	Not Present	
- TPC Combination Index	0	
- Power offset $P_{TPC-DPDCH}$	Not present	Rel-5
- Close loop timing adjustment mode	Not Present	
- E-HICH Information	Not present	Rel-6
- E-RGCH Information	Not present	Rel-6
- Target cell preconfiguration information	Not present	Rel-8

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 8)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9.1, with the following exceptions:

Information Element	Value/remark
Radio link removal information - Primary CPICH info - Primary scrambling code	1 radio link to be removed Set to the same P-CPICH scrambling code assigned for cell 2

8.3.4.23.2.5 Test requirement

At step 2 SS shall receive a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 4 SS shall receive an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set update procedure adding Cell 2 to the active set.

At step 5 SS shall receive composite CQI/PCI reports for Cell 1, Cell 4 and Cell 7 on HS-DPCCH.

At step 7 SS shall receive a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

At step 9 SS shall receive an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of updated procedure removing Cell 2 from the active set.

At step 10 SS shall receive composite CQI/PCI reports for Cell 1, Cell 4 and Cell 7 on HS-DPCCH.

8.3.4.23.3 Active set update in soft handover: Radio Link addition/deletion in multiple radio link environment with 3C-HSDPA remaining active / Dual band

8.3.4.23.3.1 Definition and applicability

All UEs which support FDD, 4C-HSDPA Dual band operation and carrier combination (1,2) or (2,1).

8.3.4.23.3.2 Conformance requirement

Same as subclause 8.3.4.23.1.2.

8.3.4.23.3.3 Test purpose

To confirm that the UE operation remains intact when Dual band 3C HSDPA is configured and UE performs a radio link addition/removal according to the received ACTIVE SET UPDATE message.

8.3.4.23.3.4 Method of test

Initial Condition

System Simulator: 4 cells Cell 1 (f1), Cell 2 (f1), Cell 4 (f2) and Cell 7 (f3). For Dual band carrier combination (1,2) case then f2 and f3 are adjacent frequencies on band B. For Dual band carrier combination (2,1) case then f2 is adjacent frequency to f1 on the band A.

NOTE: Band A and band B refer to valid bands for Dual band combinations according to TS 25.101 Table 5.0a C under test.

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A36, as specified in clause 7.4 of TS 34.108 using the Dual band carrier combination (1,2) if supported by the UE else Dual band carrier combination (2,1).

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports Multi-Cell (UE HS-DSCH categories 29, 30, 31 or 32) and Dual band carrier combination (1,2) or (2,1).

Test Procedure

Same as the test procedure in subclause 8.3.4.23.1.4.

8.3.4.23.3.5 Test requirement

Same as subclause 8.3.4.23.1.5.

8.3.4.23.4 Active set update in soft handover: Radio Link addition/deletion in multiple radio link environment with 3C-HSDPA remaining active / Dual band / MIMO

8.3.4.23.4.1 Definition and applicability

All UEs which support FDD, 4C-HSDPA Dual band operation, carrier combinations (1,2) or (2,1) and MIMO.

8.3.4.23.4.2 Conformance requirement

Same as subclause 8.3.4.23.2.2.

8.3.4.23.4.3 Test purpose

To confirm that the UE operation remains intact when Single band 3C HSDPA with MIMO is configured and UE performs a radio link addition/removal according to the received ACTIVE SET UPDATE message.

8.3.4.23.4.4 Method of test

Initial Condition

System Simulator: 4 cells Cell 1 (f1), Cell 2 (f1), Cell 4 (f2) and Cell 7 (f3). For Dual band carrier combination (1,2) case then f2 and f3 are adjacent frequencies on band B. For Dual band carrier combination (2,1) case then f2 is adjacent frequency to f1 on the band A.

NOTE: Band A and band B refer to valid bands for Dual band combinations according to TS 25.101 Table 5.0a C under test.

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A34, as specified in clause 7.4 of TS 34.108 using the Dual band carrier combination (1,2) if supported by the UE else Dual band carrier combination (2,1).

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports Multi-Cell with MIMO (UE HS-DSCH categories 30 or 32) and Dual band carrier combination (1,2) or (2,1)

Test Procedure

Same as the test procedure in subclause 8.3.4.23.2.4.

8.3.4.23.4.5 Test requirement

Same as subclause 8.3.4.23.2.5.

8.3.5 Hard Handover

[Editor's note: This test is included in the "Physical channel reconfiguration", "Radio bearer establishment", "Radio bearer reconfiguration", "Radio bearer release" and "Transport channel reconfiguration".]

8.3.6 Inter-system hard handover from GSM to UTRAN

The content of this clause has been moved to 3GPP TS 51.010-1, clause 60.

8.3.7 Inter-system hard handover from UTRAN to GSM

Clauses 8.3.7 contains test procedures to be used for executing Inter-system Handover from UTRAN to GSM tests. Table 8.3.7-1 contains a summary of the different combinations of parameters being tested, together with a reference to the appropriate generic test procedure. If a test uses a parameter which the UE under test does not support, the test shall be skipped. Test cases in this clause are applicable only to the UE supporting both UTRAN and GSM. The test TEST USIM shall support service 27 to carry out these test cases.

Table 8.3.7-1

From	To	State of call	Ref. clause	Exec counter	Remark
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM AMR	U10	8.3.7.1	1	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM EFR	U10	8.3.7.1	2	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.1	3	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM HR	U10	8.3.7.1	4	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM AMR	U10	8.3.7.1a	1	call active state; A5/3 applied in GSM
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM EFR	U10	8.3.7.1a	2	call active state; A5/3 applied in GSM
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.1a	3	call active state; A5/3 applied in GSM
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM HR	U10	8.3.7.1a	4	call active state; A5/3 applied in GSM
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM AMR	U10	8.3.7.1b	1	call active state; UEA2/UIA2 applied in UTRAN, A5/3 in GSM
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM EFR	U10	8.3.7.1b	2	call active state; UEA2/UIA2 applied in UTRAN, A5/3 in GSM
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.1b	3	call active state; UEA2/UIA2 applied in UTRAN, A5/3 in GSM
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM HR	U10	8.3.7.1b	4	call active state; UEA2/UIA2 applied in UTRAN, A5/3 in GSM

From	To	State of call	Ref. clause	Exec counter	Remark
UTRAN (Streaming/unknown/ uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps CS data	U10	8.3.7.2	1	Same data rate
UTRAN (Streaming/unknown/ uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps HSCSD	U10	8.3.7.2a	1	Same data rate
UTRAN (Streaming/unknown/ uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 28.8 kbps CS data	U10	8.3.7.2a	2	Same data rate
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 57.6 kbps CS data	U10	8.3.7.2a	3	Same data rate
UTRAN (Streaming/unknown/ uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps CS data	U10	8.3.7.3	1	Data rate down grading
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps CS data	U10	8.3.7.3	2	Data rate down grading
UTRAN (Streaming/unknown/ uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps HSCSD	U10	8.3.7.3a	1	Data rate down grading
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps HSCSD	U10	8.3.7.3a	2	Data rate down grading
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 28.8 kbps HSCSD or E-TCH/F28.8	U10	8.3.7.3a	3	Data rate down grading
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U1	8.3.7.4	1	During call establishment
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.5	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.6	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.7	1	failure case

From	To	State of call	Ref. clause	Exec counter	Remark
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.8	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.9	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.10	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.11	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.12	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U1	8.3.7.13	1	call under establishment
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + interactive/ background UL: 32kbps, DL :(max bit rate depending on UE category) PS RAB + uplink:3.4 DL3.4 kbps SRBs)	GSM AMR	U10	8.3.7.14	1	Call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + interactive/ background UL: 32kbps, DL :(max bit rate depending on UE category) PS RAB + uplink:3.4 DL3.4 kbps SRBs)	GSM AMR	U10	8.3.7.15	1	Failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + interactive/ background UL: 64kbps, DL :64kbps PS RAB + uplink:3.4 DL3.4 kbps SRBs)	GSM FR	U10	8.3.7.16	1	Call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + interactive/ background UL: 64kbps, DL :64kbps PS RAB + uplink:3.4 DL3.4 kbps SRBs)	DTM	U10	8.3.7.17	1	Call active state

8.3.7.1 Inter system handover from UTRAN/To GSM/Speech/Success

8.3.7.1.1 Definition

8.3.7.1.2 Conformance requirement

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

1> if the IE "System type" has the value "GSM":

2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".

2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".

1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:

2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":

3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:

2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

Reference(s)

TS 25.331 clause 8.3.7.3, 8.3.7.4.

8.3.7.1.3 Test purpose

To test that the UE supporting both GSM and UTRAN hands over from a UTRAN serving cell to the indicated channel of GSM target cell when the UE is in the speech call active state and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.1.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

Parameter	Unit	Cell 9 (GSM)
Qsearch_I (TDD)	dBm	15 (never)

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports GSM AMR,
- UE supports GSM EFR,
- UE supports GSM FR,
- UE supports GSM HR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810.

Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

Test Procedure

The SS brings the UE into call active state (CC state U10) with AMR. The SS configures the appropriate traffic channel on the GSM cell, then sends HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS through GSM cell.

Depending on the PIXIT parameters the above procedure is executed maximum four times, each time with a different target channel in the GSM cell.

For UEs where the PIXIT indicates support for the GSM/ DCS 1800 and/ or GSM/ PCS 1900 band, the whole test should be repeated to cover these frequencies in order to verify the correct handling of the IE "Frequency band".

Inter RAT handover is normally preceded by the configuration and activation of compressed mode (depending on UE capabilities/ PIXIT) and the configuration of inter- RAT measurements. The inter RAT handover is normally initiated by the SS upon receiving an event triggered measurement report. The verification of this functionality is covered by other subclauses.

Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2, 3, 4, depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1
2	SS			The SS configures a traffic channel on cell 9 (GSM cell): for GSM AMR (M = 1); or for GSM EFR (M = 2); or for GSM FR (M = 3); or for GSM HR (M = 4).
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM AMR (M = 1); or the target channel for GSM EFR (M = 2); or the target channel for GSM FR (M = 3); or the target channel for GSM HR (M = 4).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	←		PHYSICAL INFORMATION	
10	→		SABM	
11	←		UA	
12	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
				The SS performs a 'postamble' and restores both UE and SS to their initial state so that the test can be repeated from step 1 for executions 2,3 and 4 (if required).

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	now
RAB Info	
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T314
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as Variable Length BIT STRING without Length Indicator. The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

For execution 1:

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

For execution 2:

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 2

For execution 3:

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

For execution 4:

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

8.3.7.1.5 Test requirement

At step 5 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 12 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

8.3.7.1a Inter system handover from UTRAN/To GSM/Speech/Success with A5/3 ciphering

8.3.7.1a.1 Definition

This test case is specified for the UE in the interRAT speech handover from UTRAN to GERAN. The A5/3 ciphering algorithm is applied in the GERAN cell. UIA1/UEA1 are applied in the UTRAN cell.

Note: The support of A5/3 is mandatory for the UE in Rel-6 or later, and is optional for the UE in earlier Releases.

8.3.7.1a.2 Conformance requirement

Identical to 8.3.7.1.2

8.3.7.1a.3 Test purpose

Identical to 8.3.7.1.3 but in GSM cell A5/3 is applied

8.3.7.1a.4 Method of test

Identical to 8.3.7.1.4 with exception of:

Related ICS/IXIT statement(s)

- UE supports A5/3,

Specific message contents

Similar to the specific message contents in 8.3.7.1.4 and the UE capability to support A5/3 is checked additionally.

The HANDOVER FROM UTRAN COMMAND indicates in the Cipher Mode Setting information element that A5/3 ciphering algorithm is applied in the GSM cell.

8.3.7.1b Inter system handover from UTRAN/To GSM/Speech/Success with UEA2/UIA2 and A5/3 ciphering

8.3.7.1b.1 Definition

This test case is specified for the Rel-7 (or later) UE in the interRAT speech handover from UTRAN to GERAN. UIA2/UEA2 are applied in the UTRAN cell. The A5/3 ciphering algorithm is applied in the GERAN cell.

8.3.7.1b.2 Conformance requirement

Identical to 8.3.7.1.2

8.3.7.1b.3 Test purpose

Identical to 8.3.7.1.3 but in UTRAN cell UIA2/UEA2 are applied and in GSM cell A5/3 is applied

8.3.7.1b.4 Method of test

Identical to 8.3.7.1.4

Specific message contents

Similar to the specific message contents in 8.3.7.1.4 but instead, the Rel-7 IEs are used, also the UE capability to support UEA2/UIA2 and A5/3 is checked.

The HANDOVER FROM UTRAN COMMAND indicates in the Cipher Mode Setting information element that A5/3 ciphering algorithm is applied in the GSM cell.

8.3.7.2 Inter system handover from UTRAN/To GSM/Data/Same data rate/Success

8.3.7.2.1 Definition

8.3.7.2.2 Conformance requirement

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

1> if the IE "System type" has the value "GSM":

2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".

2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".

1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:

2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":

3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:

2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

Reference(s)

TS 25.331 Clauses 8.3.7.3, 8.3.7.4.

8.3.7.2.3 Test purpose

To test that the UE hands over to the indicated channel of same data rate in the GSM target cell when it is in the data call active state in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.2.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM 14.4 kbps data (full rate traffic channel for 14.4 kbit/s user data (TCH/F14.4)),
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810.

Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

Test Procedure

The SS brings the UE into data call active state (CC state U10) with Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs . The SS configures a 14.4 kbps data channel on the GSM cell, then sends a HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

UEs for which the PIXIT indicates support for the GSM/ DCS 1800 and/ or GSM/ PCS 1900 band, the test should cover these frequencies in order to verify the correct handling of the IE "Frequency band".

Inter RAT handover is normally preceded by the configuration and activation of compressed mode (depending on UE capabilities/ PIXIT) and the configuration of inter- RAT measurements. The inter RAT handover is normally initiated by the SS upon receiving an event triggered measurement report. The verification of this functionality is covered by other subclauses.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1, the configuration is: Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs ;
2	SS			The SS configures a traffic channel on cell 9 (GSM cell): for GSM 14.4 kbps data .
3	←		HANDOVER FROM UTRAN COMMAND GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM 14.4 kbps data
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	←		PHYSICAL INFORMATION	
10	→		SABM	
11	←		UA	
12	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	now
RAB Info	
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T314
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	GSM message List
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING(1..512). The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = data, 14.5 kbit/s radio interface rate (14.4 kbit/s user data (TCH/F14.4))

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.

8.3.7.2.5 Test requirements

At step 5 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 12 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

8.3.7.2a Inter system handover from UTRAN/To GSM/Data/Same data rate/Extended Rates/Success

8.3.7.2a.1 Definition

8.3.7.2a.2 Conformance requirement

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

1> if the IE "System type" has the value "GSM":

2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".

2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".

1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:

2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":

3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:

2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

Reference(s)

TS 25.331 Clauses 8.3.7.3, 8.3.7.4.

8.3.7.2a.3 Test purpose

To test that the UE hands over to the indicated channel of same data rate in the GSM target cell when it is in the data call active state in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.2a.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 or clause 26.13.1.3 (for HSCSD) shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports UTRAN Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports UTRAN Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM 14.4 kbps data (HSCSD),
- UE supports GSM 28.8 kbps data (HSCSD or enhanced circuit switched full rate traffic channel for 28.8 kbit/s user date (E-TCH/F28.8)),
- UE supports GSM 57.6 kbps data,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS.

Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

Test Procedure

The SS brings the UE into data call active state (CC state U10) with a suitable configuration (e.g. Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs for M = 1). The SS configures an appropriate traffic channel (e.g. 14.4 kbps HSCSD data channel for M = 1)on the GSM cell, then sends a HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

Depending on the PIXIT parameters the above procedure is executed maximum three times, each time with a different target channel in the GSM cell.

UEs for which the PIXIT indicates support for the GSM/ DCS 1800 and/ or GSM/ PCS 1900 band, the test should cover these frequencies in order to verify the correct handling of the IE "Frequency band".

Inter RAT handover is normally preceded by the configuration and activation of compressed mode (depending on UE capabilities/ PIXIT) and the configuration of inter- RAT measurements. The inter RAT handover is normally initiated by the SS upon receiving an event triggered measurement report. The verification of this functionality is covered by other subclauses.

Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2, 3, depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1, the configuration is: Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 1); Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 2); Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 3).
2	SS			The SS configures a traffic channel on cell 9 (GSM cell): for GSM HSCSD 14.4 kbps data (M = 1); or for GSM 28.8 kbps data (M = 2); or for GSM 57.6 kbps data (M = 3).
3	←		HANDOVER FROM UTRAN COMMAND GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM HSCSD 14.4 kbps data (M = 1); or for GSM 28.8 kbps data (M = 2); or for GSM 57.6 kbps data (M = 3).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	←		PHYSICAL INFORMATION	
10	→		SABM	
11	←		UA	
12	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
				The SS performs a 'postamble' and restores both UE and SS to their initial state so that the test can be repeated from step 1 for executions 2 and 3 (if required).

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	now
RAB Info	
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T314
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	GSM message List
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING(1..512). The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

For execution 1:

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.13.1.3 of GSM 51.010, except that the Description of a multi-slot configuration supporting 14.4 kbps user data.

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.

For execution 2:

If the UE supports enhanced circuit switched full rate traffic channel for 28.8 kbps user data:

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = data, 29.0 kbit/s radio interface rate (28.8 kbit/s user data (E-TCH/F28.8))

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.

If the UE supports HSCSD:

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.13.1.3 of GSM 51.010, except that the Description of a multi-slot configuration supporting 28.8 kbps user data.

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.

For execution 3:

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.13.1.3 of GSM 51.010, except that the Description of a multi-slot configuration supporting 57.6 kbps user data.

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.

8.3.7.2a.5 Test requirements

At step 5 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 12 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

8.3.7.3 Inter system handover from UTRAN/To GSM/Data/Data rate down grading/Success

8.3.7.3.1 Definition

8.3.7.3.2 Conformance requirement

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

1> if the IE "System type" has the value "GSM":

2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".

2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".

1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:

2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":

3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:

2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

Reference(s)

TS 25.331 Clauses 8.3.7.3, 8.3.7.4.

8.3.7.3.3 Test purpose

To test that the UE hands over to the indicated channel of lower data rate in the GSM target cell when it is in the data call active state in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.3.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports UTRAN Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM 14.4 kbps data (full rate traffic channel for 14.4 kbit/s user data (TCH/F14.4)),
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810.
- UE support CS and PS service.

Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

Test Procedure

The SS brings the UE into data call active state (CC state U10) with a suitable configuration (e.g. Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs for M = 1). The SS configures a 14.4 kbps data channel on the GSM cell, then sends a HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

Upon completion of the handover, depending on UE capabilities, the UE performs routing area update and (re-) establishes the connection towards the PS domain.

Depending on the PIXIT parameters the above procedure is executed maximum two times, each time with different target channel in the GSM cell.

Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2 depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1, the configuration is: Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 1); Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 2).
2	SS			The SS configures a traffic channel on cell 9 (GSM cell): for GSM 14.4 kbps data (M = 1 and 2).
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM 14.4 kbps data (M = 1 and 2).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	←		PHYSICAL INFORMATION	
10	→		SABM	
11	←		UA	
12	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
13	→		ROUTING AREA UPDATE	Conditional on Class A UE.
				The SS performs a 'postamble' and restores both UE and SS to their initial state so that the test can be repeated from step 1 for execution 2 (if required).

Specific message contents

For execution 1:

Same as the message contents of clause 8.3.7.2 Procedure 1 for M = 1.

For execution 2:

Same as the message contents of clause 8.3.7.2 Procedure 1 for M = 1.

8.3.7.3.5 Test requirement

At step 5 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 12 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

8.3.7.3a Inter system handover from UTRAN/To GSM/Data/Data rate down grading/Extended Rates/Success

8.3.7.3a.1 Definition

8.3.7.3a.2 Conformance requirement

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

1> if the IE "System type" has the value "GSM":

2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".

2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".

1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:

2> if the IE "RAB information List" includes one IE " RAB Info" with the IE "CN domain Identity" set to "CS domain":

3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:

2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

Reference(s)

TS 25.331 Clauses 8.3.7.3, 8.3.7.4.

8.3.7.3a.3 Test purpose

To test that the UE hands over to the indicated channel of lower data rate in the GSM target cell when it is in the data call active state in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.3a.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 or clause 26.13.1.3 (for HSCSD) shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports UTRAN Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM 14.4 kbps data (HSCSD),
- UE supports GSM 28.8 kbps data (HSCSD or enhanced circuit switched full rate traffic channel for 28.8 kbit/s user date (E-TCH/F28.8)),
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480 GSM-PCS.
- UE support CS and PS service.

Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

Test Procedure

The SS brings the UE into data call active state (CC state U10) with a suitable configuration (e.g. Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs for M = 1). The SS configures a traffic channel (e.g. 14.4 kbps HSCSD data channel for M = 1)on the GSM cell, then sends a HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

Upon completion of the handover, depending on UE capabilities, the UE performs routing area update and (re-) establishes the connection towards the PS domain.

Depending on the PIXIT parameters the above procedure is executed maximum three times, each time with different target channel in the GSM cell.

Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2, 3, depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1, the configuration is: Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 1); Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 2 and 3).
2	SS			The SS configures a traffic channel on cell 9 (GSM cell): for GSM 14.4 kbps HSCSD data (M = 1 and 2); or for GSM 28.8 kbps data (M = 3).
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM HSCSD 14.4 kbps data (M = 1 and 2); or for GSM 28.8 kbps data (M = 3).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	←		PHYSICAL INFORMATION	
10	→		SABM	
11	←		UA	
12	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
13	→		ROUTING AREA UPDATE	Conditional on Class A UE.
				The SS performs a 'postamble' and restores both UE and SS to their initial state so that the test can be repeated from step 1 for executions 2 and 3 (if required).

Specific message contents

For execution 1:

Same as the message contents of clause 8.3.7.2.2 Procedure 2 for M = 1.

For execution 2:

Same as the message contents of clause 8.3.7.2.2 Procedure 2 for M = 1.

For execution 3:

Same as the message contents of clause 8.3.7.2.2 Procedure 2 for M = 2.

8.3.7.3a.5 Test requirement

At step 5 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 12 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

8.3.7.4 Inter system handover from UTRAN/To GSM/Speech/Establishment/Success

8.3.7.4.1 Definition

8.3.7.4.2 Conformance requirement

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

1> if the IE "System type" has the value "GSM":

2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".

2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".

1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:

2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":

3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:

2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

Reference(s)

TS 25.331 Clauses 8.3.7.3, 8.3.7.4.

8.3.7.4.3 Test purpose

To test that the UE hands over to the indicated channel in the GSM target cell when it is in the call establishment phase in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.4.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9 except the BCCH ARFCN for GSM 900 should be 18 and for GSM 1900 should be 646.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN AMR,
- UE supports GSM FR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810.

Foreseen final state of the UE

The UE is in CC state U1 on cell 9.

Test Procedure

The UE is triggered to initialise an MO speech call. During the call establishment phase, after the SS receives SETUP message the SS configures a dedicated channel on the GSM cell, then sends the UE a HANDOVER FROM UTRAN COMMAND indicating the dedicated channel in the target GSM cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			To trigger the UE to initialise an MO call
2	→		SETUP	U1
3	SS			The SS configures a dedicated channel SDCCH on the GSM cell.
4	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the dedicated channel SDCCH.
5	UE			The UE accepts the handover command and switches to the GSM dedicated channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the dedicated channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11	→		SABM	
12	←		UA	
13	→		HANDOVER COMPLETE	The SS receives the message on the dedicated channel of GSM cell.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	now
RAB Info	Not present
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as Variable Length BIT STRING without Length Indicator. The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.2 of GSM 51.010 except that 'Mode of first channel' IE should be set to 'signalling only' and the BCCH ARFCN for GSM 900 should be 18 and for GSM 1900 should be 646

8.3.7.4.5 Test requirement

At step 13 the SS shall receive HANDOVER COMPLETE message on the dedicated channel of the GSM cell.

8.3.7.5 Inter system handover from UTRAN/To GSM/Speech/Failure

8.3.7.5.1 Definition

8.3.7.5.2 Conformance requirement

If the UE does not succeed in establishing the connection to the other target radio access technology, it shall

1> revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

…

transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

Reference(s)

TS 25.331 Clause 8.3.7.5.

8.3.7.5.3 Test purpose

To test that the UE reactivates the old configuration and uses this to transmit a HANDOVER FROM UTRAN FAILURE message to the network including IE "Inter-RAT Handover failure cause" which is set to "physical channel failure", when it receives an HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover can not be established.

To verify that after the handover failure the UE resumes previously configured compressed mode patterns and measurements.

8.3.7.5.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports GSM FR,
- UE supports UTRAN AMR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810
- UE supports compressed mode (FDD only).

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS brings the UE into call active state (CC state U10) with AMR. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message indicating two GSM cells of which only one is actually configured. This message is used to provide measurement control parameters (GSM RSSI) to the UE and to start compressed mode for the measurement if required according to the UE capabilities. The UE replies according to request by sending RRC: MEASUREMENT REPORT messages periodically to SS (reporting period is 4000 ms).

The SS sends a HANDOVER FROM UTRAN COMMAND indicating a dedicated channel (not configured) of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but can not complete the handover. The SS checks that the handover is failed by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS using the old UTRAN configuration.

After the handover failure, the UE re-activates compressed mode (if configured) and resumes periodic measurement reporting including sending MEASUREMENT REPORT messages periodically to SS.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into U10 state in UTRAN cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 1c.
1a	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
1b	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
1c	←		MEASUREMENT CONTROL	SS provides GSM RSSI measurement control parameters to UE. Compressed mode for GSM RSSI measurement is started if required as per UE capabilities.
1d	→		MEASUREMENT REPORT	UE reports measurement results of GSM RSSI measurement to SS.
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM FR which does not exist in the GSM cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration.
5a	→		MEASUREMENT REPORT	The SS shall verify that the UE resumes periodic measurement reporting for GSM RSSI measurements

Specific message contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1a)

Use the same message sub-type as in TS 34.108 titled "Speech in CS", with the following exceptions:

Information Element	Value/remark	Version
Downlink information common for all radio links		
- DPCH compressed mode info		
- TGPSI	1	
- TGPS Status Flag	Deactivate	
- TGCFN	Not present	
- Transmission gap pattern sequence configuration parameters		
- TGMP	GSM Carrier RSSI Measurement	
- TGPRC	Infinity	
- TGSN	4	
- TGL1	7	
- TGL2	Not present	
- TGD	Undefined	
- TGPL1	12	
- TGPL2	Not present	R99 and REL-4 only
- RPP	Mode 0	
- ITP	Mode 0	
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)	
- Downlink compressed mode method	SF/2	
- Uplink compressed mode method	SF/2	
- Downlink frame type	A	
- DeltaSIR1	20 (2.0)	
- DeltaSIRAfter1	10 (1.0)	
- DeltaSIR2	Not Present	
- DeltaSIR2After2	Not Present	
- N identify abort	Not Present	
- T Reconfirm abort	Not Present	
- TGPSI	2	
- TGPS Status Flag	Deactivate	
- TGCFN	Not present	
- Transmission gap pattern sequence configuration parameters		
- TGMP	GSM Initial BSIC identification	
- TGPRC	Infinity	
- TGSN	4	
- TGL1	7	
- TGL2	Not present	
- TGD	undefined	
- TGPL1	8	
- TGPL2	Not present	R99 and REL-4 only
- RPP	Mode 0	
- ITP	Mode 0	
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)	
- Downlink compressed mode method	SF/2	
- Uplink compressed mode method	SF/2	
- Downlink frame type	A	
- DeltaSIR1	20 (2.0)	
- DeltaSIRAfter1	10 (1.0)	
- DeltaSIR2	Not Present	
- DeltaSIR2After2	Not Present	
- N identify abort	128	
- T Reconfirm abort	Not Present	

MEASUREMENT CONTROL (Step 1c)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
- New inter-RAT cells	
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0 (0 dB)
- Cell selection and re-selection info	Not present
- BSIC	Value set to correspond with HANDOVER COMMAND IEs seen in TS 51.010 clause 26.6.5.1 M=2
- Band indicator	GSM/DCS-1800 or GSM/PCS-1900 (dependent on band used)
- BCCH ARFCN	Value the same as HANDOVER COMMAND in TS 51.010 clause 26.6.5.1 M=2 (dependant on band used)
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0 (0 dB)
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	GSM/DCS-1800 or GSM/PCS-1900 (dependent on band used)
- BCCH ARFCN	Value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOICE system	GSM
- Observed time difference to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	4000
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Deactivate

Information Element	Value/remark
- TGCFN	Not present

MEASUREMENT REPORT, if the UE requires compressed mode (refer ICS/IXIT) (Step 1d and step 5a)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Check to see if present
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to the correct value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT REPORT, if the UE doesn't requires compressed mode (refer ICS/IXIT) (Step 1d and step 5a)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	verified BSIC
- Inter-RAT cell id	Check that is set to 0
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to the correct value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT REPORT, if the UE doesn't require compressed mode (refer ICS/IXIT) (Step 1d and step 5a) (1.28Mcps TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Check to see if present
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to the correct value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message	
- System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1 and that the indicated target channel for GSM FR does not exist in the GSM cell

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

8.3.7.5.5 Test requirement

After step 4 the SS shall receive HANDOVER FROM UTRAN FAILURE message using the old UTRA configuration.

After step 5 the UE shall correctly report the GSM RSSI value.

8.3.7.6 Inter system handover from UTRAN/To GSM/Speech/Failure (L2 Establishment)

8.3.7.6.1 Definition

8.3.7.6.2 Conformance requirement

If the UE does not succeed to establish the connection to the other radio access technology , as is unable to obtain L2 establishment it shall

- resume the connection to UTRAN using the resources used before receiving the HANDOVER FROM UTRAN COMMAND message; and

- transmit the HANDOVER FROM UTRAN FAILURE message on uplink DCCH using AM RLC.

Reference(s)

3GPP TS 25.331 clause 8.3.7

TS 04.06 Clause 5.4.1.3

TS 04.08 Clause 3.1.5

8.3.7.6.3 Test purpose

To Test that the UE shall keep its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "physical channel failure" in IE "Inter_RAT HO failure cause", when it receives a HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover cannot be established due to failure in L2 establishment.

8.3.7.6.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51010-1 section 26.6.5.1 shall be referenced for the default parameters of cell 9.

UE: CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. SS activates a dedicated GSM traffic channel then sends HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. When the UE does not succeed in establishing the connection to the target radio access technology it shall revert back to UTRA configuration establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND transmit the HANDOVER FROM UTRAN FAILURE.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	SS			The SS configures cell 9 as a GSM cell with traffic channel.
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: The target channel.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	←		PHYSICAL INFORMATION	Allows a proper transmission by the MS. Sent in unacknowledged mode as soon as the SS has detected a HANDOVER ACCESS. As soon as MS detects it then it stops T3124. On SS side T3105 could be started N times at the maximum as long as the step 8 is not performed
10	→		SABM	To establish L2 connection
11	SS			SS does not sent UA frame
12	UE			On T200 expiration, SS sends N200 times the SABM frame (steps 10) Then MS deactivates new channels and reactivates old UTRA resources it had before receiving the handover command
13	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell. Sent in acknowledge mode The cause in the IE "inter-RAT change failure" is set to "physical channel failure"

Specific message contents

Same as the message contents of clause 8.3.7.1 for M = 3.

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	physical channel failure
Inter-system message	Not Checked

8.3.7.6.5 Test requirement

The SS shall receive HANDOVER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.7.7 Inter system handover from UTRAN/To GSM/Speech/Failure (L1 Synchronization)

8.3.7.7.1 Definition

8.3.7.7.2 Conformance requirement

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

1> revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

…

1> transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

Reference(s)

TS 25.331 Clause 8.3.7.5

8.3.7.7.3 Test purpose

To test that the UE reactivates its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "physical channel failure" in IE "Inter-RAT Handover failure cause", when it receives a HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover cannot be established due to failure in L1 Synchronization.

8.3.7.7.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 section 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports GSM FR,
- UE supports UTRAN AMR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS brings the UE into call active state (CC state U10). The SS activates a dedicated channel in the GSM cell, then sends HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH using the UTRAN configuration. The UE receives the command, configures itself accordingly and sends the HANDOVER ACCESS burst. Upon receiving this burst, the SS turns off the dedicated channel indicated to the UE, so the UE cannot complete the handover. The SS checks that the UE reverts to the old UTRA configuration by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS via the old UTRAN configuration.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1.
2	SS			The SS configures a traffic channel on cell 9 (GSM cell).
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: The target channel for GSM FR in GSM Cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	SS			The target GSM Traffic Channel is Switched off
8	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration. The cause in the IE "inter-RAT change failure" is set to "physical channel failure"

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message	
- System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

8.3.7.7.5 Test requirement

After step 7 the SS shall receive HANDOVER FROM UTRAN FAILURE message via the old UTRA configuration.

8.3.7.8 Inter system handover from UTRAN/To GSM/Speech/Failure (Invalid Inter-RAT message)

8.3.7.8.1 Definition

8.3.7.8.2 Conformance requirement

If the IE "Inter-RAT message" received within the HANDOVER FROM UTRAN COMMAND message does not include a valid inter RAT handover message in accordance with the protocol specifications for the target RAT, the UE shall perform procedure specific error handling as follows. The UE shall:

1> set the IE "failure cause" to the cause value "Inter-RAT protocol error";

1> include the IE "Inter-RAT message" in accordance with the specifications applicable to the other RAT;

1> transmit a HANDOVER FROM UTRAN FAILURE message on the uplink DCCH using AM RLC;

1> when the transmission of the HANDOVER FROM UTRAN FAILURE message has been confirmed by RLC:

2> continue with any ongoing processes and procedures as if the invalid HANDOVER FROM UTRAN COMMAND message has not been received;

2> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.6

8.3.7.8.3 Test purpose

To Test that the UE shall keep its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "Inter-RAT protocol error" in IE "Inter_RAT HO failure cause", when it receives a Handover From UTRAN message, with the IE "Inter-RAT message" received within the HANDOVER FROM UTRAN COMMAND message not including a valid inter RAT handover message in accordance with the protocol specifications for the target RAT.

8.3.7.8.4 Method of test

Initial conditions

System Simulator : 1 UTRAN cell.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. The SS then sends a HANDOVER FROM UTRAN COMMAND message not including a valid inter RAT handover message in accordance with the protocol specifications for the target RAT, to the UE through DCCH of the serving UTRAN cell. The UE receives the command and finds that the Inter Rat message is Invalid. The SS checks that the handover is failed by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	←		HandoverFromUTRAN Command-GSM	Send on cell 1 (UTRAN cell) and the message carries an Invalid HANDOVER FROM UTRAN COMMAND -GSM
3	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
RAB Info	Not present
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as Variable Length BIT STRING without Length Indicator. The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Contains an Invalid Handover Command.

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	Inter-RAT protocol error
Inter-system message	Not checked

8.3.7.8.5 Test requirement

In step 3 the SS shall receive HANDOVER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.7.9 Inter system handover from UTRAN/To GSM/Speech/Failure (Unsupported configuration)

8.3.7.9.1 Definition

8.3.7.9.2 Conformance requirement:

If:

…

- the UTRAN instructs the UE to use a non-supported configuration; or

…

the UE shall:

1> transmit a HANDOVER FROM UTRAN FAILURE message, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "configuration unacceptable";

2> when the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:

3> resume normal operation as if the invalid HANDOVER FROM UTRAN COMMAND message has not been received;

3> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.8

8.3.7.9.3 Test purpose

To test that the UE shall keep its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "configuration unacceptable" in IE "Inter-RAT Handover failure cause", when it receives a HANDOVER FROM UTRAN COMMAND message, with the IE "GSM message" containing a HANDOVER COMMAND message including a configuration not supported by the UE.

8.3.7.9.4 Method of test

Initial conditions

System Simulator: 1 UTRAN cell.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. Related

ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS brings the UE into call active state (CC state U10) with AMR on the UTRAN cell. The SS then sends an HANDOVER FROM UTRAN COMMAND message including a configuration not supported by the UE in the HANDOVER COMMAND that is contained in the IE "GSM message", to the UE through DCCH using the UTRAN configuration. The UE receives the command and finds that the configuration given in Inter Rat message is not supported. The SS checks that the UE reverts to the old UTRA configuration by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS using the old UTRA configuration.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	←		HANDOVER FROM UTRAN COMMAND -GSM	Send using the UTRAN configuration and the message carries an unsupported configuration.
3	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RAB_Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the frequency band is set to a value not supported by the UE.

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-RAT handover failure	
-Inter-RAT handover failure cause	configuration unacceptable

8.3.7.9.5 Test requirement

After step 2 the SS shall receive a HANDOVER FROM UTRAN FAILURE message via the old UTRA configuration.

8.3.7.10 Inter system handover from UTRAN/To GSM/Speech/Failure (Reception by UE in CELL_FACH)

8.3.7.10.1 Definition

8.3.7.10.2 Conformance requirement

If the UE receives HANDOVER FROM UTRAN COMMAND while in CELL_FACH, the UE shall:

1> transmit a HANDOVER FROM UTRAN FAILURE message, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "protocol error", include IE "Protocol error information"; and

2> set the value of IE "Protocol error cause" to "Message not compatible with receiver state";

2> when the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:

3> resume normal operation as if the invalid HANDOVER FROM UTRAN COMMAND message has not been received;

3> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.8a

8.3.7.10.3 Test purpose

The UE shall keep its old configuration when the UE receives a HANDOVER FROM UTRAN COMMAND message when in CELL_FACH state and then transmit a HANDOVER FROM UTRAN FAILURE message on the DCCH using AM RLC, which sets value "protocol error" in IE "Inter_RAT HO failure cause" and is set to "Message not compatible with receiver state" in IE "Protocol error cause".

8.3.7.10.4 Method of test

Initial conditions

System Simulator : 1 UTRAN Cell

UE : RRC State CS-DCCH_FACH (state 6-6) as specified in clause 7.4 of TS 34.108, on Cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in RRC is in State CS-DCCH_FACH (state 6-6) as specified in clause 7.4 of TS 34.108, on cell 1.

Test Procedure

The SS starts GSM cell without activating any dedicated channel in the cell, then sends HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but cannot complete the handover. The SS checks that the handover is failed by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into CS-DCCH_FACH (state 6-6) _FACH state in cell 1
2	←		HANDOVER FROM UTRAN COMMAND	Send on cell 1 (UTRAN cell) and the message indicates: The target channel for GSM
3	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

Same as the message contents of clause 8.3.7.1 for M = 3.

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	Protocol Error
-Diagnostics Type	Type1
-Protocol Error Cause	Message Not Compatible With Receiver State
Inter-system message	Not Checked

8.3.7.10.5 Test requirement

After step 2 the SS shall receive HANDOVER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.7.11 Inter system handover from UTRAN/To GSM/Speech/Failure (Invalid message reception)

8.3.7.11.1 Definition

8.3.7.11.2 Conformance requirement:

If the HANDOVER FROM UTRAN COMMAND message contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

1> set the IE "RRC transaction identifier" in the HANDOVER FROM UTRAN FAILURE message to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Rejected transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> set the IE "failure cause" to the cause value "protocol error";

1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION;

1> transmit a HANDOVER FROM UTRAN FAILURE message on the uplink DCCH using AM RLC;

1> when the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:

2> continue with any ongoing processes and procedures as if the invalid HANDOVER FROM UTRAN COMMAND message has not been received;

2> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.6

8.3.7.11.3 Test purpose

The UE shall keep its old configuration when the UE receives a Handover From UTRAN message that cause the variable PROTOCOL_ERROR_REJECT to be set to TRUE. It shall then transmit a HANDOVER FROM UTRAN FAILURE message on the uplink DCCH. The IE "Protocol error information" shall contain an IE "Protocol error cause" set to " Message extension not comprehended ".

8.3.7.11.4 Method of test

Initial conditions

System Simulator : 1 UTRAN cell.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. The SS then sends an HANDOVER FROM UTRAN COMMAND message, which contains an unexpected critical message extension, to the UE through DCCH of the serving UTRAN cell. The SS checks that the handover is failed by checking that the UE transmits a HANDOVER FROM UTRAN FAILURE message on the uplink DCCH. The IE "Protocol error information" shall contain an IE "Protocol error cause" set to " Message extension not comprehended ".

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	←		Handover From UTRAN Command	Send on cell 1 (UTRAN cell) and the message is short in length to be decoded into a valid Handover From UTRAN command
3	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

HANDOVER FROM UTRAN COMMAND

Use the HANDOVER FROM UTRAN COMMAND message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Critical extensions	'FF'H

HANDOVER FROM UTRAN FAILURE (Step 3)

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	Protocol Error
-Diagnostics Type	Type1
-Protocol Error Cause	Message extension not comprehended
Inter-system message	Not Checked

8.3.7.11.5 Test requirement

In step 3 the SS shall receive HANDOVER FROM UTRAN FAILURE message in the UTRAN cell.

8.3.7.12 Inter system handover from UTRAN/To GSM/Speech/Failure (Physical channel Failure and Reversion Failure)

8.3.7.12.1 Definition

8.3.7.12.2 Conformance requirement

1. This section applies to R99 & Rel-4 releases:

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

1> revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

1> if the UE does not succeed to establish the UTRA physical channel(s):

2> perform a cell update procedure according to subclause 8.3.1 in TS 25.331with cause "Radio link failure";

2> when the cell update procedure has completed successfully:

3> proceed as below.

1> transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

2. This section applies from Rel-5 releases onwards:

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

1> revert back to the UTRA configuration;

1> if the CM_PATTERN_ACTIVATION_ABORTED flag is not set to TRUE:

2> establish the UTRA physical channel(s) (including HS-DSCH related channels) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);

2> after the establishment of the uplink physical channel, send DPCCH and no DPDCH according to [26] during the number of frames indicated in the IE "PC preamble" in the variable LATEST_CONFIGURED_SRB_DELAY_AND_PC_PREAMBLE; and

2> then not send any data on signalling radio bearers RB0 to RB4 during the number of frames indicated in the IE "SRB delay" in the variable LATEST_CONFIGURED_SRB_DELAY_AND_PC_PREAMBLE.

Reference

3GPP TS 25.331 clause 8.3.7.5

8.3.7.12.3 Test purpose

The UE shall perform a cell update when the UE fails to revert to the old configuration after the detection of physical channel failure in the target RAT cell as given in the HANDOVER FROM UTRAN COMMAND message. After the UE completes the cell update procedure, the UE shall transmit a HANDOVER FROM UTRAN FAILURE message on the DCCH using AM RLC, including IE "failure cause" set to "physical channel failure".

8.3.7.12.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 section 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

The 'timer poll' value in the SS RLC transmit entity should be set to 800 ms.

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS and brings the UE into call active state (CC state U10) with AMR on the UTRAN cell. The SS configures a target dedicated channel on the GSM cell. The SS sends a HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH using the UTRAN configuration. The UE receives the command and configures itself accordingly but cannot complete the handover and wants to revert to the old configuration, but the UE cannot revert to the old configuration because the SS released the old configuration. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit CELL UPDATE CONFIRM message on downlink DCCH after receiving CELL UPDATE message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits the HANDOVER FROM UTRAN FAILURE message to the SS using the new UTRA configuration, on the DCCH using AM RLC, setting the value of IE "failure cause" to " physical channel failure" . In case of R99 or Rel-4, UE may transmit HANDOVER FROM UTRAN FAILURE message using uplink AM RLC and subsequently PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	SS			The SS configures a dedicated GSM FR channel on the GSM cell.
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send using the UTRA configuration and the message indicates: the target channel for GSM FR.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER COMMAND message that is contained within the HANDOVER FROM UTRAN COMMAND -GSM message
4a	SS			SS removes the UTRAN physical channel (DPCH) allocated to the mobile to ensure UE will not be able to revert back to the old UTRAN configuration when handover failed
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell. Upon receiving this burst, SS removes the target GSM Traffic Channel. As a result not only the handover will fail, but also the reversion to the old UTRA configuration.
6	→		CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
7	←		CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
8				The SS configures the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
10	→		HANDOVER FROM UTRAN FAILURE	The IE "failure cause" shall be set to "physical channel failure"
				Note: For R99 and Rel-4 UEs the messages in Steps 9 and 10 may be received in either order.

Specific message contents

Same as the message contents of clause 8.3.7.1 for Execution 3.

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode - T312	 2

CELL UPDATE (Step 6)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001' "radio link failure"

CELL UPDATE CONFIRM (Step 7) (FDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark	Version
U-RNTI	Same as CELL UPDATE message in step 3	
RRC State indicator	CELL_DCH	
CHOICE channel requirement	Uplink DPCH info	
-UplinkDPCH Info	Same as specified in “Contents of RADIO BEARER SETUP message: AM or UM” for condition A2 (Speech CS) in TS 34.108 clause 9.1	
- DPCCH power offset	-40 (-80 dB)	
- PC Preamble	1 frame	
- SRB delay	7 frames	
- Power Control Algorithm	Algorithm1	
- TPC step size	0 (1 dB)	
- Scrambling code type	Long	
- Scrambling code number	0 (0 to 16777215)	
- Number of DPDCH	Not Present(1)	
- spreading factor	Reference to TS34.108 clause 6.10 Parameter Set	
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set	
- Number of FBI bit	Reference to TS34.108 clause 6.10 Parameter Set	
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set	
Downlink information common for all radio links	Same as specified in “Contents of RADIO BEARER SETUP message: AM or UM” for condition A2 (Speech CS) in TS 34.108 clause 9.1	
CHOICE Mode	FDD	
- Downlink DPCH info common for all RL		
- Timing indicator	Initialise	
- CFN-targetSFN frame offset	Not Present	
- Downlink DPCH power control information		
- DPC mode	0 (single)	
- CHOICE mode	FDD	
- Power offset PPilot-DPDCH	0	
- DL rate matching restriction information	Not Present	
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set	
- Fixed or Flexible Position	Reference to TS34.108 clause 6.10 Parameter Set	
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set	
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set	
- DPCH compressed mode info	Not Present	
- TX Diversity mode	None	
- SSDT information	Not Present	R99 and Rel-4 only
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512	
Downlink information for each radio links		
- Primary CPICH info		
- Primary scrambling code	100	
- PDSCH with SHO DCH info	Not Present	R99 and Rel-4 only
- PDSCH code mapping	Not Present	R99 and Rel-4 only
- Downlink DPCH info for each RL		
- Primary CPICH usage for channel estimation	Primary CPICH may be used	
- DPCH frame offset	Set to value: Default DPCH Offset value (as currently stored in SS) mod 38400	
- Secondary CPICH info	Not Present	
- DL channelisation code		
- Secondary scrambling code	2	
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set	
- Code number	SF-1(SF is reference to TS34.108 clause 6.10 Parameter Set)	
- Scrambling code change	No change	
- TPC combination index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Closed loop timing adjustment mode	Not Present	

- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

CELL UPDATE CONFIRM (Step 7) (3.84 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS34.108, clause 9, with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	30dBm
CHOICE Mode	TDD
Downlink information for each radio links	
- Primary CCPCH info	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- CHOICE SyncCase	Not Present
- Cell Parameters ID	Not Present
- Block STTD indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	TDD
- DL CCTrCh List	
- TFCS ID	1
- Time info	
- Activation time	Not Present (default)
- Duration	Not Present (default)
- Common timeslot info	Not Present (default)
- Downlink DPCH timeslots and codes	Not Present (default)
- UL CCTrCH TPC List	Not Present (default)

CELL UPDATE CONFIRM (Step 7) (1.28 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS34.108, clause 9, with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	30dBm
CHOICE Mode	TDD
Downlink information for each radio links	
- Primary CCPCH info	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- TSTD indicator	FALSE
- Cell Parameters ID	Not Present
- Block STTD indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	TDD
- DL CCTrCh List	
- TFCS ID	1
- Time info	
- Activation time	Not Present (default)
- Duration	Not Present (default)
- Common timeslot info	Not Present (default)
- Downlink DPCH timeslots and codes	Not Present (default)
- UL CCTrCH TPC List	Not Present (default)

CELL UPDATE CONFIRM (Step 7) (3.84 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS34.108, clause 9, with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	30dBm
CHOICE Mode	TDD
Downlink information for each radio links	
- Primary CCPCH info	
- CHOICE mode	TDD
- CHOICE TDD option	7.68 Mcps TDD
- CHOICE SyncCase	Not Present
- Cell Parameters ID	Not Present
- Block STTD indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	TDD
- DL CCTrCh List	
- TFCS ID	1
- Time info	
- Activation time	Not Present (default)
- Duration	Not Present (default)
- Common timeslot info	Not Present (default)
- Downlink DPCH timeslots and codes	Not Present (default)
- UL CCTrCH TPC List	Not Present (default)

HANDOVER FROM UTRAN COMMAND

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message	
- System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 9)

Use the same message found in TS 34.108 clause 9, with the exceptions of the following IEs:

Information Element	Value/remark
Uplink counter synchronisation info	Not Checked

HANDOVER FROM UTRAN FAILURE (Step 10)

The contents of this message are identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

8.3.7.12.5 Test requirement

After step 5 the SS shall receive a CELL UPDATE message.

At step 9 the SS shall receive a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

At step 10 the SS shall receive a HANDOVER FROM UTRAN FAILURE message via the new UTRA configuration.

Note: For R99 and Rel-4 UEs the messages in Steps 9 and 10 may be received in either order.

8.3.7.13 Inter system handover from UTRAN/To GSM/ success / call under establishment

8.3.7.13.1 Definition

8.3.7.13.2 Conformance requirement

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

1> if the IE "System type" has the value "GSM":

2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".

2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".

1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:

2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":

3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

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Upon successfully completing the handover, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

Upon successfully completing the handover, the UE shall:

1> if the USIM is present:

2> store the current START value for every CN domain in the USIM [50];

2> if the "START" stored in the USIM [50] for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START_THRESHOLD:

3> delete the ciphering and integrity keys that are stored in the USIM for that CN domain;

3> inform the deletion of these keys to upper layers.

1> if the SIM is present:

2> store the current START value for every CN domain in the UE;

2> if the "START" stored in the UE for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START_THRESHOLD:

3> delete the ciphering and integrity keys that are stored in the SIM for that CN domain;

3> inform the deletion of these keys to upper layers.

1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:

2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

Reference

3GPP TS 25.331 clause 8.3.7.3, 8.3.7.4

8.3.7.13.3 Test purpose

To test that the UE supporting both GSM and UTRAN performs handover from UTRAN to the indicated channel of GSM target cell when the UE receives a HANDOVER FROM UTRAN COMMAND in call establishment phase.

To test that the UE continues the call in the GSM cell, after successful completion of the Handover.

8.3.7.13.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010-1 26.6.5.1 section 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9 except the BCCH ARFCN for GSM 900 should be 18 and for GSM 1900 should be 646.

UE: CC State U0 (NULL state) in cell 1.

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810.

Foreseen final state of the UE

The UE is in CC state U0 (NULL) on cell 1.

Test Procedure

The SS activates the UTRAN cell and GSM Cell. The UE is triggered to initialise an MO speech call. During the call establishment phase, the SS is configured to not transmit the RLC Acknowledgment for SETUP message. SS configures a dedicated channel in GSM Cell, then sends the UE a HANDOVER FROM UTRAN COMMAND indicating the dedicated channel in the target GSM cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell. The SS checks that the MS correctly retransmits a CC SETUP message that was not acknowledged by UTRAN RLC Layer before the Handover, following completion of the handover to GSM cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			To trigger the UE to initialise an MO call
2	→		SETUP	SS does not Acknowledge it
3	SS			The SS starts the GSM cell and configure a dedicated channel SDCCH.
4	←		HANDOVER FROM UTRAN COMMANDGSM	Send via the UTRA configuration and the message indicates: the dedicated channel SDCCH.
5	UE			The UE accepts the handover command and switches to the GSM dedicated channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the dedicated channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11			Void	
12			Void	
13	→		HANDOVER COMPLETE	The SS receives the message on the dedicated channel of GSM cell.
14	->		SETUP	The SS receives the message on the dedicated channel of GSM cell.
15	<-		CHANNEL RELEASE	

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RAB_info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.2 of GSM 51.010, except that the CHANNEL MODE IE is included with value = signalling only and the BCCH ARFCN for GSM 900 should be 18 and for GSM 1900 should be 646

8.3.7.13.5 Test requirement

At step 14 the SS shall receive SETUP message on the dedicated channel of the GSM cell.

8.3.7.14 Inter system handover from UTRAN/To GSM/Speech/Success (stop of HS-DSCH reception)

8.3.7.14.1 Definition and applicability

All UEs which support FDD or TDD, HS-PDSCH and GSM.

8.3.7.14.2 Conformance requirement

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

1> if HS-DSCH is configured for UTRA:

2> stop any HS-DSCH reception procedures;

2> clear any stored HS-PDSCH configuration;

2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

2> release all HARQ resources;

2> remove any H-RNTI stored;

2> clear the variable H_RNTI;

2> set the variable HS_DSCH_RECEPTION to FALSE.

1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later, or 3GPP TS 44.018	HANDOVER COMMAND
GERAN Iu	3GPP TS 44.118	RADIO BEARER RECONFIGURATION
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

1> if the IE "System type" has the value "GSM" or "GERAN Iu":

2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".

2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".

1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:

2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":

3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE1: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE2: In handover to GERAN *Iu mode*, the RAB information is included in the RADIO BEARER RECONFIGURATION message specified in [53].

NOTE3: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

NOTE4: The UE may ignore the IE "NAS synchronisation indicator" if included in the HANDOVER FROM UTRAN COMMAND message;

NOTE5: The UE behaviour is undefined if the IE "Re-establishment timer" in the IE "RAB info" indicates a timer different from the timer currently configured for this RAB.

During compressed mode on the associated DPCH or F-DPCH, the following applies for the UE for transmission of HS-DPCCH and reception of HS-SCCH and HS-PDSCH:

- The UE shall neglect a HS-SCCH or HS-PDSCH transmission, if a part of the HS-SCCH or a part of the corresponding HS-PDSCH overlaps with a downlink transmission gap on the associated DPCH or F-DPCH. In this case, neither ACK, nor NACK shall be transmitted by the UE to respond to the corresponding downlink transmission.

- If a part of a HS-DPCCH slot allocated to HARQ-ACK overlaps with an uplink transmission gap on the associated DPCH, the UE shall use DTX on the HS-DPCCH in that HS-DPCCH slot.

- If in a HS-DPCCH sub-frame a part of the slots allocated for CQI information overlaps with an uplink transmission gap on the associated DPCH, the UE shall not transmit CQI information in that sub-frame.

- If a CQI report is scheduled in the current CQI field according to subclause 6A.1.2 paragraph (2), and the corresponding 3-slot reference period (as defined in subclause 6A.2) wholly or partly overlaps a downlink transmission gap, then the UE shall use DTX in the current CQI field and in the CQI fields in the next (*N_cqi_transmit*–1) subframes.

Reference(s)

TS 25.331 Clause 8.3.7.5.

TS 25.214 Clause 6A.3.

8.3.7.14.3 Test purpose

1. To test that the UE supporting both GSM and UTRAN hands over from a UTRAN serving cell to the indicated channel of GSM target cell when the UE is in the speech call active state, active PS RAB with HS-DSCH reception and receives an HANDOVER FROM UTRAN COMMAND.2. To verify that UE stops HS-DSCH reception after receiving the HANDOVER FROM UTRAN COMMAND.

3. For the UEs supporting compressed mode, to verify that the HS-DSCH reception has no impact on the GSM cells measurement when GSM compressed mode is activated.

8.3.7.14.4 Method of test

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports PS+CS
- UE supports GSM AMR
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810
- UE supports compressed mode (FDD only).

Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

Test Procedure

The SS brings the UE into call active state (CC state U10) with AMR with configuration (conversational/speech/uplink: 12.2 DL: 12.2 kbps/CS RAB + interactive/ background UL: 384kbps, DL: (max bit rate depending on UE category) PS RAB + uplink:3.4 DL3.4 kbps SRBs). In case UE does not support data rate of 384kbps in UL, then 64kbps should be used in UL for the PS RAB. PS RAB is configured with HS-DSCH.
The SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message indicating two GSM cells of which only one is actually configured. This message is used to provide measurement control parameters (GSM RSSI) to the UE and to start compressed mode for the measurement if required according to the UE capabilities. The UE replies according to request by sending MEASUREMENT REPORT messages periodically to SS (reporting period is 4000 ms).

The SS configures the appropriate traffic channel on the GSM cell, then sends HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS through GSM cell. SS receives GPRS SUSPENSION REQUEST from the UE.

SS disconnects the CS call and releases the RR connection.

Once RR connection is released, an RAU procedure is performed. To check that PDP context is active, SS sends MODIFY PDP CONTEXT REQUEST and assigns new QoS in GPRS cell. The UE may or may not accept the new QoS and replies to the SS accordingly.

For UEs where the PIXIT indicates support for the GSM/ DCS 1800 and/ or GSM/ PCS 1900 band, the whole test should be repeated to cover these frequencies in order to verify the correct handling of the IE "Frequency band".

Inter RAT handover is normally preceded by the configuration and activation of compressed mode (depending on UE capabilities/ PIXIT) and the configuration of inter- RAT measurements. The inter RAT handover is normally initiated by the SS upon receiving an event triggered measurement report. The verification of this functionality is covered by other subclauses.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state and PS RAB with HS-DSCH active in cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then go to step 1c.
1a	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
1b	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
1c	←		MEASUREMENT CONTROL	SS provides GSM RSSI measurement control parameters to UE. Compressed mode for GSM RSSI measurement is started if required as per UE capabilities.
1d	→		MEASUREMENT REPORT	UE reports measurement results of GSM RSSI measurement to SS.
2	SS			The SS configures a traffic channel on cell 9 (GSM cell): for GSM AMR (M = 1); or
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates:
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	←		PHYSICAL INFORMATION	
10	→		SABM	
11	←		UA	
12	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
13	→		GPRS SUSPENSION REQUEST	UE sends GPRS SUSPENSION REQUEST on FACCH. Suspension cause value is not checked
14	←		CHANNEL RELEASE	SS disconnects the CS call and releases the RR connection. The GPRS Resumption IE is included and is set to “resumption of GPRS services successfully acknowledged.”
14a	→		CHANNEL REQUEST	The SS receives this burst on the RACH of cell 9(GSM cell).
14b	←		IMMEDIATE ASSIGNMENT	Sent on AGCH.
15	→		ROUTING AREA UPDATE REQUEST	GMM “update type” = ‘combined RA/LA updating’
16	←		ROUTING AREA UPDATE ACCEPT	GMM. P-TMSI is included
17	→		ROUTING AREA UPDATE COMPLETE	
18	←		MODIFY PDP CONTEXT REQUEST	SS requests the modification of a PDP context, with a new QoS (peak throughput is changed to ‘0011’)
A19	→		MODIFY PDP CONTEXT ACCEPT	UE behaviour type A: Accept the PDP context modification
B19	→		DEACTIVATE PDP CONTEXT REQUEST	UE behaviour type B: Initiate the PDP context deactivation. Cause set to 'QoS not accepted'
B19a	←		DEACTIVATE PDP CONTEXT ACCEPT	UE behaviour type B: Accept the PDP context deactivation.
B19b	→		DETACH REQUEST	UE behaviour type B: A non-auto attach UE may (optionally) send a Detach Request. The SS shall wait up to 'T3390' seconds for the Detach Request.
B19c	←		DETACH ACCEPT	If the UE transmitted a Detach Request message in step B20b then the SS responds with a Detach Accept message.

Specific message contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1a)

Use the same message sub-type as in TS 34.108 titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	Undefined
- TGPL1	12
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	HLS
- Downlink frame type	A
- DeltaSIR1	20 (2.0)
- DeltaSIRAfter1	10 (1.0)
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Initial BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	Undefined
- TGPL1	8
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	HLS
- Downlink frame type	A
- DeltaSIR1	20 (2.0)
- DeltaSIRAfter1	10 (1.0)
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	128
- T Reconfirm abort	Not Present

MEASUREMENT CONTROL (Step 1c)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
- New inter-RAT cells	
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0 (0 dB)
- Cell selection and re-selection info	Not present
- BSIC	Value set to correspond with HANDOVER COMMAND IEs seen in TS 51.010 clause 26.6.5.1 M=2
- Band indicator	GSM/DCS-1800 or GSM/PCS-1900 (dependent on band used)
- BCCH ARFCN	Value the same as HANDOVER COMMAND in TS 51.010 clause 26.6.5.1 M=2 (dependant on band used)
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0 (0 dB)
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	GSM/DCS-1800 or GSM/PCS-1900 (dependent on band used)
- BCCH ARFCN	Value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOICE system	GSM
- Observed time difference to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	Infinity
- Reporting interval	4000
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Deactivate

Information Element	Value/remark
- TGCFN	Not present

MEASUREMENT REPORT, if the UE requires compressed mode (refer ICS/IXIT) (Step 1d)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Check to see if present
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to the correct value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT REPORT, if the UE doesn't requires compressed mode (refer ICS/IXIT) (Step 1d)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	verified BSIC
- Inter-RAT cell id	Check that is set to 0
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to the correct value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT REPORT (1.28Mcps TDD) (Step 1d)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Check to see if present
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to the correct value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	now
RAB Info	
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T314
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as Variable Length BIT STRING without Length Indicator. The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

8.3.7.14.5 Test requirement

At step 1b the SS receives a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message indicating the successful download of the compressed mode parameters.

At step 1d the SS receives a MEASUREMENT REPORT message containing the measured results of the GSM cell.

At step 5 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 12 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

At step 15 SS receives ROUTING AREA UPDATE REQUEST message.

After step 18, SS should either receive DEACTIVATE PDP CONTEXT REQUEST message with cause as "QoS not accepted" or receive a MODIFY PDP CONTEXT ACCEPT message from UE.

8.3.7.15 Inter system handover from UTRAN/To GSM/Speech/Failure(stop of HS-DSCH reception)

8.3.7.15.1 Definition

8.3.7.15.2 Conformance requirement

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

1> revert back to the UTRA configuration;

NOTE: If configured for HS-DSCH while in UTRA, the UE will have still stored the IEs "Added or Reconfigured MAC-d flow" and "RB mapping Info".

…

1> transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

Reference(s)

TS 25.331 Clause 8.3.7.5.

8.3.7.15.3 Test purpose

To test that the UE reactivates the old configuration and uses this to transmit a HANDOVER FROM UTRAN FAILURE message to the network including IE "Inter-RAT Handover failure cause" which is set to "physical channel failure", when it receives an HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover can not be established.

To verify that UE stops using the HS-PDSCH configuration after receiving the HANDOVER FROM UTRAN COMMAND.

8.3.7.15.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports both CS and PS

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR with configuration [conversational/speech/uplink:12.2 DL:12.2 kbps/CS RAB + interactive/ background UL: 32kbps, DL :(max bit rate depending on UE category) PS RAB + uplink:3.4 DL3.4 kbps SRBs]. PS RAB is configured with HS-DSCH. SS activates a dedicated GSM traffic channel then sends HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. When the UE does not succeed in establishing the connection to the target radio access technology it shall revert back to UTRA configuration establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND transmit the HANDOVER FROM UTRAN FAILURE.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state and PS RAB with HS-DSCH active in cell 1.
2	SS			The SS configures a traffic channel on cell 9 (GSM cell).
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: The target channel for GSM FR in GSM Cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	SS			The target GSM Traffic Channel is Switched off
8	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration. The cause in the IE "inter-RAT change failure" is set to "physical channel failure"

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message	
- System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

8.3.7.15.5 Test requirement

After step 4 the SS shall receive HANDOVER FROM UTRAN FAILURE message using the old UTRA configuration. UE shall not resume HS-DSCH reception

8.3.7.16 Inter system handover from UTRAN/To GSM/Simultaneous CS and PS domain services/Success/TBF Establishment Success

8.3.7.16.1 Definition

8.3.7.16.2 Conformance requirement

The purpose of the inter-RAT handover procedure is to, under the control of the network, transfer a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH state. This procedure may be used when no RABs are established or when the established RABs are only in the CS domain or when the established RABs are in both CS and PS domains

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

…

For a UE in CELL_DCH state using both CS and PS Domain services the Inter-RAT handover procedure is based on measurement reports from the UE but initiated from UTRAN.

The UE performs the Inter-RAT handover from UTRA RRC Connected Mode to GSM Connected Mode first. When the UE has sent handover complete message to GSM / BSS the UE initiates a temporary block flow towards GPRS and sends a RA update request.

If the Inter-RAT handover from UTRA RRC Connected Mode to GSM Connected Mode was successful the handover is considered as successful regardless if the UE was able to establish a temporary block flow or not towards GPRS.

In case of Inter-RAT handover failure the UE has the possibility to go back to UTRA RRC Connected Mode and re-establish the connection in the state it originated from

Reference(s)

TS 25.331 Clause 8.3.7, B.6.1

8.3.7.16.3 Test purpose

To test that in UTRAN cell when UE is in speech call active state and PS data call is established, UE performs handover to GSM RAT(cell not supporting DTM) after receiving HANDOVER FROM UTRAN COMMAND.

8.3.7.16.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 9 is GPRS with BCCH. 51.010 clause 40.1.1 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9

Parameter	Unit	Cell 9 (GSM)
Qsearch_I (TDD)	dBm	15 (never)

UE: Registered Idle Mode on CS/PS (state 7) as specified in clause 7.4 of TS 34.108

Related ICS/IXIT statements

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Conversational /Speech UL: 12.2kbps DL: 12.2 kbps /CS RAB+ Interactive or Background UL: 64kbps DL: 64kbps /PS RAB + uplink: 3.4 DL: 3.4 kbps SRBs
- UE supports UE operation mode A: PS and CS simultaneously
- UE supports GPRS operation mode class B
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810

Foreseen final state of the UE

UE is in packet Idle mode on cell 9

Test Procedure

The SS brings the UE into call active state (CC state U10) with conversational/speech /uplink: 12.2 DL: 12.2 kbps/CS RAB + UL: 3.4 DL: 3.4 kbps SRBs. During call active state, SS configures PS RAB with Interactive or Background/UL: 64 kbps DL: 64 kbps configuration. The SS configures an appropriate traffic channel on the GSM cell. SS sends a HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell. SS receives GPRS SUSPENSION REQUEST from the UE.

SS disconnects the CS call and releases the RR connection.

Once RR connection is released, an RAU procedure is performed. To check that PDP context is active, SS sends MODIFY PDP CONTEXT REQUEST and assigns new QoS in GPRS cell. The UE may or may not accept the new QoS and replies to the SS accordingly.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	↔			The SS brings the UE into UTRAN U10 state in cell 1 with configuration: Conversational/Speech/uplink: 12.2 DL: 12.2 kbps/CS RAB + uplink: 3.4 DL: 3.4 kbps SRBs
2	↔		SS executes Procedure P19 (clause 7.4.2.8.1.2) specified in TS 34.108	Session Setup is initiated from UE side. PS RAB configuration is Interactive/Background UL: 64 kbps DL: 64 kbps/PS RAB + UL: 3.4kbps DL: 3.4kbps SRBs
3			SS	The SS configures a traffic channel on cell 9 for GSM FR
4	←		HANDOVER FROM UTRAN COMMAND	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM
5	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11	→		SABM	
12	←		UA	
13	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
14	→		GPRS SUSPENSION REQUEST	UE sends GPRS SUSPENSION REQUEST on FACCH. Suspension cause value is not checked
15	←		CHANNEL RELEASE	SS disconnects the CS call and releases the RR connection. The GPRS Resumption IE is included and is set to “resumption of GPRS services successfully acknowledged.”
15a	→		CHANNEL REQUEST	The SS receives this burst on the RACH of cell 9(GSM cell).
15b	←		IMMEDIATE ASSIGNMENT	Sent on AGCH.
16	→		ROUTING AREA UPDATE REQUEST	GMM “update type” = ‘combined RA/LA updating’
17	←		ROUTING AREA UPDATE ACCEPT	GMM. P-TMSI is included
18	→		ROUTING AREA UPDATE COMPLETE	
19	←		MODIFY PDP CONTEXT REQUEST	SS requests the modification of a PDP context, with a new QoS (peak throughput is changed to ‘0011’)
A20	→		MODIFY PDP CONTEXT ACCEPT	UE behaviour type A: Accept the PDP context modification
B20	→		DEACTIVATE PDP CONTEXT REQUEST	UE behaviour type B: Initiate the PDP context deactivation. Cause set to 'QoS not accepted'
B20a	←		DEACTIVATE PDP CONTEXT ACCEPT	UE behaviour type B: Accept the PDP context deactivation.
B20b	→		DETACH REQUEST	UE behaviour type B: A non-auto attach UE may (optionally) send a Detach Request. The SS shall wait up to 'T3390' seconds for the Detach Request.
B20c	←		DETACH ACCEPT	If the UE transmitted a Detach Request message in step B20b then the SS responds with a Detach Accept message.

Specific message contents

HANDOVER FROM UTRAN COMMAND (step 4)

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
RAB Info	
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T314
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	GSM message List
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING (1..512). The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate

8.3.7.16.5 Test requirements

At step 6 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 13 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

At step 16 SS receives ROUTING AREA UPDATE REQUEST message.

After step 19, SS should either receive DEACTIVATE PDP CONTEXT REQUEST message with cause as "QoS not accepted" or receive a MODIFY PDP CONTEXT ACCEPT message from UE.

8.3.7.17 Inter system handover from UTRAN/To GSM/DTM Support/Simultaneous CS and PS domain services/Success

8.3.7.17.1 Definition

8.3.7.17.2 Conformance requirement

The purpose of the inter-RAT handover procedure is to, under the control of the network, transfer a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH state. This procedure may be used when no RABs are established or when the established RABs are only in the CS domain or when the established RABs are in both CS and PS domains

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

…

For a UE in CELL_DCH state using both CS and PS Domain services the Inter-RAT handover procedure is based on measurement reports from the UE but initiated from UTRAN.

The UE performs the Inter-RAT handover from UTRA RRC Connected Mode to GSM Connected Mode first. When the UE has sent handover complete message to GSM / BSS the UE initiates a temporary block flow towards GPRS and sends a RA update request.

If the Inter-RAT handover from UTRA RRC Connected Mode to GSM Connected Mode was successful the handover is considered as successful regardless if the UE was able to establish a temporary block flow or not towards GPRS.

In case of Inter-RAT handover failure the UE has the possibility to go back to UTRA RRC Connected Mode and re-establish the connection in the state it originated from

…

The establishment of a packet resource is supported by procedures on the main DCCH when the mobile station is in dedicated mode. The procedures are only applicable to a mobile station supporting DTM with GPRS or EGPRS. The procedures are optional for the network.

These procedures constitute a complement to the corresponding procedures for temporary block flow establishment using CCCH or PCCCH while in idle mode defined in 3GPP TS 04.18 and 3GPP TS 04.60, respectively

…

While in dedicated mode, upper layers in the mobile station or in the network may request the transport of GPRS information transparently over the radio interface. This procedure is only applicable when:

- the information from upper layers is signalling information; and
- the GTTP length of the message is below the maximum indicated by the network.

In any other case, the RR procedures related to packet resource establishment while in dedicated mode apply.

The information from upper layers shall be carried inside the GTTP Information message. The GTTP Information message contains:

- the TLLI of the MS; and
- the LLC PDU.

The GTTP messages are sent using "normal" priority at the data link layer. Reference(s)

TS 25.331 Clause 8.3.7, B.6.1, TS 04.18 Clause 3.4.26

8.3.7.17.3 Test purpose

To verify that in UTRAN cell when UE (supporting DTM) is in speech call active state and PS data call is established, UE performs handover to GSM RAT after receiving HANDOVER FROM UTRAN COMMAND.

8.3.7.17.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 9 is GPRS with BCCH. 51.010 clause 40.1.1 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9

DTM support is indicated in SI6 for cell 9. MAX_LAPDm is set to 111.

UE: Registered Idle Mode on CS/PS (state 7) as specified in clause 7.4 of TS 34.108

Related ICS/IXIT statements

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Conversational /Speech UL: 12.2kbps DL: 12.2 kbps /CS RAB+ Interactive or Background UL: 64kbps DL: 64kbps /PS RAB + uplink: 3.4 DL: 3.4 kbps SRBs
- UE supports UE operation mode A: PS and CS simultaneously
- UE supports DTM
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810

Foreseen final state of the UE

UE is in CC state U10 and packet Idle mode on cell 9

Test Procedure

The SS brings the UE into call active state (CC state U10) with conversational/speech /uplink: 12.2 DL: 12.2 kbps/CS RAB + UL: 3.4 DL: 3.4 kbps SRBs. During call active state, SS configures PS RAB with Interactive or Background/UL: 64 kbps DL: 64 kbps configuration. The SS configures an appropriate traffic channel on the GSM cell. SS sends a HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell. The RAU procedure is performed.

To check that PDP context is active, SS sends MODIFY PDP CONTEXT REQUEST and assigns new QoS in GPRS cell. The UE may or may not accept the new QoS and replies to the SS accordingly.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	↔			The SS brings the UE into UTRAN U10 state in cell 1 with configuration: Conversational/Speech/uplink: 12.2 DL: 12.2 kbps/CS RAB + uplink: 3.4 DL: 3.4 kbps SRBs
2	↔		SS executes Procedure P19 (clause 7.4.2.8.1.2) specified in TS 34.108	Session Setup is initiated from UE side. PS RAB configuration is Interactive/Background UL: 64 kbps DL: 64 kbps/PS RAB + UL: 3.4kbps DL: 3.4kbps SRBs
3	↔		SS	The SS configures a traffic channel on cell 9 for GSM FR
4	←		HANDOVER FROM UTRAN COMMAND	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM
5	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11	→		SABM	
12	←		UA	
13	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
14	←		DTM INFORMATION	MAX_LAPDm set to 111.
15	→		GPRS INFORMATION	Contains the ROUTING AREA UPDATE REQUEST message.
16	←		GPRS INFORMATION	Contains the ROUTING AREA UPDATE ACCEPT message, reallocating the UEs P-TMSI to C2345678Hex.
17	→		GPRS INFORMATION	Contains the ROUTING AREA UPDATE COMPLETE message.
18	←		GPRS INFORMATION	Contains the MODIFY PDP CONTEXT REQUEST to request the modification of a PDP context, with a new QoS (peak throughput is changed to '0011')
A19	→		GPRS INFORMATION	Contains the MODIFY PDP CONTEXT ACCEPT to accept the PDP Context modification.
B19	→		GPRS INFORMATION	Contains the DEACTIVATE PDP CONTEXT REQUEST. Cause set to 'QoS not accepted'
B20	←		GPRS INFORMATION	Contains the DEACTIVATE PDP CONTEXT ACCEPT to accept the PDP context deactivation.
				Steps B21-B22 are optional
B21 (Optional)	→		GPRS INFORMATION	Contains the DETACH REQUEST. This is sent optionally by a non-auto attach UE. behaviour type B: The SS shall wait up to 'T3390' seconds for the DETACH REQUEST.
B22 (Optional)	←		GPRS INFORMATION	Contains the DETACH ACCEPT.

NOTE: The UE follows either branch A or B after step 18

Specific message contents

HANDOVER FROM UTRAN COMMAND (step 4)

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
RAB Info	
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T314
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	GSM message List
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING (1..512). The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.6.5.1 of TS 3GPP 51.010-1.

8.3.7.17.5 Test requirements

At step 6 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 13 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

At step 15 SS receives ROUTING AREA UPDATE REQUEST message.

After step 18, SS should either receive DEACTIVATE PDP CONTEXT REQUEST message with cause as “QoS not accepted” or receive a MODIFY PDP CONTEXT ACCEPT message from UE

8.3.8 Inter system cell reselection to UTRAN

[Editor's note: This test is FFS until R2000 core specification will be defined.]

8.3.9 Inter system cell reselection from UTRAN

If not specified differently in the individual tests of this group, the Contents of System Information Block type 12 (FDD) shall be as specified in the following table:

- FACH measurement occasion info	Not Present
- Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present Absence of this IE is equivalent to default value 1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal removeNoIntraFreqCells:	NULL
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	Not present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of 3GPP TS 34.108.
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present For neighbouring cell, if HCS is not used and all the parameters in cell selection and re-selection info are Default value, this IE is absent.
- Intra-frequency cell id	3
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4 of 3GPP TS 34.108.
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter coefficient	Not present Absence of this IE is equivalent to the default value 0
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH Reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronization information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronization information reporting indicator	TRUE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE

- Reporting quantities for detected set cells	Not Present
- Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	10 (1.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	2
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4 000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1b
- Triggering condition 1	Active set cells
- Triggering condition 2	Not Present
- Reporting Range Constant	10 (5 dB)
- Cells forbidden to affect Reporting range	Not Present
- W	10 (1.0)
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1c
- Triggering condition 1	Not Present
- Triggering condition 2	Not Present
- Reporting Range Constant	Not Present
- Cells forbidden to affect Reporting range	Not Present
- W	Not Present
- Hysteresis	0 (0.0)
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	3
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4 000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE Inter-frequency cell removal	Not present (This IE shall be ignored by the UE for SIB11)
- New inter-frequency cells	
- Inter frequency cell id	4
- Frequency info	
- CHOICE mode	FDD

- UARFCN uplink(Nu)	Not present Absence of this IE is equivalent to apply the default duplex distance defined for the operating frequency according to 3GPP TS 25.101 [11]
- UARFCN downlink(Nd)	Reference to table 6.1.2 of 3GPP TS 34.108 for Cell 4
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0 dB
- Reference time difference to cell	Not present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.4 (FDD)" in clause 6.1.4 of 3GPP TS 34.108.
- Primary CPICH Tx power	Not present
- TX Diversity Indicator	FALSE
- Cell Selection and Re-selection Info	Not present (same values as for serving cell applies)
- Inter frequency cell id	5
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not present. Absence of this IE is equivalent to apply the default duplex distance defined for the operating frequency according to 3GPP TS 25.101 [11]
- UARFCN downlink(Nd)	Reference to table 6.1.2 of 3GPP TS 34.108 for Cell 5
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.5 (FDD)" in clause 6.1.4 of 3GPP TS 34.108.
- Inter frequency cell id	6
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not present Absence of this IE is equivalent to apply the default duplex distance defined for the operating frequency according to 3GPP TS 25.101 [11]
- UARFCN downlink(Nd)	Reference to table 6.1.2 of 3GPP TS 34.108 for Cell 6
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.6 (FDD)" in clause 6.1.4
- Cell for measurement	Not present
- Inter-RAT measurement system information	Not Present
- Inter-RAT measurement system information	
- Inter-RAT cell info list	
- CHOICE Inter-RAT cell removal	Not Present (This IE shall be ignored by the UE for SIB11)
- New inter-RAT cells	
- Inter-RAT cell id	9
- CHOICE Radio Access Technology	GSM
- GSM	
- Cell individual offset	0 (0 dB)
- Cell selection and re-selection info	Not Present
- BSIC	
- Base transceiver Station Identity Code (BSIC)	Reference to table 6.1.10 of 3GPP TS 34.108. for Cell 9
- Band indicator	According to PICS/PIXIT
- BCCH ARFCN	Reference to table 6.1.10 of 3GPP TS 34.108. for Cell 9
- Inter-RAT cell id	10
- CHOICE Radio Access Technology	GSM
- GSM	
- Cell individual offset	0 (0 dB)
- Cell selection and re-selection info	Not Present

- BSIC - Base transceiver Station Identity Code (BSIC)	Reference to table 6.1.10 for Cell 10
- Band indicator	According to PICS/PIXITs
- BCCH ARFCN	Reference to table 6.1.10 of 3GPP TS 34.108. for Cell 10
- Cell for measurement	Not present

If not specified differently in the individual tests of this group, the Contents of System Information Block type 12 (1.28Mcps TDD) shall be as specified in the following table:

- FACH measurement occasion info	Not Present
- Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measureCell	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present Absence of this IE is equivalent to default value 1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present (This IE shall be ignored by the UE for SIB11)
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1.4 of 3GPP TS 34.108 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- CHOICE TDD option	
- 1.28 Mcps TDD	
- Timeslot number	Not Present
- Cell Selection and Re-selection info	Not Present (The IE shall be absent as this is the serving cell)
- Intra-frequency cell id	3
- Cell info	Same content as specified for intra-frequency cell id=2 with the exception that value for Cell Parameters ID shall be according to clause titled “Default settings for cell No.3(TDD)” in clause 6.1.4 of 3GPP TS 34.108
- Cell for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter coefficient	Not present Absence of this IE is equivalent to the default value 0
- CHOICE mode	TDD
- Measurement quantity list	
- Measurement quantity	P-CCPCH RSCP
- Intra-frequency reporting quantity for RACH Reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronization information reporting indicator	TRUE
- Cell identity reporting indicator	TRUE
- CHOICE mode	TDD
- Timeslot ISCP reporting indicator	FALSE
- Proposed TSGN reporting required	FALSE
- P-CCPCH RSCP reporting indicator	TRUE

- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronization information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	TDD
- Timeslot ISCP reporting indicator	FALSE
- Proposed TSGN reporting required	FALSE
- P-CCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not Present
- Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-CHOICE report criteria	
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	
- Intra-frequency event identity	1g
- Triggering condition1	Not Present
- Triggering condition2	Not Present
- Reporting Range Constant	Not Present
- cells forbidden to affect reporting range	Not Present
- W(optional in case of 1a,1b)	Not Present
- Hysteresis	0.0
- Threshold used frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cells	Report cell within active set and/or monitored cells on used frequency
- Maximum number of reported cells	3
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE Inter-frequency cell removal	Not present (This IE shall be ignored by the UE for SIB11)
- New inter-frequency cells	
- Inter frequency cell id	4
- Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to table 6.1.7 of 3GPP TS 34.108 for Cell 4
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	Not present
- Read SFN indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	Refer to clause titled "Default settings for cell No.4 (TDD)" in clause 6.1.4 of 3GPP TS 34.108
- Primary CCPCH Tx power	Not present
- TX Diversity Indicator	FALSE
- Cell Selection and Re-selection Info	Not present (same values as for serving cell applies)
- Inter frequency cell id	5
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Cell parameters ID shall be according to clause titled "Default settings for cell No.5 (TDD)" in clause 6.1.4 of 3GPP TS 34.108
- Inter frequency cell id	6

- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Cell parameters ID shall be according to clause titled "Default settings for cell No.6 (TDD)" in clause 6.1.4 of 3GPP TS 34.108
- Cell for measurement	Not present
- Inter-RAT measurement system information	
- Inter-RAT cell info list	
- CHOICE *Inter-RAT cell removal*	Not Present (This IE shall be ignored by the UE for SIB11)
- New inter-RAT cells	
- Inter-RAT cell id	9
- CHOICE *Radio Access Technology*	GSM
- GSM	
- Cell individual offset	0
- Cell selection and re-selection info	Not Present
- BSIC	
- Base transceiver Station Identity Code (BSIC)	Reference to table 6.1.10 of 3GPP TS 34.108 for Cell 9
- Band indicator	According to PICS/PIXIT
- BCCH ARFCN	Reference to table 6.1.10 of 3GPP TS 34.108 for Cell 9
- Inter-RAT cell id	10
- CHOICE *Radio Access Technology*	GSM
- GSM	
- Cell individual offset	0
- Cell selection and re-selection info	Not Present
- BSIC	
- Base transceiver Station Identity Code (BSIC)	Reference to table 6.1.10 of 3GPP TS 34.108 for Cell 10
- Band indicator	According to PICS/PIXITs
- BCCH ARFCN	Reference to table 6.1.10 of 3GPP TS 34.108 for Cell 10
- Cell for measurement	Not present
- Traffic volume measurement system information	Not Present

8.3.9.1 Cell reselection if cell becomes barred or S<0; UTRAN to GPRS (CELL_FACH)

8.3.9.1.1 Definition

Test to verify that if both a GSM/GPRS and UTRAN network is available, the UE performs cell reselection from UTRAN to GSM/GPRS if the UTRAN cell becomes barred or S falls below zero.

8.3.9.1.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH. When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall:

1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:

2> initiate the establishment of a connection to the target radio access technology according to its specifications.

3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:

1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.1.3 Test purpose

1. To verify that the UE performs reselection from UTRAN to GPRS in the state CELL_FACH on the following occasions:

   - Serving cell becomes barred.

   - S<0 for serving cell.

2. To verify when the UE has succeeded in reselecting a cell in the target radio access technology and has initiated the establishment of a connection, it shall release all UTRAN specific resources.

8.3.9.1.4 Method of test

Initial conditions

System Simulator: 3 cells – Cell 1 is UTRAN FDD, Cell 2 is GPRS and Cell 3 is GSM. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2. 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 3. When executing the test in FDD band II or FDD band VIII cell 1 shall use the low range UARFCN, defined in TS 34.108 clause 5.1.1. This is to avoid the FDD band overlapping with the GSM band under test.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 2 (GPRS) and Cell 3 (GSM).

The 3G Neighbour Cell Description of Cell 2 (GPRS) and Cell 3 (GSM) refers to Cell 1 (UTRAN).

UE: Power-Off (State 1) as specified in clause 7.4 of TS 34.108.

In SIB3 and SIB4 the IE "SsearchRAT", is set to value "20dB" in Cell 1 (UTRAN).

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,

- UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH,

- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm / 3.84 MHz	-60
P-CCPCH RSCP (TDD)	dBm	-60
Srxlev*	dB	19
CellBarred		Not barred

Parameter	Unit	Cell 2 (GPRS)
Test Channel		1
RF Signal Level	dBm	-75
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	25
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0

Parameter	Unit	Cell 3 (GSM)
Test Channel		2
RF Signal Level	dBm	-85
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	15
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0

Step d-f:

Parameter	Unit	Cell 1 (UTRAN)
CellBarred		Not barred -> Barred
Tbarred	S	80

Step i:

Parameter	Unit	Cell 1 (UTRAN)
CPICH Ec (FDD)	**dBm / 3.84 MHz**	**-60 -> -90**
P-CCPCH RSCP (TDD)	dBm	-60 -> -90
Srxlev*	dB	19 -> -11

Test procedure

a) The SS activates cells 1, 2, and 3. The SS monitors cells 1, 2 and 3 for random access requests from the UE.

b) The UE is switched on.

c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11). SS then sends SystemInformation Type 11 and 12 with FACH Measurement Occasions.

d) The SS sets Cell 1 to be barred.

e) The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.

f) The SS waits for channel request from the UE SS sends an IMMEDIATE ASSIGNMENT REJECT to bring the UE to idle mode..

g) The SS pages the UE with PAGING TYPE 2 in Cell 1 (UTRAN), if UE does not respond by transmitting an upper layer message to answer this page, it means UE has released the UTRAN resources.

h) The UE is switched off.

i) Step a-h) is repeated with the same initial conditions except that in step d) and e), the signal level is reduced, so S will become negative instead of being barred.

Specific Message Contents

RADIO BEARER SETUP (Step c)

Use the same message as specified for PS-DCCH+DTCH_FACH (state 6-11) in clause 7.4 of TS 34.108, except for the following:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 0001'

System Information Block type 11 (Step c)

Use the message type reference found in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	GSM

System Information Block type 12 (Step c)

Use the message type reference found in clause 8.3.9 of TS 34.123-1, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	GSM

8.3.9.1.5 Test Requirements

In step f), the UE shall respond on Cell 2

In step g), the UE shall not respond in UTRAN cell.

In step i), the UE shall respond on Cell 2 after the signal level is reduced.

8.3.9.1a Cell reselection if cell becomes barred or S<0; UTRAN to GPRS (CELL_FACH), 1.28Mcps TDD

8.3.9.1a.1 Definition

Test to verify that if both a GSM/GPRS and UTRAN network is available, the UE performs cell reselection from UTRAN to GSM/GPRS if the UTRAN cell becomes barred or S falls below zero.

8.3.9.1a.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH. When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall:

1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:

2> initiate the establishment of a connection to the target radio access technology according to its specifications.

3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:

1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.1a.3 Test purpose

1. To verify that the UE performs reselection from UTRAN to GPRS in the state CELL_FACH on the following occasions:

- Serving cell becomes barred.
- S<0 for serving cell.

2. To verify when the UE has succeeded in reselecting a cell in the target radio access technology and has initiated the establishment of a connection, it shall release all UTRAN specific resources.

8.3.9.1a.4 Method of test

Initial conditions

System Simulator: 3 cells – Cell 1 is UTRAN 1.28Mcps TDD, Cell 2 is GPRS and Cell 3 is GSM. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2. 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 3.

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 2 (GPRS) and Cell 3 (GSM).

The 3G Neighbour Cell Description of Cell 2 (GPRS) and Cell 3 (GSM) refers to Cell 1 (UTRAN).

UE: Power-Off (State 1) as specified in clause 7.4 of TS 34.108.

In SIB3 and SIB4 the IE "SsearchRAT", is set to value "20dB" in Cell 1 (UTRAN).

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
P-CCPCH RSCP (TDD)	dBm	-65
Srxlev*	dB	19
CellBarred		Not barred

Parameter	Unit	Cell 2 (GPRS)
Test Channel		1
RF Signal Level	dBm	-75
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	25
TDD_Qoffset	dBm	-60

Parameter	Unit	Cell 3 (GSM)
Test Channel		2
RF Signal Level	dBm	-85
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	15
TDD_Qoffset	dBm	-60

Step d-f:

Parameter	Unit	Cell 1 (UTRAN)
CellBarred		Not barred -> Barred
Tbarred	S	80

Step i:

Parameter	Unit	Cell 1 (UTRAN)
P-CCPCH RSCP (TDD)	dBm	-65 -> -95
Srxlev*	dB	19 -> -11

Test procedure

a) The SS activates cells 1, 2, and 3. The SS monitors cells 1, 2 and 3 for random access requests from the UE.

b) The UE is switched on.

c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11). SS then sends SystemInformation Type 11 and 12 with FACH Measurement Occasions.

d) The SS sets Cell 1 to be barred.

e) The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.

f) The SS waits for channel request from the UE SS sends an IMMEDIATE ASSIGNMENT REJECT to bring the UE to idle mode.

g) The SS pages the UE with PAGING TYPE 2 in Cell 1 (UTRAN), if UE does not respond by transmitting an upper layer message to answer this page, it means UE has released the UTRAN resources.

h) The UE is switched off.

i) Step a-h) is repeated with the same initial conditions except that in step d) and e), the signal level is reduced, so S will become negative instead of being barred.

Specific Message Contents

RADIO BEARER SETUP (Step c)

Use the same message as specified for PS-DCCH+DTCH_FACH (state 6-11) in clause 7.4 of TS 34.108, except for the following:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 0001'

System Information Block type 11 (Step c)

Use the message type reference found in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	GSM

System Information Block type 12 (Step c)

Use the message type reference found in clause 8.3.9 of TS 34.123-1, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	GSM

8.3.9.1a.5 Test Requirements

In step f), the UE shall respond on Cell 2

In step g), the UE shall not respond in UTRAN cell.

In step i), the UE shall respond on Cell 2 after the signal level is reduced.

8.3.9.2 Cell reselection if cell becomes barred or S<0; UTRAN to GPRS (URA_PCH)

8.3.9.2.1 Definition

Test to verify that if both a GSM/GPRS and UTRAN network is available, the UE performs cell reselection from UTRAN to GSM/GPRS if the UTRAN cell becomes barred or S falls below zero.

8.3.9.2.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH.

   When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall.

1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:

   2> initiate the establishment of a connection to the target radio access technology according to its specifications.

3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:

   1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.2.3 Test purpose

To verify that the UE performs reselection from UTRAN to GPRS in the state URA_PCH on the following occasions:

- Serving cell becomes barred.
- S<0 for serving cell.

8.3.9.2.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN FDD, Cell 9 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 9.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GPRS).

The 3G Neighbour Cell Description of Cell 9 (GPRS) refers to Cell 1 (UTRAN)

UE: Power-Off (State 1) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH,

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 9 (GPRS)
Test Channel		1
RF Signal Level	dBm	-80
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	20
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0

Step d-f:

Parameter	Unit	Cell 1 (UTRAN)
CellBarred		Not barred -> Barred
Tbarred	s	80

Step i:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-101 -> -41
Srxlev*	dB	41 -> -19

Test procedure

a) The SS activates cells 1 and 9. The SS monitors cells 1 and 9 for random access requests from the UE.

b) The UE is switched on.

c) The SS brings the UE to URA_PCH (State 6-13).

d) The SS sets Cell 1 to be barred.

e) The SS sends Paging Type1 message to UE to inform UE of the modification in the system information.

f) The SS waits for channel request from the UE to establish Temporary Block flow.

g) The SS pages the UE with PAGING TYPE 1 in cell 1 (UTRAN), if UE does not respond with Cell Update with cause 'Paging Response', it means UE has released the UTRAN resources.

h) The UE is switched off.

i) Step a-e) is repeated with the same initial conditions except that in step d), Qrxlevmin is increased, so S will become negative instead of being barred.

8.3.9.2.5 Test Requirements

In step f), the UE shall respond on Cell 9.

In step g), the UE shall not respond in UTRAN cell.

In step i), the UE shall respond on Cell 9 after Qrxlevmin is increased.

8.3.9.2a Cell reselection if cell becomes barred or S<0; UTRAN to GPRS (URA_PCH), 1.28Mcps TDD

8.3.9.2a.1 Definition

Test to verify that if both a GSM/GPRS and UTRAN network is available, the UE performs cell reselection from UTRAN to GSM/GPRS if the UTRAN cell becomes barred or S falls below zero.

8.3.9.2a.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH.

   When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall.

1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:

   2> initiate the establishment of a connection to the target radio access technology according to its specifications.

3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:

   1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.2a.3 Test purpose

To verify that the UE performs reselection from UTRAN to GPRS in the state URA_PCH on the following occasions:

- Serving cell becomes barred.
- S<0 for serving cell.

8.3.9.2a.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN 1.28Mcps TDD, Cell 9 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 9.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GPRS).

The 3G Neighbour Cell Description of Cell 9 (GPRS) refers to Cell 1 (UTRAN)

UE: Power-Off (State 1) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH,

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
P-CCPCH RSCP (TDD)	dBm	-65
Qrxlevmin	dBm	-106
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 9 (GPRS)
Test Channel		1
RF Signal Level	dBm	-80
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	20
TDD_Qoffset	dBm	-60

Step d-f:

Parameter	Unit	Cell 1 (UTRAN)
CellBarred		Not barred -> Barred
Tbarred	s	80

Step i:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-106 -> -46
Srxlev*	dB	41 -> -19

Test procedure

a) The SS activates cells 1 and 9. The SS monitors cells 1 and 9 for random access requests from the UE.

b) The UE is switched on.

c) The SS brings the UE to URA_PCH (State 6-13).

d) The SS sets Cell 1 to be barred.

e) The SS sends Paging Type1 message to UE to inform UE of the modification in the system information.

f) The SS waits for channel request from the UE to establish Temporary Block flow.

g) The SS pages the UE with PAGING TYPE 1 in cell 1 (UTRAN), if UE does not respond with Cell Update with cause 'Paging Response', it means UE has released the UTRAN resources.

h) The UE is switched off.

i) Step a-e) is repeated with the same initial conditions except that in step d), Qrxlevmin is increased, so S will become negative instead of being barred.

8.3.9.2a.5 Test Requirements

In step f), the UE shall respond on Cell 9.

In step g), the UE shall not respond in UTRAN cell.

In step i), the UE shall respond on Cell 9 after Qrxlevmin is increased.

8.3.9.3 Cell reselection if cell rank changes; UTRAN to GPRS (UE in CELL_FACH fails to complete an inter-RAT cell reselection)

8.3.9.3.1 Definition

8.3.9.3.2 Conformance requirement

If the inter-RAT cell reselection fails, the UE shall:

1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

References

TS 25.331, clause 8.3.9.4

8.3.9.3.3 Test purpose

To verify if the inter-RAT cell reselection fails before the UE in CELL_FACH succeeds in initiating the establishment of a connection to the GPRS cell, the UE shall:

- resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

8.3.9.3.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN, Cell 9 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 9.

All cells belong to the same PLMN.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GPRS).

The 3G Neighbour Cell Description of Cell 9 (GPRS) refers to Cell 1 (UTRAN)

UE: Power-Off (State 1) (UTRAN) as specified in clause 7.4 of TS 34.108.

[FDD] In SIB3 and SIB4 the IE "$S_{searchRAT}$", is set to value "20dB" in Cell 1 (UTRAN).

[TDD] In SIB3 and SIB4 the IE "$S_{searchRAT}$", is set to value "21dB" in Cell 1 (UTRAN).

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810.

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm/3.84MHz	-60
P-CCPCH RSCP (TDD)	dBm	-63
$Treselection_S$	s	5
R*	dB	-58
CellBarred		Not barred

Parameter	Unit	Cell 9 (GPRS)
Test Channel		1
RF Signal Level	dBm	-80
R*	dB	-80
CellBarred		barred

Step d:

Parameter	Unit	Cell 1 (UTRAN)
CPICH Ec (FDD)	dBm/3.84MHz	-60 -> -70
P-CCPCH RSCP (TDD)	dBm	-63 -> -70
R*	dB	-58 -> -68

Parameter	Unit	Cell 9 (GPRS)
RF Signal Level	dBm	-80 -> -50
C1*	dBm	20 -> 50
C32*	dB	20 -> 50
R*	dB	-80 -> -50
CellBarred		barred

Test procedure

a) The SS activates cells 1 and 9. The SS monitors cells 1and 9 for random access requests from the UE.

b) The UE is switched on.

c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11). SS then sends SystemInformation Type 11 and 12 with FACH Measurement Occasions.

d) The SS increases RF Signal Level of the GPRS Cell to -50 dBm and decreases the CPICH (FDD)/ P-CCPCH(TDD) of the UMTS cell to -70 dBm so that the ranking of the UMTS cell goes lower than the GPRS cell.

e) After the expiry of the timer Treselection, SS waits for 5 seconds to allow UE to read the system information for a GPRS cell and finds that the cell is barred. SS then sends SystemInformation Type 11 and 12 without FACH Measurement Occasions. Later SS calls for generic procedure C.2 in cell 1 (UTRAN) to check that UE is in CELL_FACH state. The UE resumes the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

f) The UE is switched off.

Specific Message Contents

RADIO BEARER SETUP (Step c)

Use the same message as specified for PS-DCCH+DTCH_FACH (state 6-11) in clause 7.4 of TS 34.108, except for the following:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 0001'

Contents of System Information Block type 11 (Step c)

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

- FACH measurement occasion info		
- FACH Measurement occasion cycle length coefficient		3
- Inter-frequency FDD measurement indicator		FALSE
- Inter-frequency TDD measurement indicator		FALSE
- Inter-RAT measurement indicators		
- RAT-Type		GSM

Contents of System Information Block type 12 (Step c)

Use the message type reference found in clause 8.3.9 of TS 34.123-1, with the following exceptions:

FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	
- **RAT-Type**	GSM

Contents of System Information Block type 11 (Step e, 1.28Mcps TDD)

Use the same message type found in clause 6.1.0b of TS 34.108, with the following exceptions:

- Inter-RAT measurement system information		Not Present

Contents of System Information Block type 12 (Step e, 1.28Mcps TDD)

Use the message type reference found in clause 8.3.9 of TS 34.123-1, with the following exceptions:

- Inter-RAT measurement system information	Not Present

8.3.9.3.5 Test Requirements

After step e, the UE remains in CELL_FACH in cell 1.

8.3.9.4 Cell reselection if S<0; UTRAN to GPRS (UE in CELL_PCH fails to complete an inter-RAT cell reselection)

8.3.9.4.1 Definition

8.3.9.4.2 Conformance requirement

If the inter-RAT cell reselection fails, the UE shall:

1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

References

TS 25.331, clause 8.3.9.4

8.3.9.4.3 Test purpose

To verify if the inter-RAT cell reselection fails before the UE in CELL_PCH succeeds in initiating the establishment of a connection to the GPRS cell, the UE shall:

- resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

8.3.9.4.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN FDD, Cell 9 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 9.

All cells belong to the same PLMN.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GPRS).

The 3G Neighbour Cell Description of Cell 9 (GPRS) refers to Cell 1 (UTRAN).

UE: Power-Off (State 1) (UTRAN) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480,

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
$Treselection_s$	s	5
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 9 (GPRS)
Test Channel		1
RF Signal Level	dBm	-80
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	20
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0
CellBarred		barred

Step d:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-101 -> -41
Srxlev*	dB	41 -> -19

Step f:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-41 -> -101
Srxlev*	dB	-19-> 41

Test procedure

a) The SS activates cells 1 and 9. The SS monitors cells 1and 9 for random access requests from the UE.

b) The UE is switched on.

c) The SS brings the UE to CELL_PCH (State 6-12).

d) The SS increases Qrxlevmin, so S will become negative.

e) The SS sends Paging Type 1 message to UE to inform UE of the modification in the system information.

f) The SS decreases Qrxlevmin, so S will become positive (After the expiry of the timer Treselection)

g) SS calls for generic procedure C.4 in cell 1 (UTRAN) to check that UE is in CELL_PCH state. The UE resumes the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure

8.3.9.4.5 Test Requirements

In step f, the UE remains in CELL_PCH in cell 1.

8.3.9.4a Cell reselection if S<0; UTRAN to GPRS (UE in CELL_PCH fails to complete an inter-RAT cell reselection), 1.28Mcps TDD

8.3.9.4a.1 Definition

8.3.9.4a.2 Conformance requirement

If the inter-RAT cell reselection fails, the UE shall:

1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

References

TS 25.331, clause 8.3.9.4

8.3.9.4a.3 Test purpose

To verify if the inter-RAT cell reselection fails before the UE in CELL_PCH succeeds in initiating the establishment of a connection to the GPRS cell, the UE shall:

- resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

8.3.9.4a.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN 1.28Mcps TDD, Cell 9 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 9.

All cells belong to the same PLMN.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GPRS).

The 3G Neighbour Cell Description of Cell 9 (GPRS) refers to Cell 1 (UTRAN).

UE: Power-Off (State 1) (UTRAN) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480,

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
P-CCPCH RSCP (TDD)	dBm	-65
Qrxlevmin	dBm	-106
$Treselection_S$	s	5
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 9 (GPRS)
Test Channel		1
RF Signal Level	dBm	-80
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	20
TDD_Qoffset	dBm	-60
CellBarred		barred

Step d:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-106 -> -46
Srxlev*	dB	41 -> -19

Step f:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-46 -> -106
Srxlev*	dB	-19-> 41

Test procedure

a) The SS activates cells 1 and 9. The SS monitors cells 1and 9 for random access requests from the UE.

b) The UE is switched on.

c) The SS brings the UE to CELL_PCH (State 6-12).

d) The SS increases Qrxlevmin, so S will become negative.

e) The SS sends Paging Type 1 message to UE to inform UE of the modification in the system information.

f) The SS decreases Qrxlevmin, so S will become positive (After the expiry of the timer Treselection)

g) SS calls for generic procedure C.4 in cell 1 (UTRAN) to check that UE is in CELL_PCH state. The UE resumes the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure

8.3.9.4a.5 Test Requirements

In step f, the UE remains in CELL_PCH in cell 1.

8.3.9.5 Successful Cell Reselection with RAU – Q_{offset} value modification; UTRAN to GPRS (CELL_FACH)

8.3.9.5.1 Definition

8.3.9.5.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH.

   When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall.

   1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:

      2> initiate the establishment of a connection to the target radio access technology according to its specifications.

3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:

   1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.5.3 Test purpose

To verify that the UE performs reselection correctly considering the Q_{offset} value broadcast in SIB 11.

8.3.9.5.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN FDD, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 2 (GPRS).

The 3G Neighbour Cell Description of Cell 2 (GPRS) refers to Cell 1 (UTRAN).

UE: Power-Off (State 1) as specified in clause 7.4 of TS 34.108.

In SIB3 and SIB4 the IE "SsearchRAT", is set to value "20dB" in Cell 1 (UTRAN).

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
Srxlev*	dB	41
CellBarred		Not barred

Parameter	Unit	Cell 2 (GPRS)
Test Channel		1
RF Signal Level	dBm	-70
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	30
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	16

Step d:

Parameter	Unit	Cell 1 (UTRAN)
$Qoffset1_{s,n}$	dBm	-25

Test procedure

a) The SS activates cells 1 and 2. The SS monitors cells 1and 2 for random access requests from the UE.

b) The UE is switched on.

c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11). SS then sends SystemInformation Type 11 and 12 with FACH Measurement Occasions.

d) Q_{offset} value is modified at UTRAN such that it makes the GSM cell look the best.

e) The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.

f) Void.

g) The SS monitors for random access requests from the UE.

h) The SS pages the UE with PAGING TYPE 2 and PAGING TYPE 1 messages in Cell 1 (UTRAN), if UE does not respond by transmitting an upper layer message to answer this page, it means UE has released the UTRAN resources.

Specific Message Contents

RADIO BEARER SETUP (Step c)

Use the same message as specified for PS-DCCH+DTCH_FACH (state 6-11) in clause 7.4 of TS 34.108, except for the following:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 0001'

System Information Block type 11 (Step c)

Use the message type reference found in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	GSM

System Information Block type 12 (Step c)

Use the message type reference found in clause 8.3.9 of TS 34.123-1, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	GSM

8.3.9.5.5 Test Requirements

In step g), the UE shall respond on Cell 2 and enter PACKET TRANSFER mode after performing the routing area update procedure.

In step h), the UE shall not respond in UTRAN cell.

8.3.9.5a Successful Cell Reselection with RAU – Q_{offset} value modification; UTRAN to GPRS (CELL_FACH), 1.28Mcps TDD

8.3.9.5a.1 Definition

8.3.9.5a.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH.

   When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall.

   1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:

      2> initiate the establishment of a connection to the target radio access technology according to its specifications.

3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:

   1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.5a.3 Test purpose

To verify that the UE performs reselection correctly considering the Q_{offset} value broadcast in SIB 11.

8.3.9.5a.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN 1.28Mcps TDD, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 2 (GPRS).

The 3G Neighbour Cell Description of Cell 2 (GPRS) refers to Cell 1 (UTRAN).

UE: Power-Off (State 1) as specified in clause 7.4 of TS 34.108.

In SIB3 and SIB4 the IE "SsearchRAT", is set to value "20dB" in Cell 1 (UTRAN).

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
P-CCPCH RSCP (TDD)	dBm	-65
Qrxlevmin	dBm	-106
Srxlev*	dB	41
CellBarred		Not barred

Parameter	Unit	Cell 2 (GPRS)
Test Channel		1
RF Signal Level	dBm	-70
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	30
TDD_Qoffset	dBm	-60

Step d:

Parameter	Unit	Cell 1 (UTRAN)
$Qoffset1_{s,n}$	dBm	-25

Test procedure

a) The SS activates cells 1 and 2. The SS monitors cells 1and 2 for random access requests from the UE.

b) The UE is switched on.

c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11). SS then sends SystemInformation Type 11 and 12 with FACH Measurement Occasions.

d) Q_{offset} value is modified at UTRAN such that it makes the GSM cell look the best.

e) The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.

f) Void.

g) The SS monitors for random access requests from the UE.

h) The SS pages the UE with PAGING TYPE 2 and PAGING TYPE 1 messages in Cell 1 (UTRAN), if UE does not respond by transmitting an upper layer message to answer this page, it means UE has released the UTRAN resources.

Specific Message Contents

RADIO BEARER SETUP (Step c)

Use the same message as specified for PS-DCCH+DTCH_FACH (state 6-11) in clause 7.4 of TS 34.108, except for the following:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 0001'

System Information Block type 11 (Step c)

Use the message type reference found in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	GSM

System Information Block type 12 (Step c)

Use the message type reference found in clause 8.3.9 of TS 34.123-1, with the following exceptions:

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	3
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	GSM

8.3.9.5a.5 Test Requirements

In step g), the UE shall respond on Cell 2 and enter PACKET TRANSFER mode after performing the routing area update procedure.

In step h), the UE shall not respond in UTRAN cell.

8.3.10 Void

8.3.11 Inter-RAT cell change order from UTRAN

8.3.11.1 Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Success

8.3.11.1.1 Definition

8.3.11.1.2 Conformance requirement

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

1> the UE behaviour is not specified.

The UE shall:

1> start timer T309; and

1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the

target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

1> stop timer T309;

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

Reference(s)

TS 25.331 clause 8.3.11, B.6

8.3.11.1.3 Test purpose

To test that the UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and perform a cell change to another RAT, even if no prior UE measurements have been performed on the target cell. The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

8.3.11.1.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

Cell 1- SIB 1 T309 set to 8 seconds (see specific message contents)

UE: PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810

Test Procedure

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_DCH (State 6-10). The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a RA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS-DCCH+DTCH_DCH (State 6-10) in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GPRS.
4	UE			The UE accepts the cell change command and switches to the GPRS cell specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on the RACH of cell 2 to establish temporary block flow (GPRS cell). It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT	Uplink dynamic allocation. Sent on AGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
T309	8 Sec

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	NOT PRESENT

8.3.11.1.5 Test requirement

After step 3 the UE shall transmit a CHANNEL REQUEST message on RACH.

8.3.11.1a Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Success with UEA2/UIA2, GEA2 ciphering

8.3.11.1a.1 Definition

This test case is specified for the Rel-7 (or later) UE in the interRAT cell change order from UTRAN to GERAN. UIA2/UEA2 are applied in the UTRAN cell and GEA2 is applied in the GERAN cell.

8.3.11.1a.2 Conformance requirement

Identical to 8.3.11.1.2

8.3.11.1a.3 Test purpose

Identical to 8.3.11.1.3 but in the UTRAN cell UIA2/UEA2 are applied, and in the GERAN cell GEA2 is applied

8.3.11.1a.4 Method of test

Identical to 8.3.11.1.4.

Specific message contents

Similar to the specific message contents in 8.3.11.1.4 but instead, the Rel-7 IEs are used, also the UE capability to support UEA2/UIA2 and GEA2 are checked.

8.3.11.1a.5 Test requirement

Identical to 8.3.11.1.5

8.3.11.1b Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Success with UEA2/UIA2 and GEA3 ciphering

8.3.11.1b.1 Definition

This test case is specified for the Rel-7 (or later) UE in the interRAT cell change order from UTRAN to GERAN. UIA2/UEA2 are applied in the UTRAN cell and GEA3 is applied in the GERAN cell.

8.3.11.1b.2 Conformance requirement

Identical to 8.3.11.1.2

8.3.11.1b.3 Test purpose

Identical to 8.3.11.1.3 but in the UTRAN cell UIA2/UEA2 are applied, and in the GERAN cell GEA3 is applied.

8.3.11.1b.4 Method of test

Identical to 8.3.11.1.4,.

Specific message contents

Similar to the specific message contents in 8.3.11.1.4 but instead, the Rel-7 IEs are used, also the UE capability to support UEA2/UIA2 and GEA3 are checked.

8.3.11.1b.5 Test requirement

Identical to 8.3.11.1.5

8.3.11.2 Inter-RAT cell change order from UTRAN/To GPRS/CELL_FACH/Success

8.3.11.2.1 Definition

8.3.11.2.2 Conformance requirement

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in

CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

1> the UE behaviour is not specified.

The UE shall:

1> start timer T309; and

1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

1> stop timer T309;

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

Reference(s)

TS 25.331 clause 8.3.11, B.6

8.3.11.2.3 Test purpose

To test that the UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state and perform a cell change to another RAT, even if no prior UE measurements have been performed on the target cell. The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a CHANNEL REQUEST in the new cell.

8.3.11.2.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Test Procedure

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_FACH (state 6-11). The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a RA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS-DCCH_DTCH_FACH (State 6-11) in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GPRS.
4	UE			The UE accepts the cell change command and switches to the GPRS specified in the CELL CHANGE ORDER FROM UTRAN
5	→		PACKET CHANNEL REQUEST	The SS receives this burst on PRACH of cell 2 (GPRS cell) to establish temporary block flow. It implies that the UE has switched to GPRS cell.
6	←		PACKET UPLINK ASSIGNMENT	Uplink dynamic allocation Sent on PAGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	NOT PRESENT

8.3.11.2.5 Test requirement

After step 3 the UE shall transmit a CHANNEL REQUEST message on RACH.

8.3.11.3 Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Failure (T309 expiry)

8.3.11.3.1 Definition

8.3.11.3.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:

2> revert back to the UTRA configuration;

2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

2> if the UE does not succeed in establishing the UTRA physical channel(s):

3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";

3> when the cell update procedure has completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.3.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and if the establishment of the connection to the other RAT failed due to expiry of timer T309 prior to the successful establishment of a connection to the target RAT:

a. revert back to the UTRA configuration;

b. establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

c. transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

8.3.11.3.4 Method of test

Initial conditions

System Simulator: 3 cells - Cells 1 and 3 are UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

UE: PS-DCCH_DCH (State 6-7) in cell 1 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,

- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480,

Test Procedure

The SS starts the UTRAN cell and brings the UE into state PS-DCCH_DCH (State 6-7). The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. The UE starts the timer T309. After the UE receives the command it shall configure itself accordingly but cannot complete the cell change, as SS does not respond to the CHANNEL REQUEST message transmitted by UE till the expiry of T309 timer. The SS checks that the cell change has failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into PS-DCCH _DCH (State 6-7) in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GSM/GPRS.
4	UE			UE starts the timer T309. The UE accepts the cell change command and switches to the GPRS specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on RACH of cell 2 (GPRS cell) to establish temporary block flow
6	→			SS does not respond to the channel request. UE sends M + 1 CHANNEL REQUEST messages
				The SS does not transmit a response and wait for T309 timer to expire. Upon expiry of T309 the UE shall start timer T3311 and shall perform ROUTING AREA UPDATE. The UE shall perform ROUTING AREA UPDATE also when a new cell 3 is entered.
7	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell 1.

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	Not present

CELL CHANGE ORDER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink CELL CHANGE ORDER FROM UTRAN message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT change failure	
-Inter-RAT change failure cause	physical channel failure

8.3.11.3.5 Test requirement

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 7 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.11.4 Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Failure (Physical channel Failure and Reversion Failure)

8.3.11.4.1 Definition

8.3.11.4.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:

2> revert back to the UTRA configuration;

2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

2> if the UE does not succeed in establishing the UTRA physical channel(s):

3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";

3> when the cell update procedure has completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.4.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

a. revert back to the UTRA configuration;

b. if the UE does not succeed in establishing the UTRA physical channel(s):

- perform a cell update procedure with cause "Radio link failure";

c. when the cell update procedure is completed successfully, it transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

8.3.11.4.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

NOTE: The 'timer poll' value in the SS RLC transmit entity should be set to 800 ms.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810

Test Procedure

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_DCH (state 6-10). The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but cannot complete the cell change and wants to revert to the old configuration, but the UE cannot revert to the old configuration because the SS shall not use the old configuration. The UE transmits CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits the CELL CHANGE ORDER FAILURE message to the SS in UTRAN cell, on the DCCH using AM RLC, setting the value of IE " Inter-RAT change failure " to " physical channel failure".

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS-DCCH+DTCH_DCH (State 6-10) in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GSM/GPRS.
3a	SS			SS removes the physical channel (DPCH), which was allocated to the mobile before Cell Change Order From UTRAN transmission
4	UE			The UE accepts the cell change command and switches to the GSM/GPRS specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on RACH of cell 2 (GPRS cell) to establish temporary block flow. It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT REJECT	SS rejects the channel request
7			VOID	
8	→		CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
9	←		CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
10				The SS configure the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
11	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
12	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The IE "Inter-RAT failure cause" shall be set to "physical channel failure"
13				Note: The UE may send a ROUTING AREA UPDATE REQUEST to complete the RA Update procedure initiated at step 5.

Specific message contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	Not present

CELL UPDATE (Step 8)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 9) (FDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark	Version
U-RNTI	Same as CELL UPDATE message in step 3	
RRC State indicator	CELL_DCH	
Frequency info		
- UARFCN uplink (Nu)	Reference to TS34.108 clause 5.1 Test frequencies	
- UARFCN downlink (Nd)	Reference to TS34.108 clause 5.1 Test frequencies	
Maximum allowed UL TX power	33dBm	
CHOICE channel requirement	Uplink DPCH info	
- Uplink DPCH power control info		
- DPCCH power offset	-40 (-80 dB)	
- PC Preamble	1 frame	
- SRB delay	7 frames	
- Power Control Algorithm	Algorithm1	
- TPC step size	0 (1 dB)	
- Scrambling code type	Long	
- Scrambling code number	0	
- Number of DPDCH	Not Present	
- spreading factor	Reference to TS34.108 clause 6.10 Parameter Set	
- TFCI existence	TRUE	
- Number of FBI bit	Not present	
- Puncturing Limit	pl0-96	
Downlink information common for all radio links		
- Downlink DPCH info common for all RL		
- Timing indicator	Initialise	
- CFN-targetSFN frame offset	Not Present	
- Downlink DPCH power control information		
- DPC mode	0 (single)	
- CHOICE mode	FDD	
- Power offset $P_{Pilot-DPDCH}$	0	
- DL rate matching restriction information	Not Present	
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set	
- Fixed or Flexible Position	flexible	
- TFCI existence	TRUE	
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set	
- DPCH compressed mode info	Not Present	
- TX Diversity mode	None	
- SSDT information	Not Present	R99 and Rel-4 only
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512.	
Downlink information for each radio links		
CHOICE Mode	FDD	
- Primary CPICH info		
- Primary scrambling code	100	
- PDSCH with SHO DCH info	Not Present	R99 and Rel-4 only
- PDSCH code mapping	Not Present	R99 and Rel-4 only
- Downlink DPCH info for each RL		
- Primary CPICH usage for channel estimation	Primary CPICH may be used	
- DPCH frame offset	Set to value : Default DPCH Offset Value (as set above) mod 38400	
- Secondary CPICH info	Not Present	
- DL channelisation code		
- Secondary scrambling code	2	
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set	
- Code number	SF-1 (SF is reference to TS34.108 clause 6.10 Parameter Set)	

- Scrambling code change	No change	
- TPC combination index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Closed loop timing adjustment mode	Not Present	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

CELL UPDATE CONFIRM (Step 9) (3.84 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark	Version
U-RNTI	Same as CELL UPDATE message in step 3	
RRC State indicator	CELL_DCH	
Frequency info		
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies	
Maximum allowed UL TX power	33dBm	
CHOICE channel requirement	Uplink DPCH info	
- Uplink DPCH power control info		
- CHOICE *mode*	TDD	
- UL target SIR	12 (6 dB)	
- CHOICE *UL OL PC info*	Broadcast UL OL PC info	
- CHOICE *mode*	TDD	
- UL CCTrCH List	1	
- UL target SIR	12 (6 dB)	
- Time info		
- Activation time	Now	
- Duration	Infinite	
Downlink information common for all radio links		
- Downlink DPCH info common for all RL		
- Timing indication	Initialise	
- CFN-targetSFN frame offset	Not Present	
- Downlink DPCH power control information		
- CHOICE mode	TDD (No Data)	
- CHOICE mode	TDD (No Data)	
- CHOICE *mode*	TDD	
- CHOICE *TDD option*	3.84 Mcps TDD (No Data)	
- Default DPCH Offset Value	Set to value: Default DPCH Offset Value (as currently stored in SS) mod 38400	
Downlink information for each radio links		
- CHOICE Mode	TDD	
- Primary CCPCH info		
- CHOICE Mode	TDD	
- CHOICE *TDD option*	3.84 Mcps TDD	
- CHOICE *SyncCase*	Sync Case 1	
- Timeslot	0	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL		
- CHOICE *mode*	TDD	
- DL CCTrCh List		
- TFCS ID	1	
- Time info		
- Activation time	Now	
- Duration	Infinite	
- Common timeslot info	Default	
- Downlink DPCH timeslots and codes	Default	
- UL CCTrCH TPC List	Default	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

CELL UPDATE CONFIRM (Step 9) (1.28 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark	Version
U-RNTI	Same as CELL UPDATE message in step 3	
RRC State indicator	CELL_DCH	
Frequency info		
- UARFCN uplink (Nu)	Reference to TS34.108 clause 5.1 Test frequencies	
- UARFCN downlink (Nd)	Reference to TS34.108 clause 5.1 Test frequencies	
Maximum allowed UL TX power	33dBm	
CHOICE channel requirement	Uplink DPCH info	
- Uplink DPCH power control info		
- CHOICE *mode*	TDD	
- UL target SIR	12 (6 dB)	
- CHOICE *UL OL PC info*	Individually Signalled	
- CHOICE *TDD option*	1.28 Mcps TDD	
- TPC step size	0 (1 dB)	
- UL CCTrCH List	1	
- UL target SIR	12 (6 dB)	
- Time info		
- Activation time	Now	
- Duration	Infinite	
Downlink information common for all radio links		
- Downlink DPCH info common for all RL		
- Timing indicator	Initialise	
- CFN-targetSFN frame offset	Not Present	
- Downlink DPCH power control information		
- CHOICE mode	TDD (NoData)	
- CHOICE mode	TDD (NoData)	
- CHOICE *mode*	TDD	
- CHOICE *TDD option*	1.28 Mcps TDD	
- TSTD indicator	FALSE	
- Default DPCH Offset Value	Set to value: Default DPCH Offset Value (as currently stored in SS) mod 38400	
Downlink information for each radio links		
- CHOICE Mode	TDD	
- Primary CCPCH info		
- CHOICE Mode	TDD	
- CHOICE *TDD option*	1.28 Mcps TDD	
- TSTD indicator	FALSE	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL		
- CHOICE *mode*	TDD	
- DL CCTrCh List		
- TFCS ID	1	
- Time info		
- Activation time	Now	
- Duration	Infinite	
- Common timeslot info	Default	
- Downlink DPCH timeslots and codes	Default	
- UL CCTrCH TPC List	Default	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

CELL UPDATE CONFIRM (Step 9) (3.84 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark	Version
U-RNTI	Same as CELL UPDATE message in step 3	
RRC State indicator	CELL_DCH	
Frequency info		
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies	
Maximum allowed UL TX power	33dBm	
CHOICE channel requirement	Uplink DPCH info	
- Uplink DPCH power control info		
- CHOICE *mode*	TDD	
- UL target SIR	12 (6 dB)	
- CHOICE *UL OL PC info*	Broadcast UL OL PC info	
- CHOICE *mode*	TDD	
- UL CCTrCH List	1	
- UL target SIR	12 (6 dB)	
- Time info		
- Activation time	Now	
- Duration	Infinite	
Downlink information common for all radio links		
- Downlink DPCH info common for all RL		
- Timing indication	Initialise	
- CFN-targetSFN frame offset	Not Present	
- Downlink DPCH power control information		
- CHOICE mode	TDD (No Data)	
- CHOICE mode	TDD (No Data)	
- CHOICE *mode*	TDD	
- CHOICE *TDD option*	7.68 Mcps TDD (No Data)	
- Default DPCH Offset Value	Not Present	
Downlink information for each radio links		
- CHOICE Mode	TDD	
- Primary CCPCH info		
- CHOICE Mode	TDD	
- CHOICE *TDD option*	7.68 Mcps TDD	
- CHOICE *SyncCase*	Sync Case 1	
- Timeslot	0	
- SCTD indicator	FALSE	
- Downlink DPCH info for each RL		
- CHOICE *mode*	TDD	
- DL CCTrCh List		
- TFCS ID	1	
- Time info		
- Activation time	Now	
- Duration	Infinite	
- Common timeslot info	Default	
- Downlink DPCH timeslots and codes VHCR	Default	
- UL CCTrCH TPC List	Default	
- SCCPCH information for FACH	Not Present	R99 and Rel-4 only

CELL CHANGE ORDER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink CELL CHANGE ORDER FROM UTRAN message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT change failure	
-Inter-RAT change failure cause	physical channel failure

8.3.11.4.5 Test requirement

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 8 the SS shall receive CELL UPDATE message on the old channel of the UTRAN cell with the IE "Cell update cause" set to cause " radio link failure ".

In step 11 the SS shall receive PHYSICAL CHANNEL COMPLETE message.

In step 12 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message with the IE " Inter-RAT change failure cause" set to "physical channel failure".

8.3.11.5 Inter-RAT cell change order from UTRAN/To GPRS/CELL_FACH/Failure (T309 expiry)

8.3.11.5.1 Definition

8.3.11.5.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:

2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

2> if the UE is unable to return to this cell:

3> select a suitable UTRA cell according to [4];

3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";

3> when the cell update procedure completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

3> the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.5.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state and if the establishment of the connection to the other RAT failed due to expiry of timer T309 prior to the successful establishment of a connection to the target RAT:

a. revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

b. transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

8.3.11.5.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

UE: PS-DCCH+DTCH_FACH (State 6-11) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480,

Test Procedure

The SS starts the UTRAN cell and brings the UE into PS_DCCH+DTCH_FACH (state 6-11). The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. The UE starts the timer T309. After the UE receives the command it shall configure itself accordingly but cannot complete the cell change, as SS does not respond to the Channel Request message transmitted by UE till the timer T309 expires. The SS checks that the cell change has failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into PS-DCCH+DTCH_FACH (State 6-11) in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GSM/GPRS.
4	UE			The UE accepts the cell change command and switches to the GSM/GPRS specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on RACH of cell 2 (GPRS cell) to establish temporary block flow
6	→			SS does not respond to the channel request. UE transmits CHANNEL REQUEST message M+1 times.
				The SS does not transmit a response and wait for T309 timer to expire.
7	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2 BSIC of Cell 3
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2 Allocated BCCH ARFCN of Cell 3
- NC mode	Not present

CELL CHANGE ORDER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink CELL CHANGE ORDER FROM UTRAN message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT change failure	
-Inter-RAT change failure cause	physical channel failure

8.3.11.5.5 Test requirement

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 7 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.11.6 Inter-RAT cell change order from UTRAN/To GPRS/CELL_FACH/Failure (Physical channel Failure and Reversion Failure)

8.3.11.6.1 Definition

8.3.11.6.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:

2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

2> if the UE is unable to return to this cell:

3> select a suitable UTRA cell according to [4];

3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";

3> when the cell update procedure completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

3> the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.6.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state and if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

a. revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

b. if the UE is unable to return to this cell:

- select a suitable UTRA cell;

c. initiate the cell update procedure using the cause "cell re-selection";

d. when the cell update procedure is completed successfully, it transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

8.3.11.6.4 Method of test

Initial conditions

System Simulator: 3 cells - Cell 1, Cell 2 are UTRAN, Cell 3 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 3.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

UE: PS-DCCH+DTCH_FACH (State 6-11) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,

- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,

- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480,

Test Procedure

Table 8.3.11.6

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Mid Range Test Frequency		Mid Range Test Frequency	
CPICH Ec (FDD)	dBm/3.84MHz	-60	Off	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	Off	-75	-60

Table 8.3.11.6 illustrates the downlink power to be applied for the 2 UTRAN cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_FACH (state 6-11). The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but cannot complete the cell change and wants to revert to the old configuration, but the UE cannot revert to the old configuration because the SS shall not use the old configuration. The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.11.6. The UE transmits CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits the CELL CHANGE ORDER FAILURE message to the SS in UTRAN cell, on the DCCH using AM RLC, setting the value of IE " Inter-RAT change failure " to " physical channel failure".

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into PS-DCCH+DTCH_FACH (State 6-11) in cell 1
2	SS			The SS configures cell 3 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: The target cell description for GSM/GPRS.
3a	SS			The SS applies the downlink transmission power settings, the values in columns "T1" of table 8.3.11.6.
4	UE			The UE accepts the cell change command and switches to the GSM/GPRS specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on the traffic channel of cell 2 (GPRS cell) to establish temporary block flow It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT REJECT	SS rejects the channel request
7			VOID	
8			VOID	
9	→		CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
10	←		CELL UPDATE CONFIRM	See message content.
11	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The IE "Inter-RAT failure cause" shall be set to "physical channel failure"

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC1
- Band Indicator	DCS 1800 band used
- BCCH ARFCN	1
- NC mode	Not present

CELL UPDATE (Step 8)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"cell reselection"

CELL UPDATE CONFIRM (Step 9)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS 34.108, clause 9

CELL CHANGE ORDER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink CELL CHANGE ORDER FROM UTRAN message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT change failure	
-Inter-RAT change failure cause	physical channel failure

8.3.11.6.5 Test requirement

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 9 the SS shall receive CELL UPDATE message on the old channel of the UTRAN cell with the IE “Cell update cause” set to cause “ cell reselection “.

In step 11 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message with the IE “ Inter-RAT change failure cause” set to “physical channel failure”.

8.3.11.7 Inter-RAT cell change order from UTRAN/To GPRS/ Failure (Unsupported configuration)

8.3.11.7.1 Definition

8.3.11.7.2 Conformance requirement

If the UTRAN instructs the UE to perform a non-supported cell change order scenario or to use a non-supported configuration, the UE shall:

1> transmit a CELL CHANGE ORDER FROM UTRAN FAILURE message, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT change failure" to "configuration unacceptable";

2> when the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:

3> resume normal operation as if the CELL CHANGE ORDER FROM UTRAN message has not been received;

3> and the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.7.3 Test purpose

To verify if the UTRAN instructs the UE to perform a non-supported cell change order or to use a non-supported configuration, the UE shall:

a. Transmit a CELL CHANGE ORDER FROM UTRAN FAILURE message, setting the IE "Inter-RAT change failure" to "configuration unacceptable";

b. Resume normal operation

8.3.11.7.4 Method of test

Initial conditions

System Simulator : 1 UTRAN cell

UE : PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480,

Test Procedure

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_DCH (state 6-10). The SS then sends a CELL CHANGE ORDER FROM UTRAN message including a Configuration not Supported by the UE, to the UE through DCCH of the serving UTRAN cell. The UE receives the command and finds that the configuration given in cell change

message is not supported. The SS checks that the cell change is failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell with the IE "Inter-RAT change failure" set to "configuration unsupported".

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS-DCCH+DTCH_DCH (State 6-10) in cell 1
2	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message carries an unsupported configuration. Cell change order to a Band not supported by the UE
3	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	Contains a Configuration not supported By the UE (Cell change order to a Band not supported by the UE)

CELL CHANGE ORDER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink CELL CHANGE ORDER FROM UTRAN message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT change failure	
-Inter-RAT change failure cause	configuration unsupported

8.3.11.7.5 Test requirement

In step 3 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.11.8 Inter-RAT cell change order from UTRAN/To GPRS/ Failure (Invalid Inter-RAT message)

8.3.11.8.1 Definition

8.3.11.8.2 Conformance requirement

If the CELL CHANGE ORDER FROM UTRAN message contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

1> set the IE "RRC transaction identifier" in the CELL CHANGE ORDER FROM UTRAN FAILURE message to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Rejected transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> set the IE "Inter-RAT change failure" to the cause value "protocol error";

1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION;

1> transmit a CELL CHANGE ORDER FROM UTRAN FAILURE message on the uplink DCCH using AM RLC;

1> when the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:

2> resume normal operation as if the invalid CELL CHANGE ORDER FROM UTRAN message has not been received;

2> and the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.8.3 Test purpose

To verify that the UE shall keep its old configuration and transmit a CELL CHANGE ORDER FROM UTRAN FAILURE message, with the "Inter-RAT change failure" set to "protocol error", when it receives a CELL CHANGE ORDER FROM UTRAN message, not including a valid message in accordance with the protocol specifications for the target RAT.

8.3.11.8.4 Method of test

Initial conditions

System Simulator: 1 UTRAN cell

UE: PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480,

Test Procedure

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_DCH (state 6-10). The SS then sends a CELL CHANGE ORDER FROM UTRAN message not including a valid cell change order from UTRAN message in accordance with the protocol specifications for the target RAT, to the UE through DCCH of the serving UTRAN cell. The UE receives the command and finds that the cell change order message is Invalid. The SS checks that the cell change is failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell with the IE “Inter-RAT change failure cause” set to “protocol error”.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into PS-DCCH+DTCH_DCH (State 6-10) in cell 1
2	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message carries an invalid CELL CHANGE ORDER FROM UTRAN.
3	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	Spare2

CELL CHANGE ORDER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink CELL CHANGE ORDER FROM UTRAN message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT change failure	
-Inter-RAT change failure cause	protocol error

8.3.11.8.5 Test requirement

In step 3 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.11.9 Inter-RAT Cell Change Order from UTRAN to GPRS/CELL_DCH/Success (stop of HS-DSCH reception)

8.3.11.9.1 Definition and applicability

All UEs which support FDD or TDD, HS-PDSCH and GSM.

8.3.11.9.2 Conformance requirement

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

1> the UE shall act as if the message was never received.

The UE shall:

1> if HS-DSCH is configured for UTRA:

2> stop any HS-DSCH reception procedures;

2> clear any stored HS-PDSCH configuration;

2> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

2> release all HARQ resources;

2> remove any H-RNTI stored;

2> clear the variable H_RNTI;

2> set the variable HS_DSCH_RECEPTION to FALSE.

1> start timer T309; and

1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

1> if the UE supports UTRAN to GERAN Network Assisted Cell Change, the IE "Geran-System Information" is present and the UE is in CELL_DCH state:

2> if according to [44] the IE "GERAN System Information" includes a correct and consistent set of SI or PSI messages:

3> use this information as the system information to begin access on the target GERAN cell.

2> otherwise:

3> ignore the IE "GERAN System Information" and continue the Cell Change Order procedure.

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

1> stop timer T309;

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

Reference(s)

TS 25.331 clause 8.3.11, B.6.

8.3.11.9.3 Test purpose

To test that the UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state when Radio bearers are mapped to HSDSCH channels and perform a cell change to another RAT, even if no prior UE measurements have been performed on the target cell and HS-PDSCH channels are active. The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

8.3.11.9.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

Parameter	Unit	Cell 2 (GSM)
Qsearch_I (TDD)	dBm	15 (never)

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

Cell 1- SIB 1 T309 set to 8 seconds (see specific message contents)

UE: PS-DCCH+DTCH_DCH_HSDCH (State 6-17) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement(s)

- UE supports FDD or TDD
- UE supports HS-PDSCH
- UE supports GSM/GPRS
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810

Test Procedure

The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established. The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a RA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS-DCCH+DTCH_DCH_HSDSCH in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GPRS.
4	UE			The UE accepts the cell change command and switches to the GPRS cell specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on the RACH of cell 2 to establish temporary block flow (GPRS cell). It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT	Uplink dynamic allocation. Sent on AGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
T309	8 Sec

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	NOT PRESENT

8.3.11.9.5 Test requirements

After step 3 the UE shall transmit a CHANNEL REQUEST message on RACH.

8.3.11.10 Inter-RAT Cell Change Order from UTRAN to GPRS/CELL_DCH/Failure (Physical channel Failure)

8.3.11.10.1 Definition and applicability

All UEs which support FDD or TDD, HS-PDSCH and GSM.

8.3.11.10.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:

2> if the CM_PATTERN_ACTIVATION_ABORTED flag is not set to TRUE:

3> revert back to the UTRA configuration;

3> establish the UTRA physical channel(s) (including HS-DSCH related channels) used at the time for reception of CELL CHANGE ORDER FROM UTRAN.

2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);

2> after the establishment of the uplink physical channel, send DPCCH and no DPDCH according to [26] during the number of frames indicated in the IE "PC preamble" in the variable LATEST_CONFIGURED_SRB_DELAY_AND_PC_PREAMBLE; and

2> then not send any data on signalling radio bearers RB0 to RB4 during the number of frames indicated in the IE "SRB delay" in the variable LATEST_CONFIGURED_SRB_DELAY_AND_PC_PREAMBLE;

2> if the CM_PATTERN_ACTIVATION_ABORTED flag is set to TRUE or if the UE does not succeed in establishing the UTRA physical channel(s):

3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";

3> when the cell update procedure has completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:

2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

2> if the UE is unable to return to this cell:

3> select a suitable UTRA cell according to [4];

3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";

3> when the cell update procedure completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

3> the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.10.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and if the establishment of the connection to the other RAT failed due to expiry of timer T309 prior to the successful establishment of a connection to the target RAT:

a. revert back to the UTRA configuration

b. establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

c. transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

8.3.11.10.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

UE: PS-DCCH+DTCH_DCH_HSDSCH (State 6-17) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

NOTE: The 'timer poll' value in the SS RLC transmit entity should be set to 800 ms.

Related ICS/IXIT statement(s)

- UE supports FDD or TDD
- UE supports HS-PDSCH
- UE supports GSM/GPRS
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710, GSM 750, T_GSM-810

Test Procedure

The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established. The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. The UE starts the timer T309. After the UE receives the command it shall configure itself accordingly but cannot complete the cell change, as SS does not respond to the CHANNEL REQUEST message transmitted by UE till the expiry of T309 timer. The SS checks that the cell change has failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into PS-DCCH _DCH_HSDSCH (State 6-17) in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GSM/GPRS.
4	UE			UE starts the timer T309. The UE accepts the cell change command and switches to the GPRS specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on RACH of cell 2 (GPRS cell) to establish temporary block flow
6	→			SS does not respond to the channel request. UE sends M + 1 CHANNEL REQUEST messages
				The SS does not transmit a response and wait for T309 timer to expire.
7	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.
				Note The UE may send a ROUTING AREA UPDATE REQUEST to complete the RA Update procedure initiated at step 5.

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	Not present

8.3.11.10.5 Test requirements

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 7 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.11.11 Inter-RAT cell change order from UTRAN/To GPRS/CELL_FACH/No RAB established/Success

8.3.11.11.1 Definition

8.3.11.11.2 Conformance requirement

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

1> the UE shall act as if the message was never received.

The UE shall:

1> start timer T309; and

1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

1> stop timer T309;

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.11.3 Test purpose

To test that the UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state and perform a cell change to another RAT, when no RABs are established.

8.3.11.11.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN and different location area, routing area.

UE: Registered Idle mode on PS in cell 1

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink: 3.4 DL: 3.4 kbps SRBs
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Test Procedure

The SS starts the UTRAN cell and the UE is triggered to make an MO PS call. After the SS receives SERVICE REQUEST message, the SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE sends a PACKET CHANNEL REQUEST through GPRS cell. The UE sends an RA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Step	Direction		Message	Comments
	UE	SS		
1	UE			Trigger the UE to initiate an MO PS call
2	→		SERVICE REQUEST	
3	←		CELL CHANGE ORDER FROM UTRAN	Sent on cell 1 (UTRAN cell) and the message indicates: the target cell description for GPRS.
4	UE			The UE accepts the cell change command and switches to the GPRS cell specified in the CELL CHANGE ORDER FROM UTRAN
5	→		PACKET CHANNEL REQUEST	The SS receives this burst on PRACH of cell 2 (GPRS cell) to establish temporary block flow. It implies that the UE has switched to GPRS cell.
6	←		PACKET UPLINK ASSIGNMENT	Uplink dynamic allocation Sent on PAGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC1BSIC of Cell 2
- Band Indicator	DCS 1800 band used Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	1Allocated BCCH ARFCN of Cell 2
- NC mode	NOT PRESENT

8.3.11.11.5 Test requirement

After step 4, the UE shall transmit a PACKET CHANNEL REQUEST message on PRACH.

8.3.11.12 Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Network Assisted Cell Change/Success

8.3.11.12.1 Definition

8.3.11.12.2 Conformance requirement

1> if the UE supports UTRAN to GERAN Network Assisted Cell Change, the IE "Geran-System Information" is present and the UE is in CELL_DCH state:

2> if according to [44] the IE "GERAN System Information" includes a correct and consistent set of SI or PSI messages:

3> use this information as the system information to begin access on the target GERAN cell.

2> otherwise:

3> ignore the IE "GERAN System Information" and continue the Cell Change Order procedure.

NOTE: The IE "GERAN System Information" is constructed in the same way as in 2G to 2G NACC, i.e. the PSI messages are encoded as such, whereas the SI messages exclude 2 octets of headers, see [44].

Reference(s)

TS 25.331 clause 8.3.11.3.

8.3.11.12.3 Test purpose

To test that the UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message which includes a correct and consistent set of SI or PSI messages in the IE "GERAN System Information" in CELL_DCH state and perform a cell change to another RAT using this as the system information to begin access on the target GERAN cell, even if no prior UE measurements have been performed on the target cell. The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

8.3.11.12.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN. Cell 2 is GPRS, no System Information is broadcast on the BCCH. 51.010 clauses 20.22 and 40.1.1 Cell A parameters shall be referenced for the default parameters of cell 2.

Parameter	Unit	Cell 2 (GSM)
Qsearch_I (TDD)	dBm	15 (never)

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

Cell 1- SIB 1 T309 set to 8 seconds (see specific message contents).

UE: PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement

- UE supports UTRAN to GERAN NACC,
- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810

Test Procedure

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_DCH (State 6-10). The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, including GERAN system information, to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a RA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS-DCCH+DTCH_DCH (State 6-10) in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled. No system information is broadcast on the BCCH
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GPRS and includes system information for cell 2.
4	UE			The UE accepts the cell change command and switches to the GPRS cell specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on the RACH of cell 2 to establish temporary block flow (GPRS cell). It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT	Uplink dynamic allocation. Sent on AGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
T309	8 Sec

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	NOT PRESENT
- CHOICE geran-SystemInfoType	
- sI	Encoded to contain default GPRS Cell A system information with the exception the SI_STATUS_IND bit in System Information Type 13 set to “1”.

8.3.11.12.5 Test requirement

After step 3 the UE shall transmit a CHANNEL REQUEST message on RACH.

8.3.11.13 Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Network Assisted Cell Change with Invalid SI/Success

8.3.11.13.1 Definition

8.3.11.13.2 Conformance requirement

1> if the UE supports UTRAN to GERAN Network Assisted Cell Change, the IE "Geran-System Information" is present and the UE is in CELL_DCH state:

2> if according to [44] the IE "GERAN System Information" includes a correct and consistent set of SI or PSI messages:

3> use this information as the system information to begin access on the target GERAN cell.

2> otherwise:

3> ignore the IE "GERAN System Information" and continue the Cell Change Order procedure.

NOTE: The IE "GERAN System Information" is constructed in the same way as in 2G to 2G NACC, i.e. the PSI messages are encoded as such, whereas the SI messages exclude 2 octets of headers, see [44].

Reference(s)

TS 25.331 clause 8.3.11.3.

8.3.11.13.3 Test purpose

To test that the UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message which includes an incorrect set of SI or PSI messages in the IE "GERAN System Information" in CELL_DCH state and perform a cell change to another RAT, ignoring the IE "GERAN System Information", even if no prior UE measurements have been performed on the target cell. The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

8.3.11.13.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 Cell A parameters shall be referenced for the default parameters of cell 2 with the exception the SI_STATUS_IND bit in System Information Type 13 set to "1".

Parameter	Unit	Cell 2 (GSM)
Qsearch_I (TDD)	dBm	15 (never)

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

Cell 1- SIB 1 T309 set to 8 seconds (see specific message contents)

UE: PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement

- UE supports UTRAN to GERAN NACC,
- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-850, GSM-PCS, GSM-710, GSM 750, T_GSM-810.

Test Procedure

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_DCH (State 6-10). The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, and including a set of GERAN system information which describes a GPRS cell different to the target cell, and replaced SI 3 with all '1's, to the UE through DCCH of the serving UTRAN cell. This is to test that if any of the SI signalled is not correct, all of the IE is ignored. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell, ignoring the IE "GERAN System Information" and reading this instead from cell 2. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a RA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS-DCCH+DTCH_DCH (State 6-10) in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GPRS, including invalid GERAN system information.
4	UE			The UE accepts the cell change command and switches to the GPRS cell specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on the RACH of cell 2 to establish temporary block flow (GPRS cell). It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT	Uplink dynamic allocation. Sent on AGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
T309	8 Sec

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	NOT PRESENT
- CHOICE geran-SystemInfoType	
- sI	Encoded to contain default GPRS Cell B system information with the exception the SI_STATUS_IND bit in System Information Type 13 set to “1”. SI 3 encoded PDU is replaced with all ‘1’ bits to test that all of the IE is ignored if any part is incorrect.

8.3.11.13.5 Test requirement

After step 3 the UE shall transmit a CHANNEL REQUEST message on RACH.

8.3.11.14 Inter-RAT Cell Change Order from UTRAN to GPRS/CELL_DCH/Success (stop of E-DCH transmission)

8.3.11.14.1 Definition and applicability

All UEs which support FDD and HS-PDSCH and E-DPDCH and GSM.

8.3.11.14.2 Conformance requirement

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

…

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

1> the UE shall act as if the message was never received.

The UE shall:

1>For FDD:

2> if the UE has a pending "TGPS reconfiguration CFN" at the activation time received in the CELL CHANGE ORDER FROM UTRAN message the UE may:

3> abort the pending CM activation;

3> set the CM_PATTERN_ACTIVATION_ABORTED to TRUE.

2> otherwise:

3> set the CM_PATTERN_ACTIVATION_ABORTED to FALSE.

1> start timer T309; and

1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

…

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

1> stop timer T309;

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.14.3 Test purpose

To test that the UE is able to receive a CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state when Radio bearers are mapped to the E-DCH channel and perform a cell change to another RAT, even if no prior UE measurements have been performed on the target cell and E-DPDCH or E-PUCH channels are active.

8.3.11.14.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of Cell 2.

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

Cell 1- SIB 1 T309 set to 8 seconds (see specific message contents)

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18) under condition A12, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD or TDD
- UE supports HS-PDSCH
- UE supports E-DPDCH
- UE supports GSM/GPRS or E-PUCH

Test Procedure

The UE is in the CELL_DCH state and has a radio bearer mapped on E-DCH and HS-DSCH established with active E-DCH transmission and HS-DSCH reception. The SS configures the GPRS cell, then sends a CELL CHANGE ORDER FROM UTRAN message indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a ROUTING AREA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS_DCCH+DTCH E_DCH/HS_DSCH in Cell 1
2	SS			The SS configures Cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Sent on Cell 1 (UTRAN cell) and the message indicates: the target cell description for GPRS.
4	UE			The UE accepts the cell change command and switches to the GPRS cell specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on the RACH of Cell 2 to establish temporary block flow (GPRS cell). It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT	Uplink dynamic allocation. Sent on AGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
T309	8 Sec

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	NOT PRESENT

8.3.11.14.5 Test requirements

After step 3 the UE shall transmit a CHANNEL REQUEST message on RACH.

8.3.11.15 Inter-RAT Cell Change Order from UTRAN to GPRS/CELL_DCH/Success (stop of discontinuous uplink transmission)

8.3.11.15.1 Definition

All UEs, which support FDD and UL DTX.

8.3.11.15.2 Conformance requirement

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in

CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

…

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

1> the UE shall act as if the message was never received.

The UE shall:

1> if the UE has a pending "TGPS reconfiguration CFN" at the activation time received in the CELL CHANGE ORDER FROM UTRAN message the UE may:

2> abort the pending CM activation;

2> set the CM_PATTERN_ACTIVATION_ABORTED to TRUE.

1> otherwise:

2> set the CM_PATTERN_ACTIVATION_ABORTED to FALSE.

1> start timer T309; and

1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

…

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

1> stop timer T309;

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.15.3 Test purpose

To test that the UE is able to receive a CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state when Radio bearers are mapped to the E-DCH channel with UL DTX and DL DRX (if supported) configured and perform a cell change to another RAT, even if no prior UE measurements have been performed on the target cell and E-DPDCH channels are active.

8.3.11.15.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of Cell 2.

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

Cell 1- SIB 1 T309 set to 8 seconds (see specific message contents)

UE: PS_DCCH+DTCH E_DCH/HS_DSCH (state 6-18), with UL DTX configured, under condition A20, as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports discontinuous uplink transmission.
- UE supports GSM/GPRS

Test Procedure

The UE is in the CELL_DCH state and has a radio bearer mapped on E-DCH, HS-DSCH established (with DRX enabled if supported) and UL DTX configured with active E-DCH transmission and HS-DSCH reception. The SS configures the GPRS cell, and then sends a CELL CHANGE ORDER FROM UTRAN message indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a ROUTING AREA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS_DCCH+DTCH E_DCH/HS_DSCH (with DRX enabled if supported) with UL DTX configured in Cell 1
3	←		CELL CHANGE ORDER FROM UTRAN	Sent on Cell 1 (UTRAN cell) and the message indicates: the target cell description for GPRS.
4	UE			The UE accepts the cell change command and switches to the GPRS cell specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on the RACH of Cell 2 to establish temporary block flow (GPRS cell). It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT	Uplink dynamic allocation. Sent on AGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
T309	8 Sec

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	NOT PRESENT

8.3.11.15.5 Test requirements

At step 4 the UE shall transmit a CHANNEL REQUEST message on RACH.

8.3.11.16 Inter-RAT Cell Change Order from UTRAN to GPRS/ MIMO (Success: with PCI Restrictions and S-CPICH Power Offset)

8.3.11.16.1 Definition and applicability

All UE categories which support MIMO and GSM/GPRS

UE supports FDD and F-DPCH or Enhanced F-DPCH

8.3.11.16.2 Conformance requirement

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

…

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

1> the UE shall act as if the message was never received.

The UE shall:

1>For FDD:

2> if the UE has a pending "TGPS reconfiguration CFN" at the activation time received in the CELL CHANGE ORDER FROM UTRAN message the UE may:

3> abort the pending CM activation;

3> set the CM_PATTERN_ACTIVATION_ABORTED to TRUE.

2> otherwise:

3> set the CM_PATTERN_ACTIVATION_ABORTED to FALSE.

1> start timer T309; and

1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

…

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

1> stop timer T309;

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

[…]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> if the IE "MIMO parameters" is not included:

2> clear the MIMO_PARAMS variable;

2> trigger lower layers to stop operation in MIMO mode.

1> otherwise:

2> for FDD, if the IE "MIMO N_cqi_type A/M_cqi ratio" is included:

3> store the value of the IE "MIMO N_cqi_type A/M_cqi ratio" in the MIMO_PARAMS variable.

2> for FDD, if the IE "MIMO pilot configuration" is included:

3> store the value of the IE "MIMO pilot configuration" in the MIMO_PARAMS variable.

2> for 1.28 Mcps TDD, if the IE "MIMO SF Mode for HS-PDSCH dual stream" is included:

3> store the value of the IE "MIMO SF Mode for HS-PDSCH dual stream" in the MIMO_PARAMS variable.

2> if the IE "MIMO operation" is set to "start":

3> for FDD, if the IE "Precoding weight set restriction" is included:

4> store the value of the IE "Precoding weight set restriction " in the MIMO_PARAMS variable. In addition, it shall be indicated to lower layers that precoding weight set restriction is configured.

3> else:

4> clear the value of the IE "Precoding weight set restriction" in the MIMO_PARAMS variable. In addition, it shall be indicated to lower layers that precoding weight set restriction is not configured.

2> else if the IE "MIMO operation" is set to "continue":

3> if the IE "Precoding weight set restriction" is included:

4> if the IE "Precoding weight set restriction" is already stored in the variable MIMO_PARAMS before receiving this message:

5> continue using "Precoding weight set restriction" for MIMO operation.

4> else:

5> UE behaviour is undefined.

3> else:

4> if the IE "Precoding weight set restriction" is already stored in the variable MIMO_PARAMS before receiving this message:

5> continue using "Precoding weight set restriction" for MIMO operation.

4> else:

5> continue MIMO operation without using "Precoding weight set restriction".

NOTE: This subclause applies to FDD and 1.28 Mcps TDD only.

[…]

1> for FDD, if the IE "Secondary CPICH Info" is included and if the IE "Channelisation code" in MIMO pilot configuration is different from the IE "Channelisation Code" in Secondary CPICH info:

2> the UE behavior is undefined.

1> for FDD, if the IE "Secondary CPICH Info" is included and if the IE "Power Offset For S-CPICH for MIMO" is provided, then pass the offset value received in the IE "Power Offset For S-CPICH for MIMO" to the lower layers.

[…]

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the UE shall:

1> take actions related to the MIMO_PARAMS variable as specified in subclause 8.5.32;

1> determine the value of the MIMO_STATUS variable.

The MIMO_STATUS variable shall be set to TRUE only when all the following conditions are met:

1> The UE is in CELL_DCH state;

1> the variable HS_DSCH_RECEPTION is set to TRUE;

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO N_cqi_type A/M_cqi ratio"; and

1> for FDD, the variable MIMO_PARAMS contains a value for the IE "MIMO pilot configuration".

1> for 1.28 Mcps TDD, the variable MIMO_PARAMS contains a value for the IE "MIMO SF Mode for HS-PDSCH dual stream".

If any of the above conditions is not met and the MIMO_STATUS variable is set to TRUE, the UE shall:

1> set the MIMO_STATUS variable to FALSE;

1> clear the MIMO_PARAMS variable;

3> trigger lower layers to stop operation in MIMO mode.

[…]

With the exception of the provisions of subclause 6A.3, the following shall apply when the UE is configured in MIMO mode:

1) The UE derives the PCI value as defined in subclause 6A.4 and either a type A or a type B CQI value as

defined in subclause 6A.2.2 depending on which type of CQI shall be reported as defined below.

Reference(s)

3GPP TS 25.331 clause 8.3.11, 8.5.32, 8.5.33, 8.6.6.41

3GPP TS 25.214 clause 6A.1.2.2

8.3.11.16.3 Test purpose

To test that the UE supporting MIMO (when S-CPICH Offset applied and PCI restricted by SS) is able to receive a CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and perform a cell change to another RAT, even if no prior UE measurements have been performed on the target cell.

8.3.11.16.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of Cell 2.

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

Cell 1- SIB 1 T309 set to 8 seconds (see specific message contents)

UE: PS-DCCH DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports MIMO
- UE supports HS-PDSCH
- UE supports E-DPDCH
- UE supports F-DPCH or Enhanced F-DPCH
- UE supports GSM/GPRS or E-PUCH

Test Procedure

The UE is in CELL_DCH state and only signalling radio bearers have been established.

The SS transmits a RADIO BEARER SETUP message including the RAB Information for setup IE to configure PS domain RAB and perform SRB mapping from DCH to EDCH/HSDPA (with MIMO configured for L1 with PCI restriction and S-CPICH power offset). The UE transmits a RADIO BEARER SETUP COMPLETE on DCCH. The UE shall configure the lower layers with signalled S-CPICH Power offset. UE sends combined CQI/PCI reports of type A/B continuously every 2 ms. The PCI values reported shall be restricted to 0 or 3 for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, restriction shall not apply.

The SS configures the GPRS cell, and then sends a CELL CHANGE ORDER FROM UTRAN message indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a ROUTING AREA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Expected sequence:

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	Setup PS RAB on EDCH/HSDPA. Reconfiguration of SRB mapping from DCH to EDCH/HSDPA+ S-CPICH Offset and with PCI Restriction.
2	→		RADIO BEARER SETUP COMPLETE	
3				UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B. PCI values of 0 or 3 shall be used by the UE for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, the restriction does not apply. The UE shall configure the lower layers with signalled S-CPICH Power offset.
4	←		CELL CHANGE ORDER FROM UTRAN	Sent on Cell 1 (UTRAN cell) and the message indicates: the target cell description for GPRS.
5	UE			The UE accepts the cell change command and switches to the GPRS cell specified in the CELL CHANGE ORDER FROM UTRAN
6	→		CHANNEL REQUEST	The SS receives this burst on the RACH of Cell 2 to establish temporary block flow (GPRS cell). It implies that the UE has switched to GPRS cell.
7	←		IMMEDIATE ASSIGNMENT	Uplink dynamic allocation. Sent on AGCH.
8	→		ROUTING AREA UPDATE REQUEST	

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
T309	8 Sec

RADIO BEARER SETUP (Step 1)

Use the same message as specified for "Packet to CELL_DCH / E-DCH / HS-DSCH using one multiplexing option (1/1) and SRBs mapped on E-DCH/HS-DSCH", except for the following

Information Element	Value/remark
- RAB information for setup	
- RAB info	(high-speed AM DTCH for PS domain)
- RAB identity	0000 0101B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	useT315
- RB information to setup	
- RB identity	25

Information Element	Value/remark
- PDCP info	
- Support for lossless SRNS relocation	FALSE
- Max PDCP SN window size	Not present
- PDCP PDU header	Absent
- Header compression information	Not present
- CHOICE RLC info type	RLC Info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	256
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	7
- E-DCH MAC-d flow identity	2
- CHOICE RLC PDU size	Fixed size
- DDI	5
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	336 bits
- Include in scheduling info	TRUE
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	0
- Logical channel identity	9
- RB information to be affected	
- RB identity	1 (UM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1

Information Element	Value/remark
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	1
- RB identity	2 (AM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	2
- RB identity	3 (AM DCCH for NAS High Priority)
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	3
- RB identity	4 (AM DCCH for NAS Low Priority)
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	

Information Element	Value/remark
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	4
Added or Reconfigured DL TrCH information	1 TrCH (HS-DSCH for DTCH and DCCH)
- Downlink transport channel type	HS-DSCH
- DL Transport channel identity	Not Present
- CHOICE DL parameters	HS-DSCH
- HARQ Info	
- Number of Processes	12
- CHOICE *Memory Partitioning*	Implicit
- CHOICE *DL MAC header type*	
- Added or reconfigured MAC-d flow	
- MAC-hs queue to add or reconfigure list	(two queues)
- MAC-ehs queue Id	0 (for DTCH)
- T1	50
- MAC-hs window size	16
- MAC-ehs queue Id	1 (for DCCH)
- MAC-d Flow Identity	1
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size index	0
- MAC-hs queue to delete list	Not present
- DCH quality target	Not present
MIMO Parameters	
- MIMO Operation	Start
- MIMO N_cqi_typeA/M_cqi ratio	1/2
- MIMO pilot configuration	
- CHOICE Second CPICH pattern	Antenna1 S-CPICH
- Channelisation code	13
Downlink HS-PDSCH Information	
- CHOICE mode	FDD
- DL Scrambling Code	Not Present
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	7
- Measurement Feedback Info	
- CHOICE mode	FDD
- Measurement Power Offset	12 (6 dB)
- CQI Feedback cycle, k	2 ms
- CQI repetition factor	1
- Δ_{CQI}	5
- Downlink 64QAM configured	Not Present
- HS-DSCH TB size table	Octet Aligned
MIMO-PilotConfiguration-v7f0ext	
- s-cpich-PowerOffset-Mimo	-6
MIMO-Parameters-v7g0ext	
-precodingWeightSetRestriction	TRUE

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	NOT PRESENT

8.3.11.16.5 Test requirements

At step 2, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

At step 3, UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B. PCI values of 0 or 3 shall be used by the UE for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, the restriction does not apply. The UE shall configure the lower layers with signalled S-CPICH Power offset.

After step 4 the UE shall transmit a CHANNEL REQUEST message on RACH.

8.3.11.17 Inter-RAT Cell Change Order from UTRAN to GPRS/MIMO for S-CPICH based MIMO with DPCH in STTD (Failure;physical channel failure)

8.3.11.17.1 Definition and applicability

All UE categories which support MIMO

UE supports GSM/GPRS

UE supports FDD and F-DPCH or Enhanced F-DPCH

8.3.11.17.2 Conformance requirement

If:

- Timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- If the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:

2>For TDD or for FDD if the CM_PATTERN_ACTIVATION_ABORTED flag is not set to TRUE:

3> revert back to the UTRA configuration;

3> establish the UTRA physical channel(s) (including HS-DSCH related channels) used at the time for reception of CELL CHANGE ORDER FROM UTRAN.

2> For FDD:

3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);

3> if there exists any DTX or DRX configuration prior to the reception of the CELL CHANGE ORDER FROM UTRAN COMMAND, instruct the physical layer to consider only the HS-SCCH orders which were acknowledged prior to the activation time of the received message;

3> if the variable DTX_DRX_STATUS is set to TRUE, re-configure the physical layer to perform discontinuous uplink DPCCH transmission and enable or disable discontinuous downlink reception operations according to the variable DTX_DRX_PARAMS at the CFN corresponding to the frame boundary that is offset by the stored value of the IE "Enabling Delay" from the frame boundary where uplink transmission resumes with the old configuration;

3> apply power control preamble according to [26] during the number of frames indicated in the IE "PC preamble" in the variable LATEST_CONFIGURED_SRB_DELAY_AND_PC_PREAMBLE; and

3> then not send any data on signalling radio bearers RB0 to RB4 during the number of frames indicated in the IE "SRB delay" in the variable LATEST_CONFIGURED_SRB_DELAY_AND_PC_PREAMBLE or while the physical channel is not considered established;

3> if the CM_PATTERN_ACTIVATION_ABORTED flag is set to TRUE or if the UE does not succeed in establishing the UTRA physical channel(s):

4> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";

4> when the cell update procedure has completed successfully:

5> proceed as below.

3> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

4> include the IE "RRC transaction identifier"; and

4> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

4> clear that entry;

4> set the IE "Inter-RAT change failure" to "physical channel failure".

3> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:

2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

2> if the UE is unable to return to this cell:

3> select a suitable UTRA cell according to [4];

3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";

3> when the cell update procedure completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

3> the procedure ends.

[…]

If the IE "Tx Diversity Mode" is included the UE shall:

1> if the value of the IE "Tx Diversity Mode" is STTD:

2> configure the Layer 1 to use the Tx diversity mode indicated in the IE "Tx Diversity Mode" for the radio links for which the IE "Closed loop timing adjustment mode" is included, ignoring the actual value of IE "Closed loop timing adjustment mode".

1> if the value of the IE "Tx Diversity Mode" is closed loop mode 1:

2> configure the Layer 1 to use the Tx diversity mode indicated in the IE "Tx Diversity Mode" for the radio links for which the IE "Closed loop timing adjustment mode" is included, using the actual value of the IE "Closed loop timing adjustment mode".

1> if the value of the IE "Tx Diversity Mode" is "none":

2> configure the Layer 1 not to use Tx diversity for all radio links in the active set.

If the IE "Tx Diversity Mode" is not included, the UE shall:

1> continue to use the already configured Tx diversity mode;

1> in case no Tx diversity mod e has been configured:

2> do not apply Tx diversity.

For F-DPCH the UE shall:

1> if the IE "STTD indication" is included in the IE "Downlink F-DPCH info for each RL":

2> use STTD for F-DPCH on the radio links for which the IE "STTD indication" is set to TRUE

…

References

3GPP TS 25.331 clause 8.3.11.5, 8.6.6.24

8.3.11.17.3 Test Purpose

To verify that when MIMO configured(S-CPICH based MIMO with F-DPCH in STTD) UE received CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and if the establishment of the connection to the other RAT failed due to expiry of timer T309 prior to the successful establishment of a connection to the target RAT:

a. revert back to the UTRA configuration

b. establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

c. transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

d. To confirm that the UE configures the radio bearers to start MIMO reception after reverting back to the old config and configures layer 1 to use STTD as Tx diversity mode for F-DPCH

8.3.11.17.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

UE: PS-DCCH DCH (state 6-7) as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

NOTE: The 'timer poll' value in the SS RLC transmit entity should be set to 800 ms.

Related ICS/IXIT statement

- UE supports FDD
- UE supports MIMO
- UE supports HS-PDSCH
- UE supports F-DPCH
- UE supports GSM/GPRS
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710

Test Procedure

The UE is in CELL_DCH state and only signalling radio bearers have been established.

The SS transmits a RADIO BEARER SETUP message including the RAB Information for setup IE to configure PS domain RAB and perform SRB mapping from DCH to E-DCH/HSDPA (with MIMO configured for L1). The tx-diversity mode for F-DPCH shall be set to STTD.The UE transmits a RADIO BEARER SETUP COMPLETE on DCCH. UE sends combined CQI/PCI reports of type A/B continuously every 2 ms.

The SS configures GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. The UE starts the timer T309. After the UE receives the command it shall configure itself accordingly but cannot complete the cell change, as SS does not respond to the CHANNEL REQUEST message transmitted by UE till the expiry of T309 timer. The SS checks that the cell change has failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell.The SS checks that UE configures MIMO for L1 and tx-diversity mode for F-DPCH to be STTD. UE sends combined CQI/PCI reports of type A/B continuously every 2 ms.

Expected Sequence:

Step	Direction		Message	Comments
	UE	SS		
1	←		RADIO BEARER SETUP	Setup PS RAB on E-DCH/HSDPA. Reconfiguration of SRB mapping from DCH to E-DCH/HSDPA. Tx-diversity mode for F-DPCH is set to STTD.
2	→		RADIO BEARER SETUP COMPLETE	
3				UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B.
4	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
5	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GSM/GPRS.
6	UE			UE starts the timer T309. The UE accepts the cell change command and switches to the GPRS specified in the CELL CHANGE ORDER FROM UTRAN
7	→		CHANNEL REQUEST	The SS receives this burst on RACH of cell 2 (GPRS cell) to establish temporary block flow
8	→			SS does not respond to the channel request. UE sends M + 1 CHANNEL REQUEST messages
				The SS does not transmit a response and wait for T309 timer to expire.
9	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.
				Note: The UE may send a ROUTING AREA UPDATE REQUEST to complete the RA Update procedure initiated at step 7.
10				Tx-diversity mode for F-DPCH is set to STTD. UE shall transmit composite CQI/PCI reports of type A or type B continuously every 2 ms. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B.

Specific message contents

RADIO BEARER SETUP (Step 1)

Use the same message as specified for "Packet to CELL_DCH / HS-DSCH with enhanced data rate and RLC AM" and SRBs mapped on E-DCH/HS-DSCH(Mac-ehs) under condition A28a as specified in clause 9 of TS34.108, except for the following

Information Element	Value/remark
Added or Reconfigured DL TrCH information	1 TrCH (HS-DSCH for DTCH and DCCH)
- Downlink transport channel type	HS-DSCH
- DL Transport channel identity	Not Present
- CHOICE DL parameters	HS-DSCH
- HARQ Info	
- Number of Processes	12
- CHOICE *Memory Partitioning*	Implicit
- CHOICE *DL MAC header type*	
- Added or reconfigured MAC-d flow	
- MAC-hs queue to add or reconfigure list	(two queues)
- MAC-ehs queue Id	0 (for DTCH)
- T1	50

Information Element	Value/remark
- MAC-hs window size	16
- MAC-ehs queue Id	1 (for DCCH)
- MAC-d Flow Identity	1
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size	148
- MAC-d PDU size index	0
- MAC-hs queue to delete list	Not present
- DCH quality target	Not present
MIMO Parameters	
- MIMO Operation	Start
- CHOICE mode	FDD
- MIMO N_cqi_type A/M_cqi ratio	½
- MIMO pilot configuration	
- CHOICE Second CPICH pattern	Antenna1 S-CPICH
- Channelisation code	13
Downlink HS-PDSCH Information	
- CHOICE mode	FDD
- DL Scrambling Code	Not Present
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	7
- Measurement Feedback Info	
- CHOICE mode	FDD
- Measurement Power Offset	12 (6 dB)
- CQI Feedback cycle, k	2 ms
- CQI repetition factor	1
- Δ_{CQI}	5
- Downlink 64QAM configured	Not Present
- HS-DSCH TB size table	Octet Aligned
DL-CommonInformation	
-dl-DPCH-InfoCommon	
-CHOICE mode	FDD
-tx-DiversityMode	STTD
DL-FDPCH-InfoPerRL-r7	
-sttdIndication	TRUE

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	Not present

8.3.11.17.5 Test requirements

In step 2 the UE shall transmit a RADIO BEARER SETUP COMPLETE message

In step 3 the UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B. UE configures F-DPCH with Tx-diversity mode set to STTD.

In step 7 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 9 the UE shall transmit CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

In step 10 the UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B.

8.3.11.18 Inter-RAT Cell Change Order from UTRAN to GPRS/ MIMO (Failure; with PCI Restrictions and S-CPICH Power Offset)

8.3.11.18.1 Definition and applicability

All UE categories which support MIMO and GSM/GPRS.

UE supports FDD and F-DPCH or Enhanced F-DPCH

8.3.11.18.2 Conformance requirement

If:

- Timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- If the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

The UE shall:

1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:

2> if the CM_PATTERN_ACTIVATION_ABORTED flag is not set to TRUE:

3> revert back to the UTRA configuration;

3> establish the UTRA physical channel(s) (including HS-DSCH related channels) used at the time for reception of CELL CHANGE ORDER FROM UTRAN.

2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);

2> after the establishment of the uplink physical channel, send DPCCH and no DPDCH according to [26] during the number of frames indicated in the IE "PC preamble" in the variable LATEST_CONFIGURED_SRB_DELAY_AND_PC_PREAMBLE; and

2> then not send any data on signalling radio bearers RB0 to RB4 during the number of frames indicated in the IE "SRB delay" in the variable LATEST_CONFIGURED_SRB_DELAY_AND_PC_PREAMBLE;

2> if the CM_PATTERN_ACTIVATION_ABORTED flag is set to TRUE or if the UE does not succeed in establishing the UTRA physical channel(s):

3> perform a cell update procedure according to sub clause 8.3.1 with cause "Radio link failure";

3> when the cell update procedure has completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:

2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;

2> if the UE is unable to return to this cell:

3> select a suitable UTRA cell according to [4];

3> initiate the cell update procedure according to sub clause 8.3.1 using the cause "cell re-selection";

3> when the cell update procedure completed successfully:

4> proceed as below.

2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:

3> include the IE "RRC transaction identifier"; and

3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry;

3> set the IE "Inter-RAT change failure" to "physical channel failure".

2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

3> the procedure ends.

References

3GPP TS 25.331 clause 8.3.11, 8.5.32, 8.5.33, 8.6.6.41

3GPP TS 25.214 clause 6A.1.2.2, 6A.2.2

8.3.11.18.3 Test purpose

To verify that when MIMO configured(with PCI Restrictions and S-CPICH Power Offset) UE received CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and if the establishment of the connection to the other RAT failed due to expiry of timer T309 prior to the successful establishment of a connection to the target RAT:

a. revert back to the UTRA configuration

b. establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

c. transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

d. the UE shall transmit CQI reports of type A and type B. PCI values of 0 or 3 shall be used by the UE for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, the restriction does not apply. The UE shall configure the lower layers with signalled S-CPICH Power offset."

8.3.11.18.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN. UTRAN and GPRS cells belong to different location area.

UE: PS-DCCH DCH (state 6-7) as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

NOTE: The 'timer poll' value in the SS RLC transmit entity should be set to 800 ms.

Related ICS/IXIT statement

- UE supports FDD
- UE supports MIMO

UE supports HSDSCH

- UE supports F-DPCH or Enhanced F-DPCH
- UE supports GSM/GPRS
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS, GSM-850, GSM-710

Test Procedure

The UE is in CELL_DCH state and only signalling radio bearers have been established.

The SS transmits a RADIO BEARER SETUP message including the RAB Information for setup IE to configure PS domain RAB and perform SRB mapping from DCH to EDCH/HSDPA (with MIMO configured for L1 with PCI restriction and S-CPICH Power Offset). The UE transmits a RADIO BEARER SETUP COMPLETE on DCCH. The UE shall configure the lower layers with signalled S-CPICH Power offset. UE sends combined CQI/PCI reports of type A/B continuously every 2 ms. The PCI values reported shall be restricted to 0 or 3 for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, restriction shall not apply.

The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. The UE starts the timer T309. After the UE receives the command it shall configure itself accordingly but cannot complete the cell change, as SS does not respond to the CHANNEL REQUEST message transmitted by UE till the expiry of T309 timer. The SS checks that the cell change has failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Expected Sequence:

Step	Direction		Message	Comments
	UE	SS		
1	←		RADIO BEARER SETUP	Setup PS RAB on EDCH/HSDPA. Reconfiguration of SRB mapping from DCH to EDCH/HSDPA (with PCI restriction and S-CPICH Power Offset)
2	→		RADIO BEARER SETUP COMPLETE	
3				UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B. PCI values of 0 or 3 shall be used by the UE for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, the restriction does not apply. The UE shall configure the lower layers with signalled S-CPICH Power offset.
4	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
5	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GSM/GPRS.
6	UE			UE starts the timer T309. The UE accepts the cell change command and switches to the GPRS specified in the CELL CHANGE ORDER FROM UTRAN
7	→		CHANNEL REQUEST	The SS receives this burst on RACH of cell 2 (GPRS cell) to establish temporary block flow
8	→			SS does not respond to the channel request. UE sends M + 1 CHANNEL REQUEST messages
				The SS does not transmit a response and wait for T309 timer to expire.
9	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.
				Note The UE may send a ROUTING AREA UPDATE REQUEST to complete the RA Update procedure initiated at step 7.
10				UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B. PCI values of 0 or 3 shall be used by the UE for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, the restriction does not apply. The UE shall configure the lower layers with signalled S-CPICH Power offset.

Specific message contents

RADIO BEARER SETUP (Step 1)

Use the same message as specified for "Packet to CELL_DCH / E-DCH / HS-DSCH using one multiplexing option (1/1) and SRBs mapped on E-DCH/HS-DSCH", except for the following

Information Element	Value/remark
- RAB information for setup	

Information Element	Value/remark
- RAB info	(high-speed AM DTCH for PS domain)
- RAB identity	0000 0101B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	useT315
- RB information to setup	
- RB identity	25
- PDCP info	
- Support for lossless SRNS relocation	FALSE
- Max PDCP SN window size	Not present
- PDCP PDU header	Absent
- Header compression information	Not present
- CHOICE RLC info type	RLC Info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	256
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	7
- E-DCH MAC-d flow identity	2
- CHOICE RLC PDU size	Fixed size
- DDI	5
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	336 bits
- Include in scheduling info	TRUE
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	0
- Logical channel identity	9
- RB information to be affected	
- RB identity	1 (UM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1

Information Element	Value/remark
- Uplink transport channel type	E-DCH
- Logical channel identity	1
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	1
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	1
- RB identity	2 (AM DCCH for RRC)
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	2
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	2
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	2
- RB identity	3 (AM DCCH for NAS High Priority)
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH
- Logical channel identity	3
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	3
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	3
- RB identity	4 (AM DCCH for NAS Low Priority)
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	E-DCH

Information Element	Value/remark
- Logical channel identity	4
- E-DCH MAC-d flow identity	1
- CHOICE RLC PDU size	Fixed size
- DDI	4
- RLC PDU size list	1 RLC PDU size
- RLC PDU size	144 bits
- Include in scheduling info	FALSE
- MAC logical channel priority	4
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	HS-DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- CHOICE *DL MAC header type*	
- DL HS-DSCH MAC-ehs Queue Id	1
- Logical channel identity	4
Added or Reconfigured DL TrCH information	1 TrCH (HS-DSCH for DTCH and DCCH)
- Downlink transport channel type	HS-DSCH
- DL Transport channel identity	Not Present
- CHOICE DL parameters	HS-DSCH
- HARQ Info	
- Number of Processes	12
- CHOICE *Memory Partitioning*	Implicit
- CHOICE *DL MAC header type*	
- Added or reconfigured MAC-d flow	
- MAC-hs queue to add or reconfigure list	(two queues)
- MAC-ehs queue Id	0 (for DTCH)
- T1	50
- MAC-hs window size	16
- MAC-ehs queue Id	1 (for DCCH)
- MAC-d Flow Identity	1
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size index	0
- MAC-hs queue to delete list	Not present
- DCH quality target	Not present
MIMO Parameters	
- MIMO Operation	Start
- MIMO N_cqi_typeA/M_cqi ratio	1/2
- MIMO pilot configuration	
- CHOICE Second CPICH pattern	Antenna1 S-CPICH
- Channelisation code	13
- Power Offset for S-CPICH for MIMO	-6dB
- Precoding weight set restriction	TRUE
Downlink HS-PDSCH Information	
- CHOICE mode	FDD
- DL Scrambling Code	Not Present
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	7
- Measurement Feedback Info	
- CHOICE mode	FDD
- Measurement Power Offset	12 (6 dB)
- CQI Feedback cycle, k	2 ms
- CQI repetition factor	1
- Δ_{CQI}	5
- Downlink 64QAM configured	Not Present
- HS-DSCH TB size table	Octet Aligned

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE Radio Access Technology	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	Not present

8.3.11.18.5 Test requirements

In step 2 the UE shall transmit a RADIO BEARER SETUP COMPLETE message

In step 3 the UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B. PCI values of 0 or 3 shall be used by the UE for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, the restriction does not apply. The UE shall configure the lower layers with signalled S-CPICH Power offset.

In step 7 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 9 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

In step 10 the UE shall transmit composite CQI/PCI reports of type A or type B. The SS shall check that for 500 consecutive CQI reports, 250 are type A and 250 of type B. PCI values of 0 or 3 shall be used by the UE for type A CQIs where one transport block is preferred. For type A CQIs where two transport blocks are preferred, the restriction does not apply. The UE shall configure the lower layers with signalled S-CPICH Power offset.

8.3.12 Handover to CSG/Hybrid Cell

8.3.12.1 Inter-frequency inbound handover to UMTS CSG cell without reporting proximity indication

8.3.12.1.1 Definition

Test to verify the UE can report the Cell Identity, CSG ID and CSG membership indication of inter-frequency member CSG cells without reporting proximity indication.

8.3.12.1.2 Conformance requirement

1: Inter-frequency measurements for CSG/Hybrid cells:

For each cell reported in the IE "Cell measured results" of an inter-frequency Measurement Report, which is also included in the IE "Inter-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE;

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if CSG identity of the concerned cell is present in UE's CSG whitelist.

If the UE needs measurement gaps to read the system information on the non-used frequency, the system information of the reported cell can be acquired by the UE via autonomous measurement gaps when the IE "Inter-frequency SI Acquisition" is received by the UE, i.e., UE is allowed to temporarily abort communication with the serving cell to perform SI acquisition within the limits (detailed value is FFS). UE shall send the measurement report before the maximum provided time specified in IE "Periodical reporting criteria" if the UE is able to acquire SI early.

2: Inter-frequency Measurement Procedure of CSG and Hybrid cells:

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist. The CSG proximity indication includes the RAT and frequency of the cell.

3) The SRNC configures a measurement on the concerned frequency/RAT to measure CSG/hybrid cells. Compressed mode gaps, if required by the UE, are also activated to allow UE to perform measurements on the reported RAT and frequency. The network may also use the proximity indication to minimize the requesting of handover preparation information of CSG/hybrid cells by avoiding requesting such information when the UE is not in the geographical area where cells whose CSG IDs are in the UEs CSG whitelist are located.

4) The UE sends a measurement report including the measured PSCs/PCIs.

5) The SRNC configures the UE to perform SI acquisition and reporting of a particular PSC/PCI.

6) The UE performs SI acquisition using autonomous gaps, i.e., the UE may suspend reception and transmission with the SRNC within the limits (the limit is currently FFS) to acquire the relevant system information from the target HNB/HeNB.

7) The UE sends a measurement report including Cell Identity, CSG ID and CSG membership indication.

8) SRNC can then proceed with the handover processing. The handover processing for inter-frequency handover to a CSG/Hybrid cell is described in [6].

NOTE: The above steps also apply to inter-RAT mobility from UMTS cell to HeNB.

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements on the reported RAT and frequency.

In the above procedure, step 2 may not be performed in case the UE has not previously visited the HNB, e.g., when the UE first visits a CSG/hybrid cell.

The PSC/PCI confusion is resolved by steps 5, 6 and 7. The SRNC can request SI acquisition and reporting for any PSC/PCI, not limited to PSCs/PCIs of CSG or hybrid cells

3: The CSG SI acquisition delay is defined as the time between any occurrences that will trigger a SI decoding until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. The measurement reporting delay also excludes any RRC procedure delay which is defined in [16] when SI reading is initiated by a measurement control message.

For intra frequency CSG cells, CSG SI decoding is typically triggered when a cell with primary scrambling code in a preconfigured range meets the criteria for measurement reporting. For inter frequency CSG cells, CSG SI decoding is explicitly requested by RRC signalling.

The CSG SI reporting delay shall not be more than $T_{CSG\text{-}SI\text{-}Report}$ where $T_{CSG\text{-}SI\text{-}Report}$ in ms is given by

$$T_{CSG\text{-}SI\text{-}Report} = [630] + 40*SIB3\_REP$$

SIB3_REP is the repetition period at which the CSG cell schedules SIB3 blocks in units of frames

This requirement is applicable for CSG target cell configurations where the information required to make the SI report can be determined from the MIB and SIB3 alone, and SIB3 is not segmented into multiple TTI. Additionally, for the

requirement to be applicable, the reception conditions shall be [TBD] such that the system frame number of the target CSG cell, the MIB and SIB3 can each be successfully decoded in no more than four attempts.

Test requirement = RRC Procedure delay + $T_{CSG\text{-}SI\text{-}Report}$

Reference

1: 3GPP TS 25.331, clause 14.7a.2.

2: 3GPP TS 25.367, clause 8.1.2.

3: 3GPP TS 25.133, clause 5.13.2, A.5.11.2

8.3.12.1.3 Test purpose

1. To confirm that the UE can report the PSC of inter-frequency CSG cells and the PSC reported is within the range configured by the SRNC.
2. To confirm that the UE can report the Cell Identity, CSG ID and CSG membership indication of inter-frequency member CSG cells.

8.3.12.1.4 Method of test

Initial Condition

System Simulator:

2 cells – Cell 1 and Cell 4 are used.

The CSG id of the Cell4 is 2. Cell 1 does not broadcast CSG ID.

Cell1 is on f1.

Cell 4 is on f2.

The SIB3_REP of cell 4, i.e. SIB3 scheduling is 64.

User Equipment:

The UE Allowed CSG List contains CSG2.

The UE is PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports Compressed mode.
- UE supports the capability of inter-frequency SI acquisition for HO.

Test Procedure

Table 8.3.12.1-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.3.12.1-1

Parameter	Unit	Cell 1			Cell4		
Test Channel		1					
		T0	T1	T2	T0	T1	T2
CPICH_Ec	dBm/3.84MHz	-55	-78	-75	OFF	OFF	-60

Cell 1 is active. The UE is initially in CELL_DCH and has a radio bearer with the cell1.

At instant T0, the downlink is changed according to what is shown in table 8.3.12.1 -1. The SS then sets up inter-frequency measurements (event 2d), by sending a MEASUREMENT CONTROL message to the UE.

At instant T1, the downlink power is changed according to what is shown in table 8.3.12.1 -1. The UE shall thus send a MEASUREMENT REPORT with 2d event to the SS.

The SS sets up an intra-frequency measurement (event 1c) and an inter-frequency CSG measurement (event 2c), by sending separate MEASUREMENT CONTROL messages to the UE. Configuration of 1c event is to enable construction of CSG VAS active set in the UE.

The SS configures then compressed mode (if required), to prepare the UE for inter-frequency measurements, by sending a PHYSICAL CHANNEL RECONFIGURATION message on DCCH using AM-RLC. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

At instant T2, the downlink power is changed according to what is shown in table 8.3.12.1 -1. The UE shall thus send a MEASUREMENT REPORT with 2c event to the SS.

The SS then sets up SI acquisition of cell 4 by sending a MEASUREMENT CONTROL message to the UE. Compressed mode is started at the same time in that message (if required). And then the UE shall answer the cell identity, CSG ID and CSG membership indication of the cell 4.

Independent of the UE requiring compressed mode, the SS then continues by sending a PHYSICAL CHANNEL RECONFIGURATION message to the UE on DCCH using AM-RLC, to order it to perform timing reinitialised inter-frequency handover to cell4.

The UE shall then transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS when the inter-frequency handover has succeeded. In case the initial condition was CS-DCCH+DTCH_DCH, that message shall contain the IEs "COUNT-C activation time" and the IE "START list" (in the IE "Uplink counter synchronisation info"), indicating to the SS when and from which value to start incrementing the HFN part of the COUNT-C variable used for ciphering.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS changes the power of the two cells according to column T0 in table 8.3.12.1
2	←		MEASUREMENT CONTROL	The SS configures a measurement to the UE. Event 2d is configured.
3				The SS re-adjusts the downlink transmission power settings of the cell1 according to columns "T1" in table 8.3.12.1-1.
4	→		MEASUREMENT REPORT	The UE sends 2d event to the SS.
5	←		MEASUREMENT CONTROL	The SS configures an intra-frequency measurement with 1c event.
6	←		MEASUREMENT CONTROL	The SS configures a CSG inter-frequency measurement with Event 2c. If Compressed Mode is not required (refer ICS/IXIT) go to step 9
7	←		PHYSICAL CHANNELRECONFIGURATION	The SS instructs UE to begin compressed mode operation. (for FDD only)
8	→		PHYSICAL CHANNELRECONFIGURATION COMPLETE	(for FDD only)
9				The SS re-adjusts the downlink transmission power settings of the cells according to columns "T2" in table 8.3.12.1-1.
10	→		MEASUREMENT REPORT	The UE sends a measurement report including the measured PSCs for cell 4 and event 2c.
11	←		MEASUREMENT CONTROL	The SS configures the UE to perform SI acquisition and reporting of cell 4.
12				The UE performs SI acquisition to acquire the relevant system information from the cell4.
13	→		MEASUREMENT REPORT	The UE sends a measurement reporting including the cell identity, CSG ID and CSG membership indication of the cell 4.
14	←		PHYSICAL CHANNEL RECONFIGURATION	The SS orders the UE to perform timing re-initialised inter-frequency handover to cell 4.
15	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	After the UE has succeeded in performing the inter-frequency handover, it shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS using the new configuration
16	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	acknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
CHOICE Measurement type	
-Inter-frequency measurement	
- Inter-frequency cell info list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	Not present
- Cell for measurement	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Measurement validity	CELL_DCH state
- UE autonomous update mode	Not present
- CHOICE report criteria	
- Inter-frequency measurement reporting criteria	
- Parameters required for each event	
- Inter-frequency event identity	2d
- Threshold used frequency	-70dBm
- W used frequency	0.0
- Hysteresis	2(1dB)
- Time to trigger	5000ms
- Reporting cell status	Not present
Additional measurement list	Not present
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 4)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter-frequency measurement event results,
- CHOICE event result	
- Inter-frequency measurement event results	
- Inter-frequency event identity	2d

MEASUREMENT CONTROL (Step 5)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	acknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
CHOICE measurement type	Intra-frequency measurement
- intra-frequency measurement	
- Intra-frequency measurement objects list	
- Remove all intra-frequency cells	
- New intra-frequency cells	1
- Intra-frequency cell id	
- Cell info	
- Cell individual offset	0 (0dB)
- Reference time difference to cell	Not Present
- Read SFN number	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	100
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each events	
- Intra-frequency event identity	1c
- Hysteresis	4 (2dB)
- Replacement activation threshold	3
- Time to trigger	10 ms
- Amount of reporting	16
- Reporting interval	4000ms
- Reporting cell status	Not present

MEASUREMENT CONTROL (Step 6)

Information Element	Value/remark
Measurement identity	3
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	acknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
CHOICE measurement type	Inter-frequency measurement
- inter-frequency measurement	
- Inter-frequency cell info list	
- Inter-frequency cell removal	Not Present
- New inter-frequency cells	
- Inter-frequency cell id	4
- Frequency info	Frequency information of cell 4
- cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- Read SFN indicator	FALSE
- CHOICE mode	
-FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to primary scrambling code used for cell 4
- Primary CPICH Tx power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not present
- CSG Inter-frequency cell info	
- CSG Frequency info	
- Frequency info	Frequency of Cell 4
- CSG Inter-frequency cell info for the frequency	
- CSG cell info list	
- CHOICE *mode*	FDD
- Start PSC	300
- Number of PSCs	100
- Inter-frequency SI Acquisition	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Measurement validity	CELL_DCH state
- inter-frequency set update	
- UE autonomous update mode	On with no reporting
- CHOICE report criteria	
- Inter-frequency measurement reporting criteria	
- Parameters required for each event	
- Inter-frequency event identity	2c
- Hysteresis	2(1dB)
- Time to trigger	0 mSec
- Reporting cell status	Not present
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85 dBm
- W non used frequency	0
DPCH compressed mode status info	Not present

PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/remark	Version
Downlink information common for all radio links		
- Downlink DPCH info common for all RL		
- Timing Indication	Maintain	
- Downlink DPCH power control information		
- DPC mode	0 (Single)	
- CHOICE Mode	FDD	
- Power offset PPilot-DPDCH	0	
- DL rate matching restriction information	Not present	
- Spreading factor	Refer to the parameter set in TS 34.108	
- Fixed or flexible position	Flexible	
- TFCI existence	TRUE	
- Number of bits for Pilot bits (SF=128, 256)	Not present	
- DPCH compressed mode info		
- TGPSI	1	
- TGPS status flag	Activate	
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256	
- Transmission gap pattern sequence configuration parameters		
- TGMP	FDD Measurement	
- TGPRC	Infinity	
- TGSN	4	
- TGL1	7	
- TGL2	Not Present	
- TGD	Undefined	
- TGPL1	3	
- TGPL2	Not Present	R99 and Rel-4 only
- RPP	Mode 0	
- ITP	Mode 0	
- CHOICE UL/DL mode	UL and DL or DL only or UL only depending on UE capability	
- Downlink compressed mode method	SF/2	
- Uplink compressed mode method	SF/2 or Not present depending on UE capability	
- Downlink frame type	A	
- DeltaSIR1	20 (2.0)	
- DeltaSIRAfter1	10 (1.0)	
- DeltaSIR2	Not present	
- DeltaSIRAfter2	Not present	
- N identify abort	Not present	
- T Reconfirm abort	Not present	
- TX diversity mode	None	
- SSDT information	Not present	R99 and Rel-4 only
- Default DPCH offset value	Not present	

MEASUREMENT REPORT (Step 10)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter-frequency measurement event results,
- CHOICE event result	
- Inter-frequency measurement event results	
- Inter-frequency event identity	2c
- Inter-frequency cells	
- Frequency info	Set to same frequency as used for cell 4
- Non frequency related measurement event results	
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 4

MEASUREMENT CONTROL (Step 11)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement Identity	4
Measurement Command	Setup
CHOICE Measurement type	
- Inter-frequency measurement	
- Inter-frequency measurement objects list	
- Inter-frequency SI Acquisition	
- Frequency info	Set to same frequency as used for cell 4
- CHOICE mode	
- FDD	
- Primary scrambling code	Set to same scrambling code as used for cell 4
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	1
- Reporting interval	4000ms
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step13)

Information Element	Value/remark
Measurement identity	Check to see if set to 4
Measured Results	
-CHOICE Measurement	
- Inter-frequency measured results list	
- Inter-frequency measurement results	
- Frequency info	Set to same frequency as used for cell 4
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Set to 28-bit Cell identity as used for cell 4
- CSG Identity	Set to same code as used for cell 4(2)
- CSG Member indication	member
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 4
- CPICH Ec/N0	Check that this IE is absent
- CPICH RSCP	Check that this IE is present
- Pathloss	Check that this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 14)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/Remark
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	
- FDD	
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to cell4
Downlink information common for all radio links	
- CHOICE DPCH info	
- Downlink DPCH info common for all RL	
- Timing indication	Initialise
Downlink information per radio link list	1 radio link
- Downlink information for each radio link	
- CHOICE mode	FDD
- FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 4

8.3.12.1.5 Test requirement

At step 4, the UE sends 2d event to the cell1.

At step 10, the UE sends 2c event to the cell1 for Cell 4.

At step 13, The UE sends a measurement reporting including the cell identity, CSG ID and CSG membership indication of the cell 4 within 4000ms.

At step 15, UE sends Physical Channel Reconfiguration Complete message on uplink DCCH using AM RLC.

8.3.12.2 Inter-frequency inbound handover to UMTS CSG cell

8.3.12.2.1 Definition

Test to verify the UE can report the Cell Identity, CSG ID and CSG membership indication of inter-frequency CSG cells with reporting proximity indication.

8.3.12.2.2 Conformance requirement

1: Inter-frequency measurements for CSG/Hybrid cells:

For each cell reported in the IE "Cell measured results" of an inter-frequency Measurement Report, which is also included in the IE "Inter-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE;

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if CSG identity of the concerned cell is present in UE's CSG whitelist.

If the UE needs measurement gaps to read the system information on the non-used frequency, the system information of the reported cell can be acquired by the UE via autonomous measurement gaps when the IE "Inter-frequency SI Acquisition" is received by the UE, i.e., UE is allowed to temporarily abort communication with the serving cell to perform SI acquisition within the limits (detailed value is FFS). UE shall send the measurement report before the maximum provided time specified in IE "Periodical reporting criteria" if the UE is able to acquire SI early.

2: Inter-frequency Measurement Procedure of CSG and Hybrid cells:

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist. The CSG proximity indication includes the RAT and frequency of the cell.

3) The SRNC configures a measurement on the concerned frequency/RAT to measure CSG/hybrid cells. Compressed mode gaps, if required by the UE, are also activated to allow UE to perform measurements on the reported RAT and frequency. The network may also use the proximity indication to minimize the requesting of handover preparation information of CSG/hybrid cells by avoiding requesting such information when the UE is not in the geographical area where cells whose CSG IDs are in the UEs CSG whitelist are located.

4) The UE sends a measurement report including the measured PSCs/PCIs.

5) The SRNC configures the UE to perform SI acquisition and reporting of a particular PSC/PCI.

6) The UE performs SI acquisition using autonomous gaps, i.e., the UE may suspend reception and transmission with the SRNC within the limits (the limit is currently FFS) to acquire the relevant system information from the target HNB/HeNB.

7) The UE sends a measurement report including Cell Identity, CSG ID and CSG membership indication.

8) SRNC can then proceed with the handover processing. The handover processing for inter-frequency handover to a CSG/Hybrid cell is described in [6].

NOTE: The above steps also apply to inter-RAT mobility from UMTS cell to HeNB.

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements on the reported RAT and frequency.

In the above procedure, step 2 may not be performed in case the UE has not previously visited the HNB, e.g., when the UE first visits a CSG/hybrid cell.

The PSC/PCI confusion is resolved by steps 5, 6 and 7. The SRNC can request SI acquisition and reporting for any PSC/PCI, not limited to PSCs/PCIs of CSG or hybrid cells.

3: The CSG SI acquisition delay is defined as the time between any occurrences that will trigger a SI decoding until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. The measurement reporting delay also excludes any RRC procedure delay which is defined in [16] when SI reading is initiated by a measurement control message.

For intra frequency CSG cells, CSG SI decoding is typically triggered when a cell with primary scrambling code in a preconfigured range meets the criteria for measurement reporting. For inter frequency CSG cells, CSG SI decoding is explicitly requested by RRC signalling.

The CSG SI reporting delay shall not be more than $T_{CSG\text{-}SI\text{-}Report}$ where $T_{CSG\text{-}SI\text{-}Report}$ in ms is given by

$$T_{CSG\text{-}SI\text{-}Report} = [630] + 40*SIB3\_REP$$

SIB3_REP is the repetition period at which the CSG cell schedules SIB3 blocks in units of frames

This requirement is applicable for CSG target cell configurations where the information required to make the SI report can be determined from the MIB and SIB3 alone, and SIB3 is not segmented into multiple TTI. Additionally, for the requirement to be applicable, the reception conditions shall be [TBD] such that the system frame number of the target CSG cell, the MIB and SIB3 can each be successfully decoded in no more than four attempts.

Test requirement = RRC Procedure delay + $T_{CSG\text{-}SI\text{-}Report}$

Reference

1: 3GPP TS 25.331 clause 14.7a.2.

2: 3GPP TS 25.367, clause 8.1.2.

3: 3GPP TS 25.133, clause 5.13.2, A.5.11.2.

8.3.12.2.3 Test purpose

1. To confirm that the UE can report CSG proximity indication to the SRNC.
2. To confirm that the UE can report the Cell Identity, CSG ID and CSG membership indication of inter-frequency CSG cells.

8.3.12.2.4 Method of test

Initial Condition

System Simulator:

3 cells: Cell 1, cell 4 and cell5 are active.

The CSG id of the Cell4 is 2.

Cell 5 does not broadcast CSG ID.

The SIB3_REP of cell 4 SIB3 scheduling is 64.

User Equipment:

The UE Allowed CSG List contains CSG2.

The UE is PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports Compressed mode.
- UE supports Neighbour Cell SI acquisition capability.
- UE supports the capability of inter-frequency SI acquisition for HO.

Test Procedure

Table 8.3.12.2-1 illustrates the downlink power to be applied for the 3 cells.

Table 8.3.12.2-1

Parameter	Unit	Cell 1		Cell 4		Cell5	
Test Channel		1		2		3	
		T0	T1	T0	T1	T0	T1
CPICH Ec	dBm/3.84 MHz	-60	-70	-60	-55	-60	-80

The three cells are all active. The UE is initially in CELL_DCH and has a radio bearer with the cell1.

At instant T0, the downlink is changed according to what is shown in table 8.3.12.1 -1. The SS then activates the UE to detect the CSG proximity by sending a MEASUREMENT CONTROL message to the UE. The UE shall answer the CSG proximity indication to the cell1.

The SS sends MEASUREMENT CONTROL with 1c event to enable the CSG VAS active set in the UE.

The SS configures then compressed mode (if required), to prepare the UE for inter-frequency measurements, by sending a PHYSICAL CHANNEL RECONFIGURATION message on DCCH using AM-RLC. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS then sets up inter-frequency measurements (event 2b), by sending a MEASUREMENT CONTROL message to the UE. Compressed mode is started at the same time in that message (if required).

At instant T1, the downlink power is changed according to what is shown in table 8.3.12.1 -1. The UE shall thus send a MEASUREMENT REPORT with 2b event to the SS.

The SS then sets up SI acquisition of cell 4 by sending a MEASUREMENT CONTROL message to the UE. Compressed mode is started at the same time in that message (if required). And then the UE shall answer the cell identity, CSG ID and CSG membership indication of the cell 4.

Independent of the UE requiring compressed mode, the SS then continues by sending a PHYSICAL CHANNEL RECONFIGURATION message to the UE on DCCH using AM-RLC, to order it to perform timing reinitialised inter-frequency handover to cell4.

The UE shall then transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS when the inter-frequency handover has succeeded. In case the initial condition was CS-DCCH+DTCH_DCH, that message shall contain the IEs "COUNT-C activation time" and the IE "START list" (in the IE "Uplink counter synchronisation info"), indicating to the SS when and from which value to start incrementing the HFN part of the COUNT-C variable used for ciphering.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS changes the power of the cell1 and cell4 according to column T0 in table 8.3.12.2-1
2	←		MEASUREMENT CONTROL	The SS configures a measurement with detecting the CSG proximity to the UE.
3	→		MEASUREMENT REPORT	UE sends a report with the CSG proximity indication to the SS. The message includes the RAT and frequency of the cell4.
4	←		MEASUREMENT CONTROL	The SS configures a measurement with 1c event. The cell information is set to the same as the cell1. If Compressed Mode is not required (refer ICS/IXIT) go to step 7
5	←		PHYSICAL CHANNELRECONFIGURATION	SS instructs UE to begin compressed mode operation. (for FDD only)
6	→		PHYSICAL CHANNELRECONFIGURATION COMPLETE	(for FDD only)
7	←		MEASUREMENT CONTROL	The SS configures a measurement to measure cells. The message includes the PSC range, the compressed mode gaps and the parameters of the event 2b.
8				SS re-adjusts the downlink transmission power settings of the cell4 according to columns "T1" in table 8.3.12.2-1.
9	→		MEASUREMENT REPORT	The UE sends a measurement report including the measured PSCs for cell 4 and event 2b.
10	←		MEASUREMENT CONTROL	The SS configures the UE to perform SI acquisition and reporting of cell 4.
11				The UE performs SI acquisition to acquire the relevant system information from the cell4.
12	→		MEASUREMENT REPORT	The UE sends a measurement reporting including the cell identity, CSG ID and CSG membership indication of the cell 4.
13	←		PHYSICAL CHANNEL RECONFIGURATION	The SS orders the UE to perform timing re-initialised inter-frequency handover to cell 4.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	After the UE has succeeded in performing the inter-frequency handover, it shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS using the new configuration
15	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
CHOICE Measurement type	
- CSG Proximity detection	enable

MEASUREMENT REPORT (Step 3)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
CSG Proximity Indication	
- CSG Proximity Indication	entering
- CHOICE Radio Access Technology	
- UTRA	
- CSG Frequency info for UTRA	
- CHOICE mode	
- FDD	
- UARFCN uplink (Nu)	The same as Cell2
- UARFCN downlink (Nd)	The same as Cell2

MEASUREMENT CONTROL (Step 4)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
CHOICE measurement type	Intra-frequency measurement
- intra-frequency measurement	
- Intra-frequency measurement objects list	
- Cells for measurement	
- Intra-frequency cell id	Set to same code as used for cell 1
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each events	
- Intra-frequency event identity	1c
- Hysteresis	4 (2dB)
- Replacement activation threshold	3
- Time to trigger	10 ms
- Amount of reporting	16
- Reporting interval	4000ms
- Reporting cell status	Not present

PHYSICAL CHANNEL RECONFIGURATION (Step 5)

Use the same message sub-type found in TS 34.108, clause 9.

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 6)

Use the same message sub-type found in TS 34.108, clause 9.

MEASUREMENT CONTROL (Step 7)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	3
Measurement command	Setup
CHOICE Measurement type	
- Inter-frequency measurement objects list	
- New inter-frequency cells	
- Inter-frequency cell id	Set to same code as used for cell 4
- Frequency info	Set to same code as used for cell 4
- cell info	
- Cell individual offset	Set to same code as used for cell 4
- Read SFN indicator	Set to same code as used for cell 4
- CHOICE mode	
-FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 4(144)
-Inter-frequency measurement	
- Measurement validity	CELL_DCH state
- CHOICE report criteria	
- Inter-frequency measurement reporting criteria	
- Parameters required for each event	
- Inter-frequency event identity	2b
- Threshold used frequency	-65 dBm
- W used frequency	0.0
- Hysteresis	2(1dB)
- Time to trigger	10 ms
- Parameters required for each non-used frequency	
- Threshold non used frequency	-68 dBm
- W non used frequency	0

MEASUREMENT REPORT (Step 9)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter-frequency measurement event results,
- CHOICE event result	
- Inter-frequency measurement event results	
- Inter-frequency event identity	2b
- Inter-frequency cells	
- Frequency info	Set to same code as used for cell 4
- Non frequency related measurement event results	
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 4(144)

MEASUREMENT CONTROL (Step 10)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement Identity	4
Measurement Command	Setup
CHOICE Measurement type	
- Inter-frequency measurement	
- Inter-frequency measurement objects list	
- Cells for measurement	
- Inter-frequency cell id	Set to same code as used for cell 4
- Inter-frequency SI Acquisition	
- Frequency info	Set to same code as used for cell 4
- CHOICE mode	
- FDD	
- Primary scrambling code	Set to same code as used for cell 4(144)
- CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	1
- Reporting interval	4000 ms

MEASUREMENT REPORT (Step12)

Information Element	Value/remark
Measurement identity	Check to see if set to 4
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
Measured Results	
-CHOICE Measurement	
- Inter-frequency measured results list	
- Inter-frequency measurement results	
- Frequency info	Set to the Default
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Set to same code as used for cell 4
- CSG Identity	Set to same code as used for cell 4(2)
- CSG Member indication	member
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 4(144)

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/Remark
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	
- FDD	
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to cell4
Downlink information common for all radio links	
- CHOICE DPCH info	
- Downlink DPCH info common for all RL	
- Timing indication	Initialise
Downlink information per radio link list	1 radio link
- Downlink information for each radio link	
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 4(144)

8.3.12.2.5 Test requirement

At step 3, the UE sends CSG proximity indication to the cell1.

At step 9, the UE sends 2b event to the cell1.

At step 12, The UE sends a measurement reporting including the cell identity, CSG ID and CSG membership indication of the cell 4 within 4000ms.

At step 14, UE sends Physical Channel Reconfiguration Complete message on uplink DCCH using AM RLC.

8.3.12.3 Inter-frequency Measurements of UMTS CSG cell by non-member UE

8.3.12.3.1 Definition

Test to verify the UE can report the Cell Identity, CSG ID and CSG membership indication of a non-member CSG cell to the SRNC in the measurement report.

8.3.12.3.2 Conformance requirement

1: Inter-frequency measurements for CSG/Hybrid cells:

For each cell reported in the IE "Cell measured results" of an inter-frequency Measurement Report, which is also included in the IE "Inter-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE;

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if CSG identity of the concerned cell is present in UE's CSG whitelist.

If the UE needs measurement gaps to read the system information on the non-used frequency, the system information of the reported cell can be acquired by the UE via autonomous measurement gaps when the IE "Inter-frequency SI Acquisition" is received by the UE, i.e., UE is allowed to temporarily abort communication with the serving cell to perform SI acquisition within the limits (detailed value is FFS). UE shall send the measurement report before the maximum provided time specified in IE "Periodical reporting criteria" if the UE is able to acquire SI early.

2: Inter-frequency Measurement Procedure of CSG and Hybrid cells:

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist. The CSG proximity indication includes the RAT and frequency of the cell.

3) The SRNC configures a measurement on the concerned frequency/RAT to measure CSG/hybrid cells. Compressed mode gaps, if required by the UE, are also activated to allow UE to perform measurements on the reported RAT and frequency. The network may also use the proximity indication to minimize the requesting of handover preparation information of CSG/hybrid cells by avoiding requesting such information when the UE is not in the geographical area where cells whose CSG IDs are in the UEs CSG whitelist are located.

4) The UE sends a measurement report including the measured PSCs/PCIs.

5) The SRNC configures the UE to perform SI acquisition and reporting of a particular PSC/PCI.

6) The UE performs SI acquisition using autonomous gaps, i.e., the UE may suspend reception and transmission with the SRNC within the limits (the limit is currently FFS) to acquire the relevant system information from the target HNB/HeNB.

7) The UE sends a measurement report including Cell Identity, CSG ID and CSG membership indication.

8) SRNC can then proceed with the handover processing. The handover processing for inter-frequency handover to a CSG/Hybrid cell is described in [6].

NOTE: The above steps also apply to inter-RAT mobility from UMTS cell to HeNB.

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements on the reported RAT and frequency.

In the above procedure, step 2 may not be performed in case the UE has not previously visited the HNB, e.g., when the UE first visits a CSG/hybrid cell.

The PSC/PCI confusion is resolved by steps 5, 6 and 7. The SRNC can request SI acquisition and reporting for any PSC/PCI, not limited to PSCs/PCIs of CSG or hybrid cells.

3: The CSG SI acquisition delay is defined as the time between any occurrences that will trigger a SI decoding until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. The measurement reporting delay also excludes any RRC procedure delay which is defined in [16] when SI reading is initiated by a measurement control message.

For intra frequency CSG cells, CSG SI decoding is typically triggered when a cell with primary scrambling code in a preconfigured range meets the criteria for measurement reporting. For inter frequency CSG cells, CSG SI decoding is explicitly requested by RRC signalling.

The CSG SI reporting delay shall not be more than $T_{CSG\text{-}SI\text{-}Report}$ where $T_{CSG\text{-}SI\text{-}Report}$ in ms is given by

$$T_{CSG\text{-}SI\text{-}Report} = [630] + 40*SIB3\_REP$$

SIB3_REP is the repetition period at which the CSG cell schedules SIB3 blocks in units of frames

This requirement is applicable for CSG target cell configurations where the information required to make the SI report can be determined from the MIB and SIB3 alone, and SIB3 is not segmented into multiple TTI. Additionally, for the requirement to be applicable, the reception conditions shall be [TBD] such that the system frame number of the target CSG cell, the MIB and SIB3 can each be successfully decoded in no more than four attempts.

Test requirement = RRC Procedure delay + $T_{CSG\text{-}SI\text{-}Report}$

Reference

1: 3GPP TS 25.331 clause 14.7a.2.

2: 3GPP TS 25.367, clause 8.1.2.

3: 3GPP TS 25.133, clause 5.13.2, A.5.11.2.

8.3.12.3.3 Test purpose

1. To confirm that the UE can report the measurement report with non-member indication of the CSG cells to the SRNC.

8.3.12.3.4 Method of test

Initial Condition

System Simulator:

2cells: Cell 1, cell 4 are used.

The CSG id of the Cell4 is 2. Cell 1 does not broadcast CSG ID.

The SIB3_REP of cell 4, i.e., SIB3 scheduling is 64.

User Equipment:

The UE Allowed CSG List does not contain CSG2.

The UE is PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports Compressed mode.
- UE supports Neighbour Cell SI acquisition capability.
- UE supports the capability of inter-frequency SI acquisition for HO.

Test Procedure

Table 8.3.12.3-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.3.12.3-1

Parameter	Unit	Cell 1		Cell 4	
Test Channel		1		2	
		T0	T1	T0	T1
CPICH Ec	dBm/3.84 MHz	-60	-70	OFF	-55

Cell 1 is active. The UE is initially in CELL_DCH and has a radio bearer with the cell1.

At instant T0, the downlink is changed according to what is shown in table 8.3.12.1 -1. The SS sends MEASUREMENT CONTROL with 1c event required for construction of the CSG VAS active set in the UE.

The SS configures then compressed mode (if required), to prepare the UE for inter-frequency measurements, by sending a PHYSICAL CHANNEL RECONFIGURATION message on DCCH using AM-RLC. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS then sets up CSG inter-frequency measurements (event 2b), by sending a MEASUREMENT CONTROL message to the UE.

At instant T1, the downlink power is changed according to what is shown in table 8.3.12.1 -1. The UE shall thus send a MEASUREMENT REPORT with 2b event to the SS.

The SS then sets up SI acquisition of cell 4 by sending a MEASUREMENT CONTROL message to the UE. And then the UE shall report the cell identity, CSG ID and CSG membership indication of the cell 4.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS changes the power of the two cells according to column T0 in table 8.3.12.3-1
2	←		MEASUREMENT CONTROL	Cell1 configures a measurement with 1c event. The cell information is set to the same as the cell1. If Compressed Mode is not required (refer ICS/IXIT) go to step 5
3	←		PHYSICAL CHANNELRECONFIGURATION	SS instructs UE to begin compressed mode operation. (for FDD only)
4	→		PHYSICAL CHANNELRECONFIGURATION COMPLETE	(for FDD only)
5	←		MEASUREMENT CONTROL	The SS configures a measurement to measure cells. The message includes the PSC range the compressed mode gaps and the parameters of the event 2b.
6				SS re-adjusts the downlink transmission power settings of the two cells according to columns "T1" in table 8.3.12.3-1.
7	→		MEASUREMENT REPORT	The UE sends a measurement report including the measured PSCs for cell 4 and event 2b to cell 1.
8	←		MEASUREMENT CONTROL	The SS configures the UE to perform SI acquisition and reporting of cell 4.
9				The UE performs SI acquisition to acquire the relevant system information from the cell4.
10	→		MEASUREMENT REPORT	The UE sends a measurement reporting including the cell identity, CSG ID and CSG membership indication of the cell 4 within 4000ms.
11	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
CHOICE measurement type	Intra-frequency measurement
- intra-frequency measurement	
- Intra-frequency measurement objects list	
- Remove all intra-frequency cells	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 (0dB)
- Reference time difference to cell	Not Present
- Read SFN number	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	100
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	
- FDD	
- Measurement quantity	CPICH RSCP
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each events	
- Intra-frequency event identity	1c
- Hysteresis	4 (2dB)
- Replacement activation threshold	3
- Time to trigger	10 ms
- Amount of reporting	16
- Reporting interval	4000ms
- Reporting cell status	Not present

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/remark	Version
Downlink information common for all radio links		
- Downlink DPCH info common for all RL		
- Timing Indication	Maintain	
- Downlink DPCH power control information		
- DPC mode	0 (Single)	
- CHOICE Mode	FDD	
- Power offset PPilot-DPDCH	0	
- DL rate matching restriction information	Not present	
- Spreading factor	Refer to the parameter set in TS 34.108	
- Fixed or flexible position	Flexible	
- TFCI existence	TRUE	
- Number of bits for Pilot bits (SF=128, 256)	Not present	
- DPCH compressed mode info		
- TGPSI	1	
- TGPS status flag	Activate	
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256	
- Transmission gap pattern sequence configuration parameters		
- TGMP	FDD Measurement	
- TGPRC	Infinity	
- TGSN	4	
- TGL1	7	
- TGL2	Not Present	
- TGD	Undefined	
- TGPL1	3	
- TGPL2	Not Present	R99 and Rel-4 only
- RPP	Mode 0	
- ITP	Mode 0	
- CHOICE UL/DL mode	UL and DL or DL only or UL only depending on UE capability	
- Downlink compressed mode method	SF/2	
- Uplink compressed mode method	SF/2 or Not present depending on UE capability	
- Downlink frame type	A	
- DeltaSIR1	20 (2.0)	
- DeltaSIRAfter1	10 (1.0)	
- DeltaSIR2	Not present	
- DeltaSIRAfter2	Not present	
- N identify abort	Not present	
- T Reconfirm abort	Not present	
- TX diversity mode	None	
- SSDT information	Not present	R99 and Rel-4 only
- Default DPCH offset value	Not present	

MEASUREMENT CONTROL (Step 5)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Unacknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
CHOICE Measurement type	
-Inter-frequency measurement	
- Inter-frequency measurement objects list	
- Inter-frequency cell removal	Not Present
- New inter-frequency cells	
- Inter-frequency cell id	1
- Frequency info	Frequency information of cell 4
- cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	
-FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH Tx power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not present
- CSG Inter-frequency cell info	
- CSG Frequency info	
- Frequency info	Frequency of Cell 4
- CSG Inter-frequency cell info for the frequency	
- CSG cell info list	
- CHOICE *mode*	FDD
- Start PSC	300
- Number of PSCs	100
- Inter-frequency SI Acquisition	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Measurement validity	CELL_DCH state
- Inter-frequency set update	
- UE autonomous update mode	On with no reporting
- CHOICE report criteria	
- Inter-frequency measurement reporting criteria	
- Parameters required for each event	
- Inter-frequency event identity	2b
- Threshold used frequency	-65dBm
- W used frequency	0.0
- Hysteresis	2(1dB)
- Time to trigger	0 mSec
- Reporting cell status	Not present
- Parameters required for each non-used frequency	
- Threshold non used frequency	-68 dBm
- W non used frequency	0
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 2
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter-frequency measurement event results,
- CHOICE event result	
- Inter-frequency measurement event results	
- Inter-frequency event identity	2b
- Inter-frequency cells	
- Frequency info	Set to same frequency as used for cell 4
- Non frequency related measurement event results	
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 4

MEASUREMENT CONTROL (Step 8)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
CHOICE Measurement type	
- Inter-frequency measurement	
- Inter-frequency measurement objects list	
- Inter-frequency SI Acquisition	
- Frequency info	Set to same frequency as used for cell 4
- CHOICE mode	
- FDD	
- Primary scrambling code	Set to same scrambling as used for cell 4
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	1
- Reporting interval	4000ms
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step10)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
Measured Results	
-CHOICE Measurement	
- Inter-frequency measured results list	
- Inter-frequency measurement results	
- Frequency info	Set to the frequency of cell 4
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Set to 28-bit Cell identity as used for cell 4
- CSG Identity	Set to same code as used for cell 4(2)
- CSG Member indication	Not present
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 4
- CPICH Ec/N0	Check that this IE is absent
- CPICH RSCP	Check that this IE is present
- Pathloss	Check that this IE is absent

8.3.12.3.5 Test requirement

At step 7, the UE sends 2b event for cell 4 to cell1.

At step 10, The UE sends a measurement reporting including the cell identity, CSG ID and CSG membership (non-member) indication (which should be absent) of the cell 4 within 4000ms.

8.3.12.4 Intra-frequency inbound handover to UMTS CSG cell without specifying PSCs for SI Acquisition

8.3.12.4.1 Definition

Test to verify the UE can report the PSC, Cell Identity, CSG ID and CSG membership indication of intra-frequency CSG cells.

8.3.12.4.2 Conformance requirement

1.Intra-frequency measurements for CSG/Hybrid cells

For each cell reported in the IE "Cell measured results" of an intra-frequency Measurement Report, which is also included in the IE "Intra-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the valid system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE.

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if the concerned cell is CSG member cell.

The system information of the reported cell(s) can be acquired by the UE without any measurement gaps.

2: Intra-frequency Measurement Procedure of CSG and Hybrid cells:

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist.

3) If a measurement configuration for CSG/hybrid cells is not present, the SRNC configures the UE with relevant measurement configuration which includes the PSCs that the UE must measure and the PSCs for which SI acquisition should be performed. The network may use the CSG proximity indication for intra-frequency case to minimize the time during which measurements for CSG/hybrid cells are configured.

4) The UE sends a measurement report including the measured PSC, Cell Identity, CSG ID and CSG membership indication of the target HNB to the SRNC (e.g., due to a triggered intra-frequency event 1d). The UE can acquire MIB and SIB3/SIB4 of intra-frequency target HNB cells in parallel with reception of the serving cell transmissions in CELL_DCH. No measurement gaps are required for reading MIB and SIB3/SIB4.

5) SRNC can then proceeds with the handover processing as described in [6].

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements configured.

The PSC confusion is resolved by steps 3 and 4. The SRNC can request SI acquisition and reporting for any PSC, not limited to PSCs of CSG or hybrid cells.

Reference

1: 3GPP TS 25.331 v9.8 , clause 14.7a.1.

2: 3GPP TS 25.367 v9.5, clause 8.1.1.

8.3.12.4.3 Test purpose

1. To confirm that the UE can report the PSC of intra-frequency CSG cells.
2. To confirm that the UE can report the Cell Identity, CSG ID and CSG membership indication of intra-frequency CSG cells.

8.3.12.4.4 Method of test

Initial Condition

System Simulator:

2 cells: Cell 1 and Cell 2 are used.

Cell1 is active. Cell 1 does not broadcast CSG ID.

Cell2 is a CSG cell.

The CSG indicator of the cell2 is set to TRUE.

The CSG id of the Cell2 is 2.

The PSC of the cell 2 is 144.

User Equipment:

The UE Allowed CSG List contains CSG2.

The UE is PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports the capability of intra-frequency SI acquisition for HO.
- UE supports the capability of intra-frequency proximity indication.

Test Procedure

Table 8.3.12.4-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.3.12.4-1

Parameter	Unit	Cell 1			Cell 2		
Test Channel		1			2		
		T0	T1	T2	T0	T1	T2
CPICH Ec	dBm/3.84 MHz	-55	-55	-70	OFF	-70	-55

The UE is initially in cell_DCH state and has a radio bearer with the cell1. The initial condition is set as the instant T0 shown in table 8.3.12.4 -1.

The SS activates the UE to detect the CSG proximity by sending a MEASUREMENT CONTROL message to the UE.

At instant T1, the downlink is changed according to what is shown in table 8.3.12.4 -1. The UE shall answer the CSG proximity indication to the cell1.The SS then sets up intra-frequency measurements (event 1d), by sending a MEASUREMENT CONTROL message to the UE.

At instant T2, the downlink power is changed according to what is shown in table 8.3.12.4 -1. The UE shall thus send a MEASUREMENT REPORT with 1d event to the SS.

The SS sends ACTIVE SET UPDATE to the UE and commands the UE adds cell2 to the active set.

The UE shall then add the cell2 to the active set and handover to the cell2.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial condition is set as T0 in table8.3.12.4-1.
2	←		MEASUREMENT CONTROL	The SS configures a measurement with detecting the CSG proximity to the UE.
3				The SS re-adjusts the downlink transmission power settings of the cells according to columns "T1" in table 8.3.12.4-1.
4	→		MEASUREMENT REPORT	The UE sends a report with the CSG proximity indication to the SS. The message includes the RAT and frequency of the cell2.
5	←		MEASUREMENT CONTROL	The SS configures a measurement to the UE. Event 1d is configured.
6				The SS re-adjusts the downlink transmission power settings of the cell1 according to columns "T2" in table 8.3.12.4-1.
7	→		MEASUREMENT REPORT	The UE sends 1d event to the SS. The report includes the PSC, the cell identity, CSG ID and CSG membership indication of the cell 2.
8	←		ACTIVE SET UPDATE	The SS commands the UE to add cell 2 in active set.
9				The UE adds the cell2 to the active set and handover to the cell2.
10	→		ACTIVE SET UPDATE COMPLETE	
11	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
CHOICE Measurement type	
- CSG Proximity detection	
- UTRA CSG Proximity detection	enable

MEASUREMENT REPORT (Step 4)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
CSG Proximity Indication	
- CSG Proximity Indication	entering
- CHOICE *Radio Access Technology*	
- UTRA	
- CSG Frequency info for UTRA	
- CHOICE mode	
- FDD	
- UARFCN uplink (Nu)	The same as the cell2
- UARFCN downlink (Nd)	The same as the cell2

MEASUREMENT CONTROL (Step 5)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
CHOICE measurement type	
- Intra-frequency measurement	
- Intra-frequency cell info list	
- CSG Intra-frequency cell info	
- CSG Intra-frequency cell info	
- CSG cell info list	1
- Choice mode	
- FDD	
- Start PSC	
- Primary scrambling code	144
- Number of PSCs	5
- Intra-frequency SI Acquisition	
- CHOICE mode	
- FDD	For all PSC ranges specified in the "CSG Intra-frequency cell info" IE.
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	
- FDD	
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Measurement validity	CELL_DCH state
- CHOICE report criteria	
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	
- Intra-frequency event identity	1d
- Hysteresis	4(2dB)
- Time to trigger	
- Time to trigger	10 ms

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 2
Measured Results	
- CHOICE *Measurement*	
-Intra-frequency measured results list	
-Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	The same as the cell2
- CSG Identity	2
- CSG Member indication	member
- CHOICE *mode*	
-FDD	
- Primary CPICH info	
- Primary scrambling code	144(The same as the cell2)
Event results	Intra-frequency measurement event results,
- Intra-frequency measurement event results	
- Intra-frequency event identity	
- Intra-frequency event identity	1d
- Cell measurement event results	
- CHOICE *mode*	
-FDD	
- Primary CPICH info	
- Primary scrambling code	144(The same as the cell2)

ACTIVE SET UPDATE (Step 8)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link addition information	
- Radio link addition information	
- Primary CPICH info	
- Primary scrambling code	144(The same as the cell2)
- CHOICE *DPCH info*	
- Downlink DPCH info for each RL	
- CHOICE *mode*	
- FDD	
- Primary CPICH usage for channel estimation	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value: Default DPCH Offset Value (as currently stored in SS) mod 38 400
- DL channelisation code	
- Spreading factor	Reference to Parameter Set according to the clause 6.10 in TS 34.108
- Code number	0
- TPC combination index	
- TPC combination index	0
- Downlink F-DPCH info for each RL	
- Primary CPICH usage for channel estimation	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- F-DPCH frame offset	Set to value: Default DPCH Offset Value (as currently stored in SS) mod 38 400
- Code number	0
- TPC combination index	
- TPC combination index	0
Serving Cell Change Parameters	
- Serving Cell Change MAC reset	TRUE
- Serving Cell Change Message Type	RadioBearerSetup
- Serving Cell Change Transaction Id	0

ACTIVE SET UPDATE COMPLETE (Step 10)

Use the same message sub-type found in TS 34.108, clause 9.

8.3.12.4.5 Test requirement

At step 4, the UE sends CSG proximity indication to the cell1.

At step 7, the UE sends 1d event to the cell1 including the psc, cell identity, CSG ID and CSG membership indication of the cell 2.

At step 10, the UE sends Active Set Update Complete message on uplink DCCH using AM RLC.

8.3.12.5 Intra-frequency inbound handover to UMTS CSG cell without reporting proximity indication

8.3.12.5.1 Definition

Test to verify the UE can report Cell Identity, CSG ID and CSG membership indication of intra-frequency CSG cells.

8.3.12.5.2 Conformance requirement

1.Intra-frequency measurements for CSG/Hybrid cells

For each cell reported in the IE "Cell measured results" of an intra-frequency Measurement Report, which is also included in the IE "Intra-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the valid system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE.

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if CSG identity of the concerned cell is present in UE's CSG whitelist.

The system information of the reported cell(s) can be acquired by the UE without any measurement gaps.

2: Intra-frequency Measurement Procedure of CSG and Hybrid cells:

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist.

3) If a measurement configuration for CSG/hybrid cells is not present, the SRNC configures the UE with relevant measurement configuration which includes the PSCs that the UE must measure and the PSCs for which SI acquisition should be performed. The network may use the CSG proximity indication for intra-frequency case to minimize the time during which measurements for CSG/hybrid cells are configured.

4) The UE sends a measurement report including the measured PSC, Cell Identity, CSG ID and CSG membership indication of the target HNB to the SRNC (e.g., due to a triggered intra-frequency event 1d). The UE can acquire MIB and SIB3/SIB4 of intra-frequency target HNB cells in parallel with reception of the serving cell transmissions in CELL_DCH. No measurement gaps are required for reading MIB and SIB3/SIB4.

5) SRNC can then proceeds with the handover processing as described in [6].

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements configured.

The PSC confusion is resolved by steps 3 and 4. The SRNC can request SI acquisition and reporting for any PSC, not limited to PSCs of CSG or hybrid cells.

Reference

1: 3GPP TS 25.331, clause 14.7a.1.

2: 3GPP TS 25.367, clause 8.1.1.

8.3.12.5.3 Test purpose

1. To confirm that the UE considers CSG Set as the monitored set for measurement and measurement reporting procedures of intra-frequency CSG cells.

2. To confirm that the UE can report the Cell Identity, CSG ID and CSG membership indication of intra-frequency CSG cells.

8.3.12.5.4 Method of test

Initial Condition

System Simulator:

2 cells: Cell 1 and Cell 2 are used.

Cell1 is active. Cell1 does not broadcast CSG ID.

Cell2 is a CSG cell.

The "CSG Indicator" in MIB of the cell2 is set to TRUE.

The "CSG Identity" in SIB3 of the Cell2 is 2. "CSG PSC Split Information" is also included in SIB3 with "Start PSC" set to 144 and "Number of PSCs" set to 10.

The PSC of the cell 2 is 150.

The SIB3_REP of cell 2 SIB3 scheduling is 64.

User Equipment:

The UE Allowed CSG List contains CSG2.

The UE is PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports the capability "Support of intra-frequency SI acquisition for HO".

Test Procedure

Table 8.3.12.5-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.3.12.5-1

Parameter	Unit	Cell 1		Cell 2	
Test Channel		1		1	
		T0	T1	T0	T1
CPICH Ec	dBm/3.84 MHz	-55	-70	OFF	-55

The UE is initially in cell_DCH state and has a radio bearer with the cell1. The initial condition is set as the instant T0 shown in table 8.3.12.5 -1.

The SS then sets up intra-frequency measurements (event 1d), by sending a MEASUREMENT CONTROL message to the UE.

At instant T1, the downlink is changed according to what is shown in table 8.3.12.5 -1. The UE shall thus send a MEASUREMENT REPORT with 1d event to the SS.

The SS configures the PSC range for SI acquisition to UE. The UE acquires the SI of the cell2 and sends it to the SS with the cell identity, CSG ID and membership indication.

The UE shall handover to the cell2.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial condition is set as T0 in table 8.3.12.5-1.
2	←		MEASUREMENT CONTROL	The SS configures a measurement to the UE. Event 1d is configured.
3				The SS re-adjusts the downlink transmission power settings of the cell1 and Cell 2 according to columns "T1" in table 8.3.12.5-1.
4	→		MEASUREMENT REPORT	The UE sends a 1d event with the PSC of cell2.
5	←		MEASUREMENT CONTROL	The SS configures the PSC range for SI acquisition.
6				The UE acquires the SI of the cell2.
7	→		MEASUREMENT REPORT	The UE reports the cell identity, CSG ID and CSG membership indication of the cell 2.
8	←		PHYSICAL CHANNEL RECONFIGURATION	The SS orders the UE to perform timing re-initialised intra-frequency handover to cell 2.
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	After the UE has succeeded in performing the intra-frequency handover, it shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS using the new configuration
10	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
CHOICE measurement type	
- Intra-frequency measurement	
- Intra-frequency cell info list	
- Remove all intra-frequency cells	
- New intra-frequency cells	
- Intra-frequency cell-id	
- Cell info	1
- Cell individual offset	0 (0dB)
- Reference time difference to cell	Not Present
- Read SFN number	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	100
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- CSG Intra-frequency cell info	
- CSG Intra-frequency cell info	
- CSG cell info list	1
- Choice mode	
- FDD	
- Start PSC	
- Primary scrambling code	144
- Number of PSCs	10
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	
- FDD	
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not Present
- Measurement validity	CELL_DCH state
- CHOICE report criteria	
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	
- Intra-frequency event identity	1d
- Triggering condition 2	Monitored set cells
- Hysteresis	4(2dB)
- Time to trigger	
- Time to trigger	10 ms
- Reporting cell status	
- CHOICE reported cell	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	2

MEASUREMENT REPORT (Step 4)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	Check to see if set to 1
Measured Results	
- Intra-frequency measured results	Check to see if measurement results for Cell-2 are included and Cell-1 are not included.
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Intra-frequency measurement event results,
- Intra-frequency measurement event results	
- Intra-frequency event identity	
- Intra-frequency event identity	1d
- Cell measurement event results	
- CHOICE *mode*	
-FDD	
- Primary CPICH info	
- Primary scrambling code	150(The same as the cell2)

MEASUREMENT CONTROL (Step 5)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Setup
CHOICE Measurement type	
- Intra-frequency measurement	
- Intra-frequency cell info list	
- Intra-frequency SI Acquisition	
- CHOICE mode	
- FDD	
- Intra-frequency SI Acquisition info	
- Primary Scrambling code	
- Primary CPICH info	
- Primary Scrambling code	Set to same code as used for cell 2(150)
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	
- FDD	
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for detected set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within detected set on used frequency
- Maximum number of reported cells	2
- Measurement validity	Not Present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	4000 ms

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	Check to see if set to 2
Measured Results	
- CHOICE *Measurement*	
-Intra-frequency measured results list	
-Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	The same as the cell2
- CSG Identity	2
- CSG Member indication	member
- CHOICE *mode*	
-FDD	
- Primary CPICH info	
- Primary scrambling code	150(The same as the cell2)
- CPICH Ec/N0	Check that this IE is absent
- CPICH RSCP	Check that this IE is present
- Pathloss	Check that this IE is absent
Measured results on RACH	Check that this IE is absent
Additional measured results	Check that this IE is absent
Event results	Check that this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 8)

Use the same contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case as found in TS 34.108, clause 9, with sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" with the following exceptions:

Information Element	Value/Remark
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	
- FDD	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to cell2
Downlink information common for all radio links	
- CHOICE DPCH info	
- Downlink DPCH info common for all RL	
- Timing indication	Initialise
Downlink information for each radio links	
- CHOICE mode	FDD
- FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 2(150)

8.3.12.5.5 Test requirement

At step 4, the UE sends event 1d with the information of the cell2.

At step 7, the UE sends cell identity, CSG ID and CSG membership indication of the cell2 within 4000 ms.

At step 9, the UE sends Physical Channel Reconfiguration Complete on uplink DCCH using AM RLC.

8.3.12.6 Intra-frequency inbound handover to UMTS CSG cell

8.3.12.6.1 Definition

Test to verify the UE can report the Cell Identity, CSG ID and CSG membership indication of intra-frequency CSG cells.

8.3.12.6.2 Conformance requirement

1: Intra-frequency measurements for CSG/Hybrid cells

For each cell reported in the IE "Cell measured results" of an intra-frequency Measurement Report, which is also included in the IE "Intra-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the valid system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE.

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if the concerned cell is CSG member cell.

The system information of the reported cell(s) can be acquired by the UE without any measurement gaps.

2: Intra-frequency Measurement Procedure of CSG and Hybrid cells:

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist.

3) If a measurement configuration for CSG/hybrid cells is not present, the SRNC configures the UE with relevant measurement configuration which includes the PSCs that the UE must measure and the PSCs for which SI acquisition should be performed. The network may use the CSG proximity indication for intra-frequency case to minimize the time during which measurements for CSG/hybrid cells are configured.

4) The UE sends a measurement report including the measured PSC, Cell Identity, CSG ID and CSG membership indication of the target HNB to the SRNC (e.g., due to a triggered intra-frequency event 1d). The UE can acquire MIB and SIB3/SIB4 of intra-frequency target HNB cells in parallel with reception of the serving cell transmissions in CELL_DCH. No measurement gaps are required for reading MIB and SIB3/SIB4.

5) SRNC can then proceeds with the handover processing as described in [6].

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements configured.

The PSC confusion is resolved by steps 3 and 4. The SRNC can request SI acquisition and reporting for any PSC, not limited to PSCs of CSG or hybrid cells.

Reference

1: 3GPP TS 25.331 v9.8, clause 14.7a.1.

2: 3GPP TS 25.367 v.9.5, clause 8.1.1.

8.3.12.6.3 Test purpose

1. To confirm that the UE can report an "entering" CSG proximity indication as the SRNC configured
2. To confirm that the UE can report the PSC of intra-frequency CSG cells.
3. To confirm that the UE can report the Cell Identity, CSG ID and CSG membership indication of intra-frequency CSG cells.

8.3.12.6.4 Method of test

Initial Condition

System Simulator:

2 cells: Cell 1 and Cell 2 are used.

Cell1 is active. Cell1 does not broadcast CSG ID.

Cell2 is a CSG cell.

The CSG indicator of the cell2 is set to TRUE.

The CSG id of the Cell2 is 2.

The PSC of the cell 2 is 144.

User Equipment:

The UE Allowed CSG List contains CSG2.

The UE is PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports the capability of intra-frequency SI acquisition for HO.

- UE supports the capability of intra-frequency proximity indication.

Test Procedure

Table 8.3.12.6-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.3.12.6-1

Parameter	Unit	Cell 1			Cell 2		
Test Channel		1			2		
		T0	T1	T2	T0	T1	T2
CPICH Ec	dBm/3.84 MHz	-55	-55	-70	OFF	-60	-55

The UE is initially in cell_DCH state and has a radio bearer with the cell1. The initial condition is set as the instant T0 shown in table 8.3.12.6 -1.

The SS then activates the UE to detect the CSG proximity by sending a MEASUREMENT CONTROL message to the UE.

At instant T1, the downlink is changed according to what is shown in table 8.3.12.6 -1. The UE shall answer the CSG proximity indication to the cell1.The SS then sets up intra-frequency measurements (event 1d), by sending a MEASUREMENT CONTROL message to the UE.

At instant T2, the downlink power is changed according to what is shown in table 8.3.12.6 -1. The UE shall thus send a MEASUREMENT REPORT with 1d event to the SS with the PSC of the cell2.

The SS configures the PSC range for SI acquisition to UE. The UE acquires the SI of the cell2 and sends it to the SS with the cell identity, CSG ID and membership indication.

The SS sends ACTIVE SET UPDATE to the UE and commands the UE adds cell2 to the active set.

The UE shall then add the cell2 to the active set and handover to the cell2.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial condition is set as T0 in table 8.3.12.6-1.
2	←		MEASUREMENT CONTROL	The SS configures a measurement with detecting the CSG proximity to the UE.
3				The SS re-adjusts the downlink transmission power settings of the cell1 according to columns "T1" in table 8.3.12.6-1.
4	→		MEASUREMENT REPORT	The UE sends a report with the CSG proximity indication to the SS.
5	←		MEASUREMENT CONTROL	The SS configures a measurement to the UE. Event 1d is configured.
6				The SS re-adjusts the downlink transmission power settings of the cell1 according to columns "T2" in table 8.3.12.6-1.
7	→		MEASUREMENT REPORT	The UE sends a 1d event with the PSC of cell2.
8	←		MEASUREMENT CONTROL	The SS configures the PSC range for SI acquisition.
9				The UE acquires the SI of the cell2.
10	→		MEASUREMENT REPORT	The UE reports the cell identity, CSG ID and CSG membership indication of the cell 2.
11	←		ACTIVE SET UPDATE	The SS commands the UE to add cell 2 in active set and handover.
12				The UE adds the cell2 to the active set and handover to the cell2.
13	→		ACTIVE SET UPDATE COMPLETE	
14	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
CHOICE Measurement type	
- CSG Proximity detection	
- UTRA CSG Proximity detection	enable

MEASUREMENT REPORT (Step 4)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
CSG Proximity Indication	
- CSG Proximity Indication	entering
- CHOICE *Radio Access Technology*	
- UTRA	
- CSG Frequency info for UTRA	
- CHOICE mode	
- FDD	
- UARFCN uplink (Nu)	The same as the cell2
- UARFCN downlink (Nd)	The same as the cell2

MEASUREMENT CONTROL (Step 5)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
CHOICE measurement type	
- Intra-frequency measurement	
- Intra-frequency cell info list	
- CSG Intra-frequency cell info	
- CSG Intra-frequency cell info	
- CSG cell info list	1
- Choice mode	
- FDD	
- Start PSC	
- Primary scrambling code	144
- Number of PSCs	5
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	
- FDD	
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Measurement validity	CELL_DCH state
- CHOICE report criteria	
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	
- Intra-frequency event identity	1d
- Hysteresis	4(2dB)
- Time to trigger	
- Time to trigger	10 mSec

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 2
Event results	Intra-frequency measurement event results,
- Intra-frequency measurement event results	
- Intra-frequency event identity	
- Intra-frequency event identity	1d
- Cell measurement event results	
- CHOICE *mode*	
-FDD	
- Primary CPICH info	
- Primary scrambling code	144(The same as the cell2)

MEASUREMENT CONTROL (Step 8)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
CHOICE Measurement type	
- Intra-frequency measurement	
- Intra-frequency measurement objects list	
- Intra-frequency SI Acquisition	
- CHOICE mode	
- FDD	
- Inter-frequency SI Acquisition info	
- Primary Scrambling code	
- Primary Scrambling code	Set to same code as used for cell 2(144)

MEASUREMENT REPORT (Step 10)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE *Measurement*	
-Intra-frequency measured results list	
-Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	The same as the cell2
- CSG Identity	2
- CSG Member indication	member
- CHOICE *mode*	
-FDD	
- Primary CPICH info	
- Primary scrambling code	144(The same as the cell2)

ACTIVE SET UPDATE (Step 11)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link addition information	
- Radio link addition information	
- Primary CPICH info	
- Primary scrambling code	144(The same as the cell2)
- CHOICE *DPCH info*	
- Downlink DPCH info for each RL	
- CHOICE *mode*	
- FDD	
- Primary CPICH usage for channel estimation	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value: Default DPCH Offset Value (as currently stored in SS) mod 38 400
- DL channelisation code	
- Spreading factor	Reference to Parameter Set according to the clause 6.10 in TS 34.108
- Code number	0
- TPC combination index	
- TPC combination index	0
- Downlink F-DPCH info for each RL	
- Primary CPICH usage for channel estimation	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- F-DPCH frame offset	Set to value: Default DPCH Offset Value (as currently stored in SS) mod 38 400
- Code number	0
- TPC combination index	
- TPC combination index	0
Serving Cell Change Parameters	
- Serving Cell Change MAC reset	TRUE
- Serving Cell Change Message Type	RadioBearerSetup
- Serving Cell Change Transaction Id	0

ACTIVE SET UPDATE COMPLETE (Step 13)

Use the same message sub-type found in TS 34.108, clause 9.

8.3.12.6.6 Test requirement

At step 4, the UE sends CSG proximity indication to the SS.

At step 7, the UE sends 1d event to the SS including the PSC of the cell 2.

At step 10, the UE sends the cell identity, CSG ID and CSG membership indication of the cell 2 to the SS.

At step 13, the UE sends Active Set Update Complete message on uplink DCCH using AM RLC.

8.3.12.7 Intra-frequency Measurements for UMTS CSG Cell for Non-member UE

8.3.12.7.1 Definition

Test to verify that the UE can report the CSG ID and Cell Identity of the not-allowed intra-frequency CSG cell.

8.3.12.7.2 Conformance requirement

1. Intra-frequency measurements for CSG/Hybrid cells

For each cell reported in the IE "Cell measured results" of an intra-frequency Measurement Report, which is also included in the IE "Intra-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the valid system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE.

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if CSG identity of the concerned cell is present in UE's CSG whitelist.

2. CSG/Hybrid Cell Intra-frequency Measurement Procedure

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist.

3) If a measurement configuration for CSG/hybrid cells is not present, the SRNC configures the UE with relevant measurement configuration which includes the PSCs that the UE must measure and the PSCs for which SI acquisition should be performed. The network may use the CSG proximity indication for intra-frequency case to minimize the time during which measurements for CSG/hybrid cells are configured.

4) The UE sends a measurement report including the measured PSC, Cell Identity, CSG ID and CSG membership indication of the target HNB to the SRNC (e.g., due to a triggered intra-frequency event 1d). The UE can acquire MIB and SIB3/SIB4 of intra-frequency target HNB cells in parallel with reception of the serving cell transmissions in CELL_DCH. No measurement gaps are required for reading MIB and SIB3/SIB4.

5) SRNC can then proceeds with the handover processing as described in [6].

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements configured.

The PSC confusion is resolved by steps 3 and 4. The SRNC can request SI acquisition and reporting for any PSC, not limited to PSCs of CSG or hybrid cells.

Reference

1. TS 25.331 clause 14.7a.1

2. TS 25.367 clause 8.1.1

8.3.12.7.3 Test purpose

1. To confirm that the UE considers CSG Set as the monitored set for measurement and measurement reporting procedures of intra-frequency CSG cells.

2. To verify that the UE could report the Cell Identity and CSG ID of the not-allowed intra-frequency CSG cell.

8.3.12.7.4 Method of test

Initial conditions

System Simulator

2 cells: Cell 1 and 2 are active.

Cell 1 does not broadcast CSG ID.

Cell2 is a CSG cell.

The "CSG Indicator" in MIB of the cell2 is set to TRUE.

Cell 2 is a CSG HNB cell with the CSG ID of CSG 1. "CSG PSC Split Information" is also included in SIB3 with "Start PSC" set to 144 and "Number of PSCs" set to 10.

The Primary Scrambling Code of Cell 2 is 150.

The SIB3_REP of cell 2 SIB3 scheduling is 64.

UE: CS-DCCH+DTCH_DCH (State 6-9) or PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

The UE's Allowed CSG List and the Operator CSG List are empty.

Related ICS/IXIT statement(s)

- UE supports FDD and CSG.

- UE supports the capability "Support of intra-frequency SI acquisition for HO".

Test Procedure

Table 8.3.12.7-1 illustrates the downlink power to be applied for the 3 cells.

Table 8.3.12.7-1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
Test Channel		1		1	
CPICH Ec	dBm/3.84MHz	-60	-85	-90	-55

The two cells are all active. The UE is initially in CELL_DCH and has a radio bearer with the cell1.

SS configures its downlink transmission power settings according to columns "T0" in table 8.3.12.7-1. The SS configures the UE the PSC range of the intra-frequency HNB cells with a MEASUREMENT CONTROL message configuring event 1D "Change of best cell".

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.12.7-1. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2.

After the MEASUREMENT REPORT message is received, the SS transmits to the UE a MEASUREMENT CONTROL message to configure the UE to read the SI of the cell 2. When the UE receives this message, the UE shall perform the SI acquisition of the cell 2 and transmits a MEASUREMENT REPORT message.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	SS			The SS actives the cell 1and cell 2 according to column T0 in table 8.3.12.7-1
2	←		MEASUREMENT CONTROL	The SS configures a measurement with 1d event and CSG Intra-frequency cell info.
3	SS			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.12.7-1.
4	→		MEASUREMENT REPORT	The UE sends a measurement report including the measured PSC for cell 2 and event 1D.
5	←		MEASUREMENT CONTROL	The SS instructs the UE to perform SI acquisition of cell 2.
6	→		MEASUREMENT REPORT	The UE sends a measurement reporting including the Cell identity and CSG ID, not including the CSG membership indication of the cell 2.
7	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

MEASUREMENT CONTROL (Step 2)

Use the same message in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
Periodic reporting / Event trigger reporting mode	Event trigger
- CHOICE measurement type	Intra-frequency measurement
- Intra-frequency measurement	
- Intra-frequency cell info list	
- Intra-frequency cell removal	Not present
- New inter-frequency info list	
- Intra-frequency cell-id	
- Cell info	1
- Cell individual offset	0 (0dB)
- Reference time difference to cell	Not Present
- Read SFN number	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	100
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- CSG Intra-frequency cell info	
- CSG cell info list	1
- Choice mode	FDD
- FDD	
- Start PSC	144
- Number of PSCs	10
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- Measurement validity	CELL_DCH state
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each events	
- Intra-frequency event identity	1D
- Triggering condition 2	Monitored set cells
- Hysteresis	4(2dB)
- Time to trigger	10 mSec
- Reporting cell status	
- CHOICE reported cell	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	2

MEASUREMENT REPORT (Step 4)

Use the same message in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	Check to see if set to 1
Measured results	
- Intra-frequency measured results	Check to see if measurement results for Cell-2 are included and Cell-1 are not included.
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional Measured results	Check to see if this IE is absent
Event results	Check to see if set to "Intra-frequency event results"
- Intra-frequency event identity	Check to see if set to "1D"
- Cell measurement event results	
- Primary scrambling code	Check to see if set to "Primary scrambling code of Cell 2"

MEASUREMENT CONTROL (Step 5)

Use the same message in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
- CHOICE measurement type	Intra-frequency measurement
- Intra-frequency measurement	
- Intra-frequency cell info list	
- Intra-frequency cell removal	Not present
- New inter-frequency info list	Not present
- Intra-frequency SI Acquisition	
- Choice mode	FDD
- FDD	
- Intra-frequency SI acquisition Info	
- Primary Scrambling Code	Set to same code as used for cell 2(150)
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for detected set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within detected set on used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	4000 msec

MEASUREMENT REPORT (Step 6)

Use the same message in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	Check to see if set to 2
Measured results	
- Intra-frequency measured results list	
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if set to "Cell Identity of Cell 2"
- CSG Identity	Check to see if set to "CSG Identity of Cell 2 (CSG 1)"
- CSG Member indication	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- CHOICE *mode*	FDD
- FDD	
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code for cell 2
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured results on RACH	Check to see if this IE is absent
Additional Measured results	Check to see if this IE is absent
Event results	Check that this IE is absent

8.3.12.7.5 Test Requirements

At step 4, the UE shall send a MEASUREMENT REPORT message including the measured PSC for cell 2 and event 1D.

At step 6, the UE shall send a MEASUREMENT REPORT message including the cell identity and CSG ID of the cell 2 within 4000 msec.

8.3.12.8 Intra-frequency Inbound Handover to UMTS Hybrid Cell

8.3.12.8.1 Definition

Test to verify that the UE can report the CSG ID, Cell Identity and CSG membership indication of the intra-frequency hybrid cell.

8.3.12.8.2 Conformance requirement

1. Intra-frequency measurements for CSG/Hybrid cells

For each cell reported in the IE "Cell measured results" of an intra-frequency Measurement Report, which is also included in the IE "Intra-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the valid system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE.

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if CSG identity of the concerned cell is present in UE's CSG whitelist.

2. CSG/Hybrid Cell Intra-frequency Measurement Procedure

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist.

3) If a measurement configuration for CSG/hybrid cells is not present, the SRNC configures the UE with relevant measurement configuration which includes the PSCs that the UE must measure and the PSCs for which SI acquisition should be performed. The network may use the CSG proximity indication for intra-frequency case to minimize the time during which measurements for CSG/hybrid cells are configured.

4) The UE sends a measurement report including the measured PSC, Cell Identity, CSG ID and CSG membership indication of the target HNB to the SRNC (e.g., due to a triggered intra-frequency event 1d). The UE can acquire MIB and SIB3/SIB4 of intra-frequency target HNB cells in parallel with reception of the serving cell transmissions in CELL_DCH. No measurement gaps are required for reading MIB and SIB3/SIB4.

5) SRNC can then proceeds with the handover processing as described in [6].

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements configured.

The PSC confusion is resolved by steps 3 and 4. The SRNC can request SI acquisition and reporting for any PSC, not limited to PSCs of CSG or hybrid cells.

Reference

1. TS 25.331 clause 14.7a.1

2. TS 25.367 clause 8.1.1

8.3.12.8.3 Test purpose

1. To confirm that the UE considers CSG Set as the monitored set for measurement and measurement reporting procedures of intra-frequency CSG cells.

2. To verify that the member UE could report the Cell Identity, CSG ID and CSG membership indication of the intra-frequency hybrid cell and handover to it.

8.3.12.8.4 Method of test

Initial conditions

System Simulator

2 cells: Cell 1 and 2 are active.

Cell 1 does not broadcast CSG ID.

Cell 2 is a hybrid cell with the CSG ID of CSG 2. "CSG PSC Split Information" is also included in SIB3 with "Start PSC" set to 144 and "Number of PSCs" set to 10.

The Primary Scrambling Code of Cell 2 is 150.

The SIB3_REP of cell 2 SIB3 scheduling is 64.

UE: CS-DCCH+DTCH_DCH (State 6-9) or PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

The UE's Allowed CSG List and the Operator CSG List contain CSG2.

Related ICS/IXIT statement(s)

- UE supports FDD and CSG.

- UE supports the capability “Support of intra-frequency SI acquisition for HO”.

Test Procedure

Same test procedure as in clause 8.3.12.5.

Expected sequence

Same expected sequence as in clause 8.3.12.5.

Specific Message Contents

Same specific message content as in clause 8.3.12.5.

8.3.12.8.5 Test Requirements

Same test requirement as in clause 8.3.12.5.

8.3.12.9 Intra-frequency Inbound Handover to UMTS Hybrid Cell for Non-member UE

8.3.12.9.1 Definition

Test to verify that the non-member UE can report the CSG ID and Cell Identity of the intra-frequency hybrid cell.

8.3.12.9.2 Conformance requirement

1. Intra-frequency measurements for CSG/Hybrid cells

For each cell reported in the IE "Cell measured results" of an intra-frequency Measurement Report, which is also included in the IE "Intra-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the valid system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE.

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if CSG identity of the concerned cell is present in UE’s CSG whitelist.

2. CSG/Hybrid Cell Intra-frequency Measurement Procedure

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE’s CSG whitelist.

3) If a measurement configuration for CSG/hybrid cells is not present, the SRNC configures the UE with relevant measurement configuration which includes the PSCs that the UE must measure and the PSCs for which SI acquisition should be performed. The network may use the CSG proximity indication for intra-frequency case to minimize the time during which measurements for CSG/hybrid cells are configured.

4) The UE sends a measurement report including the measured PSC, Cell Identity, CSG ID and CSG membership indication of the target HNB to the SRNC (e.g., due to a triggered intra-frequency event 1d). The UE can acquire MIB and SIB3/SIB4 of intra-frequency target HNB cells in parallel with reception of the serving cell transmissions in CELL_DCH. No measurement gaps are required for reading MIB and SIB3/SIB4.

5) SRNC can then proceeds with the handover processing as described in [6].

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE’s CSG whitelist, the UE sends a “leaving” CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements configured.

The PSC confusion is resolved by steps 3 and 4. The SRNC can request SI acquisition and reporting for any PSC, not limited to PSCs of CSG or hybrid cells.

Reference

1. TS 25.331 clause 14.7a.1

2. TS 25.367 clause 8.1.1

8.3.12.9.3 Test purpose

1. To confirm that the UE considers CSG Set as the monitored set for measurement and measurement reporting procedures of intra-frequency CSG cells.

2. To verify that the non-member UE could report the Cell Identity and CSG ID of the intra-frequency hybrid cell and handover to it..

8.3.12.9.4 Method of test

Initial conditions

System Simulator

2 cells: Cell 1 and 2 are active.

Cell 1 does not broadcast CSG ID.

Cell 2 is a hybrid cell with the CSG ID of CSG 1. "CSG PSC Split Information" is also included in SIB3 with "Start PSC" set to 144 and "Number of PSCs" set to 10.

The Primary Scrambling Code of Cell 2 is 150.

The Cell 2 is not in the neighbour cell list of Cell 1.

The SIB3_REP of cell 2 SIB3 scheduling is 64.

UE: CS-DCCH+DTCH_DCH (State 6-9) or PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

The UE's Allowed CSG List and the Operator CSG List are empty.

Related ICS/IXIT statement(s)

- UE supports FDD and CSG.
- UE supports the capability "Support of intra-frequency SI acquisition for HO".

Test Procedure

Table 8.3.12.9-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.3.12.9-1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
Test Channel		1		1	
CPICH Ec	dBm/3.84MHz	-60	-85	-90	-55

The two cells are all active. The UE is initially in CELL_DCH and has a radio bearer with the cell 1.

SS configures its downlink transmission power settings according to columns "T0" in table 8.3.12.7-1. The SS configures the UE the PSC range of the intra-frequency HNB cells with a MEASUREMENT CONTROL message configuring event 1D "Change of best cell".

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.12.9-1. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2.

After the MEASUREMENT REPORT message is received, the SS transmits to the UE a MEASUREMENT CONTROL message to configure the UE to read the system information of the cell 2. When the UE receives this message, the UE shall perform the SI acquisition of the cell 2 and transmits a MEASUREMENT REPORT message.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE on DCCH using AM-RLC, to order it to perform intra-frequency handover to cell 4. The UE shall then transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS when the intra-frequency handover has succeeded.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	SS			The SS actives the cell 1and cell 2 according to column T0 in table 8.3.12.9-1
2	←		MEASUREMENT CONTROL	The SS configures a measurement with 1d event and CSG Intra-frequency cell info.
3	SS			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.12.9-1.
4	→		MEASUREMENT REPORT	The UE sends a measurement report including the measured PSC for cell 2 and event 1D.
5	←		MEASUREMENT CONTROL	The SS instructs the UE to perform SI acquisition of cell 2.
6	→		MEASUREMENT REPORT	The UE sends a measurement reporting including the Cell identity and CSG ID, not including CSG membership indication of the cell 2.
7	←		PHYSICAL CHANNEL RECONFIGURATION	The SS orders the UE to perform intra-frequency handover to cell 2.
8	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	After the UE has succeeded in performing the intra-frequency handover, it shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS using the new configuration
9	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

MEASUREMENT CONTROL (Step 2)

Use the same message in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
- CHOICE measurement type	Intra-frequency measurement
- Intra-frequency measurement	
- Intra-frequency cell info list	
- Intra-frequency cell removal	Not present
- New intra-frequency info list	
- Intra-frequency cell-id	
- Cell info	1
- Cell individual offset	0 (0dB)
- Reference time difference to cell	Not Present
- Read SFN number	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	100
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- CSG Intra-frequency cell info	
- CSG cell info list	1
- Choice mode	FDD
- FDD	
- Start PSC	144
- Number of PSCs	10
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- Measurement validity	CELL_DCH state
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each events	
- Intra-frequency event identity	1D
- Triggering condition 2	Monitored set cells
- Hysteresis	4(2dB)
- Time to trigger	10 mSec
- Reporting cell status	
- CHOICE reported cell	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	2

MEASUREMENT REPORT (Step 4)

Use the same message in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	Check to see if set to 1
Measured results	
- Intra-frequency measured results	Check to see if measurement results for Cell-2 are included and Cell-1 are not included.
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional Measured results	Check to see if this IE is absent
Event results	Check to see if set to "Intra-frequency event results"
- Intra-frequency event identity	Check to see if set to "1D"
- Cell measurement event results	
- Primary scrambling code	Check to see if set to "Primary scrambling code of Cell 2"

MEASUREMENT CONTROL (Step 5)

Use the same message in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
- CHOICE measurement type	Intra-frequency measurement
- Intra-frequency measurement	
- Intra-frequency cell info list	
- Intra-frequency cell removal	Not present
- New intra-frequency info list	Not present
- Intra-frequency SI Acquisition	
- Choice mode	FDD
- FDD	
- Intra-frequency SI acquisition Info	
- Primary Scrambling Code	Set to same code as used for cell 2(150)
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for detected set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within detected set on used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	4000 msec

MEASUREMENT REPORT (Step 6)

Use the same message in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	Check to see if set to 2
Measured results	
- Intra-frequency measured results list	
- Intra-frequency measurement results	1
- Cell measured results	
- Cell Identity	Check to see if set to "Cell Identity of Cell 2"
- CSG Identity	Check to see if set to "CSG Identity of Cell 2 (CSG 1)"
- CSG Member indication	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- CHOICE *mode*	FDD
- FDD	
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code for cell 2
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured results on RACH	Check to see if this IE is absent
Additional Measured results	Check to see if this IE is absent
Event results	Check that this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Use the same contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case as found in TS 34.108, clause 9, with sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	FDD
- FDD	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to cell2
Downlink information common for all radio links	
- CHOICE DPCH info	
- Downlink DPCH info common for all RL	
- Timing indication	Maintain
- Downlink information for each radio links	
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 2

8.3.12.9.5 Test Requirements

At step 4, the UE shall send a MEASUREMENT REPORT message including the measured PSC for cell 2 and event 1D.

At step 6, the UE shall send a MEASUREMENT REPORT message including the cell identity and CSG ID of the cell 2 within 4000 msec.

At step 8, the UE shall send Physical Channel Reconfiguration Complete message on uplink DCCH using AM RLC.

8.3.12.10 Intra-frequency inbound handover to UMTS non-CSG cell

8.3.12.10.1 Definition

Test to verify the UE can report the Cell Identity of the non-CSG cell, but "CSG Identity" and "CSG Member Indication" IEs are not included.

8.3.12.10.2 Conformance requirement

1. Intra-frequency measurements for CSG/Hybrid cells

For each cell reported in the IE "Cell measured results" of an intra-frequency Measurement Report, which is also included in the IE "Intra-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the valid system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE.

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if CSG identity of the concerned cell is present in UE's CSG whitelist.

The system information of the reported cell(s) can be acquired by the UE without any measurement gaps.

2. CSG/Hybrid Cell Intra-frequency Measurement Procedure

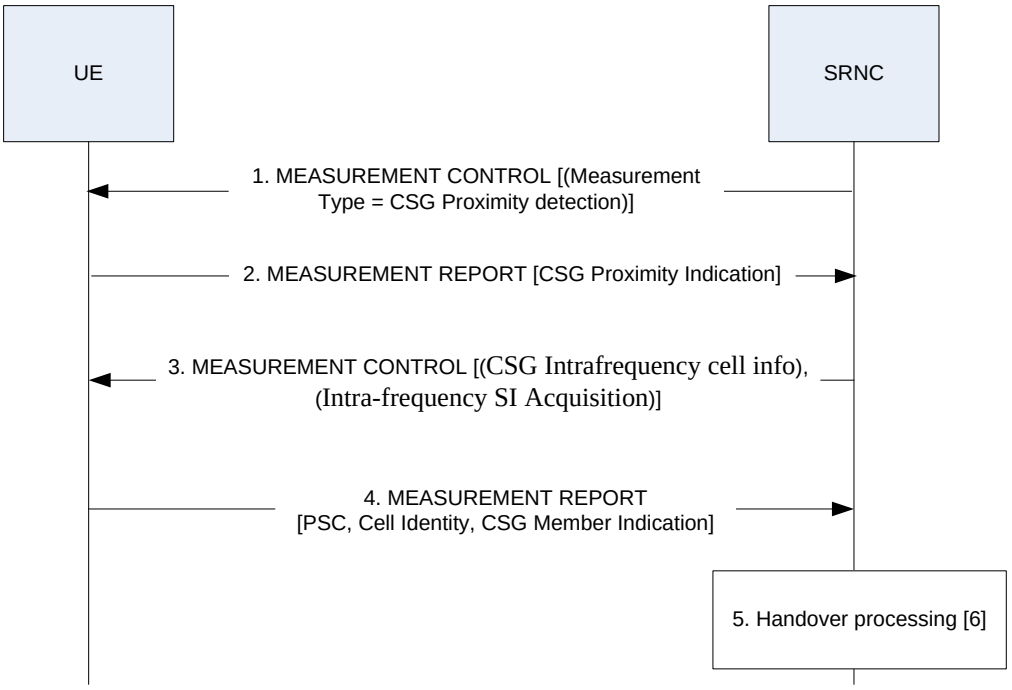

Figure 8.1.1-1: Intra-frequency Measurement Procedure of CSG and Hybrid cells

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist.

3) If a measurement configuration for CSG/hybrid cells is not present, the SRNC configures the UE with relevant measurement configuration which includes the PSCs that the UE must measure and the PSCs for which SI

acquisition should be performed. The network may use the CSG proximity indication for intra-frequency case to minimize the time during which measurements for CSG/hybrid cells are configured.

4) The UE sends a measurement report including the measured PSC, Cell Identity, CSG ID and CSG membership indication of the target HNB to the SRNC (e.g., due to a triggered intra-frequency event 1d). The UE can acquire MIB and SIB3/SIB4 of intra-frequency target HNB cells in parallel with reception of the serving cell transmissions in CELL_DCH. No measurement gaps are required for reading MIB and SIB3/SIB4.

5) SRNC can then proceeds with the handover processing as described in [6].

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements configured.

The PSC confusion is resolved by steps 3 and 4. The SRNC can request SI acquisition and reporting for any PSC, not limited to PSCs of CSG or hybrid cells.

Reference

1. 3GPP TS 25.331 v970 clause 14.7a.1

2. 3GPP TS 25.367 v950 clause 8.1.1

8.3.12.10.3 Test purpose

1. To confirm that the UE can measure and report the Cell Identity of the non-CSG cell. The CSG Identity and CSG Member indication are not included in the measurement report.

2. To confirm that the SRNC can request SI acquisition and reporting for non-CSG cell.

8.3.12.10.4 Method of test

Initial Condition

System Simulator:

2 cells: Cell 1 and Cell 2 are on f1.

Cell1 and Cell2 does not broadcast CSG ID..

User Equipment:

The UE is PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports FDD

- UE supports the capability "Support of intra-frequency SI acquisition for HO".

Test Procedure

Table 8.3.12.10-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.3.12.10-1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		1		1	
CPICH Ec	dBm/3.84MHz	-55	-70	Off	-55

The instant T0, the Cell 1 is active and the UE is initially in CELL_DCH and has a radio bearer with the Cell 1. The Cell 2 (non-CSG cell) is inactive. The SS sends MEASUREMENT CONTROL with event 1d configured to the UE. The PSC of the Cell 2 (144) shall be within the scope of the PSC range in the MEASUREMENT CONTROL.

At instant T1, the downlink is changed according to what is shown in table 8.3.12.10-1. The UE shall thus send a MEASUREMENT REPORT with 1d event to the SS. The UE sends the PSC of the Cell 2.

The SS configures the PSC for SI acquisition to UE. The UE acquires the SI of the Cell 2 and sends it to the SS with the cell identity.

The SS sends a PHYSICAL CHANNEL RECONFIGURATION message on DCCH using AM-RLC to trigger the handover to the Cell 2. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial condition is set as T0 in table 8.3.12.10-1.
2	←		MEASUREMENT CONTROL	The SS configures a measurement to the UE. Event 1d is configured.
3				The SS re-adjusts the downlink transmission power settings of the Cell 1 and Cell 2 according to columns "T1" in table 8.3.12.10-1.
4	→		MEASUREMENT REPORT	The UE sends a 1d event with the PSC of Cell 2.
5	←		MEASUREMENT CONTROL	The SS configures the PSC for SI acquisition.
6				The UE acquires the SI of the Cell 2.
7	→		MEASUREMENT REPORT	The UE reports the cell identity of the Cell 2.
8	←		PHYSICAL CHANNEL RECONFIGURATION	The SS orders the UE to perform timing re-initialised intra-frequency handover to Cell 2.
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	After the UE has succeeded in performing the intra-frequency handover, it shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS using the new configuration.
10	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
CHOICE measurement type	
- Intra-frequency measurement	
- Intra-frequency measurement objects list	
- CSG Intrafrequency cell info	
- CSG Intra-frequency cell info	
- CSG cell info list	
- Choice mode	
- FDD	
- Start PSC	
- Primary scrambling code	144
- Number of PSCs	8
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	
- FDD	
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for detected set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Measurement validity	
- UE state	CELL_DCH state
- CHOICE report criteria	
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	
- Intra-frequency event identity	1d
- Triggering condition 2	Monitored set cells
- Hysteresis	4(2dB)
- Time to trigger	10 mSec
- Reporting cell status	
- CHOICE reported cell	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	2

MEASUREMENT REPORT (Step 4)

Information Element	Value/remark
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	Check to see if set to 1
Event results	
-CHOICE *event result*	
- Intra-frequency measurement event results	
- Intra-frequency event identity	1d
- Cell measurement event results	
- CHOICE *mode*	
-FDD	
- Primary CPICH info	
- Primary scrambling code	150(The same as the cell2)

MEASUREMENT CONTROL (Step 5)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Setup
CHOICE Measurement type	
- Intra-frequency measurement	
- Intra-frequency cell info list	
- Intra-frequency SI Acquisition	
- CHOICE mode	
- FDD	
- Intra-frequency SI Acquisition info	
- Primary Scrambling code	Set to same code as used for cell 2(150)
- Intra-frequency reporting quantity	
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within monitored set on used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	4000 msec

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	Check to see if set to 2
Measured Results	
- CHOICE *Measurement*	
-Intra-frequency measured results list	
-Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	The same as the cell2
- CSG Identity	Check that this IE is absent
- CSG Member indication	Check that this IE is absent
- CHOICE *mode*	
-FDD	
- Primary CPICH info	
- Primary scrambling code	150(The same as the cell2)
- CPICH Ec/N0	Check that this IE is absent
- CPICH RSCP	Check that this IE is present
- Pathloss	Check that this IE is absent
Measured results on RACH	Check that this IE is absent
Additional measured results	Check that this IE is absent
Event results	Check that this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 8)

Use the same contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case as found in TS 34.108, clause 9, with sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" with the following exceptions:

Information Element	Value/Remark
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	
- FDD	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to cell2
Downlink information common for all radio links	
- CHOICE DPCH info	
- Downlink DPCH info common for all RL	
- Timing indication	Initialise
Downlink information for each radio links	
- CHOICE mode	FDD
- FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 2(150)

8.3.12.10.5 Test requirement

1. At step 4, the UE reports the PSC of the cell2.
2. At step 7, the UE reports the Cell Identity of the cell2 within 4000msec.
3. At step 9, the UE sends Physical Channel Reconfiguration Complete message on uplink DCCH using AM RLC.

8.3.12.11 Inter-frequency Measurement of UMTS non-CSG cell

8.3.12.11.1 Definition

Test to verify the UE can report the Cell Identity and does not report CSG ID and CSG Member indication of a non-CSG cell to the SRNC in the measurement report.

8.3.12.11.2 Conformance requirement

1: Inter-frequency measurements for CSG/Hybrid cells:

For each cell reported in the IE "Cell measured results" of an inter-frequency Measurement Report, which is also included in the IE "Inter-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the system information of the concerned cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE;

3> if the concerned cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if CSG identity of the concerned cell is present in UE's CSG whitelist.

If the UE needs measurement gaps to read the system information on the non-used frequency, the system information of the reported cell can be acquired by the UE via autonomous measurement gaps when the IE "Inter-frequency SI Acquisition" is received by the UE, i.e., UE is allowed to temporarily abort communication with the serving cell to perform SI acquisition within the limits (detailed value is FFS). UE shall send the measurement report before the maximum provided time specified in IE "Periodical reporting criteria" if the UE is able to acquire SI early.

2: Inter-frequency Measurement Procedure of CSG and Hybrid cells:

1) The SRNC configures the UE with a measurement having "CSG Proximity detection" as measurement type.

2) The UE sends an "entering" CSG proximity indication when it determines it may be near a cell, (based on UE implementation) whose CSG ID is in the UE's CSG whitelist. The CSG proximity indication includes the RAT and frequency of the cell.

3) The SRNC configures a measurement on the concerned frequency/RAT to measure CSG/hybrid cells. Compressed mode gaps, if required by the UE, are also activated to allow UE to perform measurements on the reported RAT and frequency. The network may also use the proximity indication to minimize the requesting of handover preparation information of CSG/hybrid cells by avoiding requesting such information when the UE is not in the geographical area where cells whose CSG IDs are in the UEs CSG whitelist are located.

4) The UE sends a measurement report including the measured PSCs/PCIs.

5) The SRNC configures the UE to perform SI acquisition and reporting of a particular PSC/PCI.

6) The UE performs SI acquisition using autonomous gaps, i.e., the UE may suspend reception and transmission with the SRNC within the limits (the limit is currently FFS) to acquire the relevant system information from the target HNB/HeNB.

7) The UE sends a measurement report including Cell Identity, CSG ID and CSG membership indication.

8) SRNC can then proceed with the handover processing. The handover processing for inter-frequency handover to a CSG/Hybrid cell is described in [6].

NOTE: The above steps also apply to inter-RAT mobility from UMTS cell to HeNB.

After sending an "entering" CSG proximity indication (step 2), if the UE determines that it is no longer near any cell (on the reported proximate RAT and frequency) whose CSG ID is in the UE's CSG whitelist, the UE sends a "leaving" CSG proximity indication to the SRNC. Upon reception of this indication, the SRNC may reconfigure the UE to stop measurements on the reported RAT and frequency.

In the above procedure, step 2 may not be performed in case the UE has not previously visited the HNB, e.g., when the UE first visits a CSG/hybrid cell.

The PSC/PCI confusion is resolved by steps 5, 6 and 7. The SRNC can request SI acquisition and reporting for any PSC/PCI, not limited to PSCs/PCIs of CSG or hybrid cells.

3: The CSG SI acquisition delay is defined as the time between any occurrences that will trigger a SI decoding until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. The measurement reporting delay also excludes any RRC procedure delay which is defined in [16] when SI reading is initiated by a measurement control message.

For intra frequency CSG cells, CSG SI decoding is typically triggered when a cell with primary scrambling code in a preconfigured range meets the criteria for measurement reporting. For inter frequency CSG cells, CSG SI decoding is explicitly requested by RRC signalling.

The CSG SI reporting delay shall not be more than $T_{CSG\text{-}SI\text{-}Report}$ where $T_{CSG\text{-}SI\text{-}Report}$ in ms is given by

$$T_{CSG\text{-}SI\text{-}Report} = [630] + 40*SIB3\_REP$$

SIB3_REP is the repetition period at which the CSG cell schedules SIB3 blocks in units of frames

This requirement is applicable for CSG target cell configurations where the information required to make the SI report can be determined from the MIB and SIB3 alone, and SIB3 is not segmented into multiple TTI. Additionally, for the requirement to be applicable, the reception conditions shall be [TBD] such that the system frame number of the target CSG cell, the MIB and SIB3 can each be successfully decoded in no more than four attempts.

Test requirement = RRC Procedure delay + $T_{CSG\text{-}SI\text{-}Report}$

Reference

1: 3GPP TS 25.331 clause 14.7a.2.

2: 3GPP TS 25.367, clause 8.1.2.

3: 3GPP TS 25.133, clause 5.13.2, A.5.11.2.

8.3.12.11.3 Test purpose

1. To confirm that the UE can read and report system information of a non-CSG cell to the SRNC.

8.3.12.11.4 Method of test

Initial Condition

System Simulator:

2 cells: Cell 1, cell 4 are used.

Cell4 and Cell 1 do not broadcast CSG ID.

Cell1 is on f1.

Cell 4 is on f2

The SIB3_REP of cell 4, i.e., SIB3 scheduling is 64.

User Equipment:

The UE Allowed CSG List is empty.

The UE is PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports Compressed mode.
- UE supports the capability "Support of inter-frequency SI acquisition for HO".
- UE supports the capability "Support of CSG".

Test Procedure

Table 8.3.12.11-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.3.12.11-1

Parameter	Unit	Cell 1		Cell 4	
Test Channel		1		2	
		T0	T1	T0	T1
CPICH Ec	dBm/3.84 MHz	-60	-70	OFF	-55

Cell 1 is active. The UE is initially in CELL_DCH and has a radio bearer with the cell1.

At instant T0, the downlink is changed according to what is shown in table 8.3.12.11 -1.

The SS sends MEASUREMENT CONTROL with 1c event required for construction of the CSG VAS active set in the UE.

The SS configures then compressed mode (if required), to prepare the UE for inter-frequency measurements, by sending a PHYSICAL CHANNEL RECONFIGURATION message on DCCH using AM-RLC. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS then sets up CSG inter-frequency measurements (event 2b), by sending a MEASUREMENT CONTROL message to the UE.

At instant T1, the downlink power is changed according to what is shown in table 8.3.12.11 -1. The UE shall thus send a MEASUREMENT REPORT with 2b event to the SS.

The SS then sets up SI acquisition of cell 4 by sending a MEASUREMENT CONTROL message to the UE. And then the UE shall report the cell identity of the cell 4.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS changes the power of the two cells according to column T0 in table 8.3.12.11-1
2	←		MEASUREMENT CONTROL	Cell1 configures a measurement with 1c event. The cell information is set to the same as the cell1.
3	←		PHYSICAL CHANNELRECONFIGURATION	SS instructs UE to begin compressed mode operation. (for FDD only)
4	→		PHYSICAL CHANNELRECONFIGURATION COMPLETE	(for FDD only)
5	←		MEASUREMENT CONTROL	The SS configures a measurement to measure cells. The message includes the PSC range the compressed mode gaps and the parameters of the event 2b.
6				SS re-adjusts the downlink transmission power settings of the two cells according to columns "T1" in table 8.3.12.11-1.
7	→		MEASUREMENT REPORT	The UE sends a measurement report including the measured PSCs for cell 4 and event 2b to cell 1.
8	←		MEASUREMENT CONTROL	The SS configures the UE to perform SI acquisition and reporting of cell 4.
9				The UE performs SI acquisition to acquire the relevant system information from the cell4.
10	→		MEASUREMENT REPORT	The UE sends a measurement reporting including the cell identity of the cell 4 within 4000msec..
11	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
CHOICE measurement type	Intra-frequency measurement
- intra-frequency measurement	
- Intra-frequency measurement objects list	
- Remove all intra-frequency cells	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 (0dB)
- Reference time difference to cell	Not Present
- Read SFN number	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	100
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	
- FDD	
- Measurement quantity	CPICH RSCP
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each events	
- Intra-frequency event identity	1c
- Hysteresis	4 (2dB)
- Replacement activation threshold	3
- Time to trigger	10 ms
- Amount of reporting	16
- Reporting interval	4000ms
- Reporting cell status	Not present

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/remark	Version
Downlink information common for all radio links		
- Downlink DPCH info common for all RL		
- Timing Indication	Maintain	
- Downlink DPCH power control information		
- DPC mode	0 (Single)	
- CHOICE Mode	FDD	
- Power offset PPilot-DPDCH	0	
- DL rate matching restriction information	Not present	
- Spreading factor	Refer to the parameter set in TS 34.108	
- Fixed or flexible position	Flexible	
- TFCI existence	TRUE	
- Number of bits for Pilot bits (SF=128, 256)	Not present	
- DPCH compressed mode info		
- TGPSI	1	
- TGPS status flag	Activate	
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256	
- Transmission gap pattern sequence configuration parameters		
- TGMP	FDD Measurement	
- TGPRC	Infinity	
- TGSN	4	
- TGL1	7	
- TGL2	Not Present	
- TGD	Undefined	
- TGPL1	3	
- TGPL2	Not Present	R99 and Rel-4 only
- RPP	Mode 0	
- ITP	Mode 0	
- CHOICE UL/DL mode	UL and DL or DL only or UL only depending on UE capability	
- Downlink compressed mode method	SF/2	
- Uplink compressed mode method	SF/2 or Not present depending on UE capability	
- Downlink frame type	A	
- DeltaSIR1	20 (2.0)	
- DeltaSIRAfter1	10 (1.0)	
- DeltaSIR2	Not present	
- DeltaSIRAfter2	Not present	
- N identify abort	Not present	
- T Reconfirm abort	Not present	
- TX diversity mode	None	
- SSDT information	Not present	R99 and Rel-4 only
- Default DPCH offset value	Not present	

MEASUREMENT CONTROL (Step 5)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	acknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
CHOICE Measurement type	
-Inter-frequency measurement	
- Inter-frequency measurement objects list	
- Inter-frequency cell removal	Not Present
- New inter-frequency cells	
- Inter-frequency cell id	1
- Frequency info	Frequency information of cell 4
- cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE mode	
-FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH Tx power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not present
- CSG Inter-frequency cell info	
- CSG Frequency info	
- Frequency info	Frequency of Cell 4
- CSG Inter-frequency cell info for the frequency	
- CSG cell info list	
- CHOICE *mode*	FDD
- Start PSC	300
- Number of PSCs	100
- Inter-frequency SI Acquisition	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Measurement validity	CELL_DCH state
- inter-frequency set update	
- UE autonomous update mode	On with no reporting
- CHOICE report criteria	
- Inter-frequency measurement reporting criteria	
- Parameters required for each event	
- Inter-frequency event identity	2b
- Threshold used frequency	-65dBm
- W used frequency	0.0
- Hysteresis	2(1dB)
- Time to trigger	0 mSec
- Reporting cell status	Not present
- Parameters required for each non-used frequency	
- Threshold non used frequency	-68 dBm
- W non used frequency	0
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 2
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter-frequency measurement event results,
- CHOICE event result	
- Inter-frequency measurement event results	
- Inter-frequency event identity	2b
- Inter-frequency cells	
- Frequency info	Set to same frequency as used for cell 4
- Non frequency related measurement event results	
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 4

MEASUREMENT CONTROL (Step 8)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
CHOICE Measurement type	
- Inter-frequency measurement	
- Inter-frequency measurement objects list	
- Inter-frequency SI Acquisition	
- Frequency info	Set to same frequency as used for cell 4
- CHOICE mode	
- FDD	
- Primary scrambling code	Set to same scrambling code as used for cell 4
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	1
- Reporting interval	4000ms
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step10)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured results	Check to see if it is absent
Additional measured results	Check to see if it is absent
Measured Results	
-CHOICE Measurement	
- Inter-frequency measured results list	
- Inter-frequency measurement results	
- Frequency info	Set to the frequency of cell 4
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Set to 28-bit Cell identity as used for cell 4
- CSG Identity	Not present
- CSG Member indication	Not present
- CHOICE mode	
- FDD	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 4
- CPICH Ec/N0	Check that this IE is absent
- CPICH RSCP	Check that this IE is present
- Pathloss	Check that this IE is absent

8.3.12.11.5 Test requirement

At step 7, the UE sends 2b event for cell 4 to the cell1.

At step 10, The UE sends a measurement reporting including the cell identity but not including CSG ID and CSG membership indication of the cell 4 within 4000ms.

8.3.12.12 Membership checking for handover to the CSG Cell

8.3.12.12.1 Definition

Test to verify the UE can check whether a Cell is a CSG member Cell according to the CSG id and ePLMN identity and to verify the UE can report the Cell Identity, CSG ID and CSG membership indication to the SRNC.

8.3.12.12.2 Conformance requirement

1: Definitions

For the purposes of the present document, the terms and definitions given in [1] apply, together as:

Activated uplink frequency (FDD only): For a specific UE, an uplink frequency is said to be activated if the UE is allowed to transmit on that frequency. The primary uplink frequency is always activated when configured while a secondary uplink frequency has to be activated by means of an HS-SCCH order in order to become activated.

Adjacent Frequency: A frequency whose centre is within 5 MHz of the centre of the currently used frequency and belongs to the same frequency band as that of the currently used frequency.

Common E-DCH resource: In FDD, common E-DCH resources are under direct control of the Node B and are shared by UEs in CELL_FACH state and IDLE mode. In 1.28 Mcps TDD, common E-DCH resources used by UEs in CELL_FACH and IDLE mode are under direct control of Node B and are shared by UEs in the CELL_DCH state.

Configured Uplink Frequency (FDD only): For a specific UE, an uplink frequency is said to be configured if the UE has received all relevant information from RRC in order to perform transmission on that frequency.

CSG member Cell: for a UE in RRC_CONNECTED, a Cell broadcasting the identity of the Registered PLMN or Equivalent PLMN and for which CSG whitelist of the UE includes an entry comprising of Cell's CSG ID and the respective PLMN identity.

Current Frequency (FDD only): The frequency that is currently used by the UE. In case of dual Cell or dual band configured, the serving HS-DSCH Cell frequency is treated as current frequency.

2. Intra-frequency measurements for CSG/Hybrid Cells

For each Cell reported in the IE "Cell measured results" of an intra-frequency Measurement Report, which is also included in the IE "Intra-frequency SI Acquisition" associated with the measurement:

1> if the UE managed to acquire the valid system information of the concerned Cell:

2> include the following IEs in the IE "Cell measured results":

3> "Cell Identity" IE.

3> if the concerned Cell broadcasts a CSG identity:

4> "CSG Identity" IE.

4> "CSG Member indication" IE and set it to "member" if the concerned Cell is CSG member Cell.

The system information of the reported Cell(s) can be acquired by the UE without any measurement gaps.

Reference

1: 3GPP TS 25.331 clause 3.1 v9.8

2. 3GPP TS 25.331 clause 14.7a.1 v9.8

8.3.12.12.3 Test purpose

1. To confirm that the UE is considered as "member" when the CSG whitelist of the UE includes an entry comprising of Cell's CSG ID and the EPLMN identity.

2. To verify that the member UE could report the Cell Identity, CSG ID and CSG membership indication of the CSG member Cell and handover to it.

8.3.12.12.4 Method of test

Initial conditions

2 Cells: Cell 1 and Cell 2.

Cell 1 does not broadcast CSG ID.

Cell 1 belongs to PLMN 1

Cell 2 is a CSG Cell with the CSG ID of CSG 2. "CSG PSC Split Information" is also included in SIB3 with "Start PSC" set to 144 and "Number of PSCs" set to 10.

The Primary Scrambling Code of Cell 2 is 150.

Cell 2 belongs to PLMN 2

UE's whitelist is set as below:

Table 8.3.12.12-1

CSG ID	PLMN ID
2	2

Related ICS/IXIT statement(s)

- UE supports FDD and CSG.
- UE supports the capability "Support of intra-frequency SI acquisition for HO".

Test Procedure

Table 8.3.12.12 -2 illustrates the downlink power to be applied for the 2 Cells

Table 8.3.12.12-2

Parameter	Unit	Cell 1		Cell 2	
Test Channel		1		2	
		T0	T1	T0	T1
CPICH Ec	dBm/3.84 MHz	-60	-75	-80	-55

The initial condition is set as the instant T0 shown in table 8.3.12.12-2 and The UE is switched off.

The UE is switched on. The SS waits for random access requests from the UE. A complete Location Update is done. SS specifies PLMN 2 Equivalent to PLMN 1 in Location Update Accept Message.

The UE initiates a PS/CS services with the Cell 1 and keeps in CELL_DCH state and has a radio bearer with the Cell1.

The SS then sets up intra-frequency measurements (event 1d), by sending a MEASUREMENT CONTROL message to the UE.

At instant T1, the downlink is changed according to what is shown in table 8.3.12.12-2. The UE shall thus send a MEASUREMENT REPORT with 1d (for Cell 2) event to the SS.

The SS configures the PSC range for SI acquisition to UE. The UE acquires the SI of the Cell2 and sends it to the SS with the Cell identity, CSG ID and membership indication.

The UE shall handover to the Cell 2.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is switched on. A complete Location Update is done. SS specifies PLMN 2 Equivalent to PLMN 1 in Location Update Accept Message. The UE initiates a PS/CS services with the Cell 1 and keeps in Cell_DCH state.
2	←		MEASUREMENT CONTROL	The SS configures a measurement to the UE. Event 1d is configured.
3				SS adjusts the downlink transmission power settings of the Cells according to columns "T1" in table 8.3.12.12-2.
4	→		MEASUREMENT REPORT	The UE sends a 1d event with the PSC of Cell 2.
5	←		MEASUREMENT CONTROL	The SS configures the PSC range for SI acquisition.
6				The UE acquires the SI of the Cell2.
7	→		MEASUREMENT REPORT	The UE reports the Cell identity, CSG ID and CSG membership indication of the Cell 2.
8	←		PHYSICAL CHANNEL RECONFIGURATION	The SS orders the UE to perform timing re-initialised intra-frequency handover to Cell 2.
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	After the UE has succeeded in performing the intra-frequency handover to Cell 2, it shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS using the new configuration
10	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
CHOICE measurement type	
- Intra-frequency measurement	
- Intra-frequency Cell info list	
- Remove all intra-frequency Cells	
- New intra-frequency Cells	
- Intra-frequency Cell-id	
- Cell info	1
- Cell individual offset	0 (0dB)
- Reference time difference to Cell	Not Present
- Read SFN number	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	100
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- CSG Intra-frequency Cell info	
- CSG Intra-frequency Cell info	
- CSG Cell info list	1
- Choice mode	
- FDD	
- Start PSC	
- Primary scrambling code	144
- Number of PSCs	10
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	
- FDD	
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set Cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set Cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting Cell status	Not Present
- Measurement validity	CELL_DCH state
- CHOICE report criteria	
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	
- Intra-frequency event identity	1d
- Triggering condition 2	Monitored set Cells
- Hysteresis	4(2dB)
- Time to trigger	
- Time to trigger	10 mSec
- Reporting Cell status	
- CHOICE reported Cell	Report Cells within monitored set Cells on used frequency
- Maximum number of reported Cells	2

MEASUREMENT REPORT (Step 4)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity Measured Results - Intra-frequency measured results - Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code - CPICH Ec/N0 - CPICH RSCP - Pathloss Measured results on RACH Additional measured results Event results - Intra-frequency measurement event results - Intra-frequency event identity - Intra-frequency event identity - Cell measurement event results - CHOICE *mode* -FDD - Primary CPICH info - Primary scrambling code	Check to see if set to 1 Check to see if measurement results for Cell-2 are included and Cell-1 are not included. Checked that this IE is absent Checked that this IE is absent Refer to clause titled "Default settings for Cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent Intra-frequency measurement event results, 1d 150(The same as the Cell2)

MEASUREMENT CONTROL (Step 5)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Setup
CHOICE Measurement type	
- Intra-frequency measurement	
- Intra-frequency Cell info list	
- Intra-frequency SI Acquisition	
- CHOICE mode	
- FDD	
- Intra-frequency SI Acquisition info	
- Primary Scrambling code	
- Primary CPICH info	
- Primary Scrambling code	Set to same code as used for Cell 2(150)
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	
- FDD	
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for detected set Cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	
- FDD	
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting Cell status	
- CHOICE reported Cell	Report Cells within detected set on used frequency
- Maximum number of reported Cells	2
- Measurement validity	Not Present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	4000 msec

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	Check to see if set to 2
Measured Results	
- CHOICE *Measurement*	
-Intra-frequency measured results list	
-Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	The same as the Cell2
- CSG Identity	2
- CSG Member indication	member
- CHOICE *mode*	
-FDD	
- Primary CPICH info	
- Primary scrambling code	150(The same as the Cell2)
- CPICH Ec/N0	Check that this IE is absent
- CPICH RSCP	Check that this IE is present
- Pathloss	Check that this IE is absent
Measured results on RACH	Check that this IE is absent
Additional measured results	Check that this IE is absent
Event results	Check that this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 8)

Use the same contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case as found in TS 34.108, clause 9, with sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" with the following exceptions:

Information Element	Value/Remark
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	
- FDD	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for Cell 2
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to Cell2
Downlink information common for all radio links	
- CHOICE DPCH info	
- Downlink DPCH info common for all RL	
- Timing indication	Initialise
Downlink information for each radio links	
- CHOICE mode	FDD
- FDD	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for Cell 2(150)

8.3.12.12.5 Test requirement

At step 1, The SS waits for random access requests from the UE. A complete Location Update is done.

At step 4, the UE sends event 1d with the information of the Cell2.

At step 7, the UE sends Cell identity, CSG ID and CSG membership indication of the Cell2 within 4000 msec.

At step 9, the UE sends Physical Channel Reconfiguration Complete message on uplink DCCH using AM RLC.

8.3.12.13 Void

8.3.12.14 Inter-frequency CSG proximity indication

8.3.12.14.1 Definition

Test to verify the UE properly indicates that the UE is entering or leaving the proximity of one or more CSG member cells based on proximity detection with an autonomous search function.

8.3.12.14.2 Conformance requirement

1: The UE shall initiate transmission of the *ProximityIndication* message with "entering" according to [16] within [6] minutes after entering the proximity of one or more CSG member cell(s) on a UTRA or E-UTRA frequency.

The UE shall initiate transmission of the *ProximityIndication* message with "leaving" according to [16] within [6] minutes after leaving the proximity of all CSG member cell(s) on a UTRA or E-UTRA frequency.

There is no need for statistical testing of this requirement.

NOTE: Entering the proximity of one or more CSG member cell(s) means that the UE is near a cell whose CSG ID is in the UE's CSG whitelist (as determined based on autonomous search procedures). Leaving the proximity of one or more CSG member cell(s) means that the UE is no longer near any cell whose CSG ID is in the UE's CSG whitelist.

Reference

1: 3GPP TS 25.133, clause 6.7.2

8.3.12.14.3 Test purpose

1. To confirm that the UE can transmit ProximityIndication message with "entering" after entering the proximity of CSG member cell.

2. To confirm that the UE can transmit ProximityIndication message with "leaving" after leaving the proximity of CSG member cell.

8.3.12.14.4 Method of test

Initial Condition

System Simulator:

3 cells – Cell 1, Cell 2 and Cell 4 are used.

The CSG id of the Cell 4 is 2. Cell 1 and 2 do not broadcast CSG ID.

Cell 1 and Cell 2 are on f1.

Cell 4 is on f2.

The SIB3_REP of cell 4 i.e. SIB3 scheduling is 32.

User Equipment:

The UE Allowed CSG List shall be empty.

The UE memory shall be cleaned up the to be free from previously stored cell information for proximity detection [method how to achieve this is TBD].

The UE is PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports inter-frequency CSG Proximity Indication.

Test Procedure

Table 8.3.12.14-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.3.12.14-1

Parameter	Unit	Cell 1				Cell 4				Cell 2			
Test Channel		1				2				1			
LAC		0001				0002				0003			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec	dBm/3.84MHz	-70	-70	-70	-90	-70	OFF	-70	OFF	OFF	OFF	OFF	-70

Cell 1 is active. At instant T1, the downlink power is changed according to what is shown in table 8.3.12.14 -1. The UE performs manual CSG selection towards Cell 4. The UE shall store the necessary information for later proximity detection.

At instant T2, the UE is switched off and the downlink power is changed according to what is shown in table 8.3.12.14 -1.

At instant T3, the downlink power is changed according to what is shown in table 8.3.12.14 -1. The UE is configured with proximity indication control by sending the Measurement Control message to enable CSG Proximity detection. The UE shall report “entering” proximity of a CSG member cell.

At instant T4, the downlink power is changed according to what is shown in table 8.3.12.14 -1. The UE performs handover to Cell 2 to simulate the condition that the UE is not in the vicinity of the CSG cell. The UE shall report “leaving” proximity of a CSG member cell.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS changes the power of the two cells according to column T1 in table 8.3.12.14-1
2				The UE is made to perform manual CSG selection and select Cell 4. A complete Location Update is done.
3				The UE is switched off. The SS changes the power of the two cells according to column T2 in table 8.3.12.14-1
4				The UE is switched on and shall reselect Cell 1. The UE performs a registration procedure described in TS 34.108 subclause 7.2.2 according to the CN domain under test.
5				The SS changes the power of the two cells according to column T3 in table 8.3.12.14-1
6	←		MEASUREMENT CONTROL	The SS configures a measurement to the UE to enable CSG proximity detection.
7	→		MEASUREMENT REPORT	The UE sends a measurement report with the CSG proximity indication to the SS. The message includes the frequency of the Cell 4 and “entering” proximity of a CSG member cell.
8				The SS changes the power of the two cells according to column T4 in table 8.3.12.14-1
9				The UE is made to perform handover to Cell 2.
10	→		MEASUREMENT REPORT	The UE sends a measurement report with the CSG proximity indication to the SS. The message includes the frequency of the Cell 4 and “leaving” proximity of a CSG member cell.

Specific Message Contents

MEASUREMENT CONTROL (Step 6)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
CHOICE Measurement type	
- CSG Proximity detection	
- UTRA CSG Proximity detection	enable

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
CSG Proximity Indication	
- CSG Proximity Indication	entering
- CHOICE *Radio Access Technology*	
- UTRA	
- CSG Frequency info for UTRA	
- CHOICE mode	
- FDD	
- UARFCN uplink (Nu)	The same as the Cell 4
- UARFCN downlink (Nd)	The same as the Cell 4

MEASUREMENT REPORT (Step 10)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
CSG Proximity Indication	
- CSG Proximity Indication	leaving
- CHOICE *Radio Access Technology*	
- UTRA	
- CSG Frequency info for UTRA	
- CHOICE mode	
- FDD	
- UARFCN uplink (Nu)	The same as the Cell 4
- UARFCN downlink (Nd)	The same as the Cell 4

8.3.12.14.5 Test requirement

At step 7, the UE sends a measurement report including "entering" proximity of a CSG member cell within [360]s.

At step 10, the UE sends a measurement report including "leaving" proximity of a CSG member cell within [360]s.