
42 Test of Medium Access Control (MAC) protocol

42.1 Test of Medium Access Control (MAC) Procedures

Default conditions

The SS default conditions simulate one cell with default settings as defined in the GPRS general default section.

The MS default initial condition is GPRS attached. Unless otherwise stated, no PDP context is required.

The default message contents and signalling macro not specified in the end of this subclause shall be set as in "GPRS default conditions" clause 40. Specific message contents for a test case is specified in each test case.

Conditions or message contents specified in a test case have the highest precedence. In addition, the default message contents described in the end of this subclause override those specified in "GPRS default conditions".

In case the test case not expected "short access" as access type for Packet Channel Request the amount of RLC data specified in the comments in expected sequence is not necessary to be exactly the specified amount of data. It only has to be more than the limit for short access. If the test case need a specific amount of data this is specified in the test case.

42.1.1 Void

42.1.2 Packet Uplink/Downlink Assignment

42.1.2.1 Packet uplink assignment procedure

42.1.2.1.1 Void

42.1.2.1.2 Void

42.1.2.1.3 Void

42.1.2.1.4 Void

42.1.2.1.5 Void

42.1.2.1.6 Void

42.1.2.1.7 Void

42.1.2.1.8 Void

42.1.2.1.9 Packet Uplink Assignment / Two phase access

42.1.2.1.9.1 Void

42.1.2.1.9.2 Packet Uplink Assignment / Two phase access / Contention resolution

42.1.2.1.9.2.1 Packet Uplink Assignment / Two phase access / Contention resolution / Expiry of timer T3168

42.1.2.1.9.2.1.1 Conformance requirements

The contention resolution has failed on the mobile station side when the mobile station does not receive a PACKET UPLINK ASSIGNMENT message with its TLLI before expiry of timer T3168. The mobile station shall then reinitiate the packet access procedure unless it has already been repeated 4 times. In that case, TBF failure has occurred.

Reference

3GPP TS 04.60 subclause 7.1.3.3.

42.1.2.1.9.2.1.2 Test purpose

To verify that the mobile station reinitiates the packet access procedure after a time equal to timer T3168 and the procedure shall be attempted a total of 4 or 5 times.

42.1.2.1.9.2.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS, CCCH combined with SDCCH, SI13 GPRS Cell Options, T3168 = 7.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 1 has been established.

Specific PICS Statements

- Release of GPRS supported (TSPC_MS_GPRS_RELEASE)

PIXIT Statements

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Test procedure

The MS is triggered to initiate unacknowledged uplink data transfer. The SS sends IMMEDIATE ASSIGNMENT message including Single Block Allocation struct information to order the MS to send PACKET RESOURCE REQUEST message. The MS shall perform a two-phase access i.e. the MS shall transmit a PACKET RESOURCE REQUEST message on the allocated uplink resource. The SS wait for a time greater than timer T3168 so the MS shall reinitiate packet access procedure. This procedure shall be attempted 4 or 5 times.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 200 octets data.
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	Single Block Allocation struct. Sent on AGCH.
4	MS -> SS	PACKET RESOURCE REQUEST	ACCESS_TYPE = "Two Phase Access Request". Received on the single block assigned in step 3.
5	SS		The SS waits T3168 expiry.
6			The SS verifies that the MS attempts packet access procedure (steps 2-5 are repeated) in total: Four or five times if PICS 'Release of GPRS supported' is Release 97, 98, 99 or 4. Four times if PICS 'Release of GPRS supported' is Release 5 or later.
NOTE: After step 6 the MS may reinitiate a packet access procedure, since higher layers may request to restart the access procedure.			

Specific message contents

None.

42.1.2.1.9.2.2 Packet Uplink Assignment / Two phase access / Contention resolution / TLLI mismatch

The contention resolution is completed on the mobile station side when the mobile station receives a PACKET UPLINK ASSIGNMENT message with the same TLLI as the mobile station has included in the PACKET RESOURCE REQUEST message.

42.1.2.1.9.2.2.1 Conformance requirements

If the failure is due to a TLLI mismatch, or to the expiry of timers T3166 or T3168, or to the fact that the counter N3104 reached its maximum value in the contention resolution procedure, and repetition as described in subclause 7.1.3.3 has been performed, the mobile station shall remain in packet idle mode, notify higher layer (TBF establishment failure), transactions in progress shall be aborted and cell reselection continued.

Reference

3GPP TS 04.60 subclauses 7.1.4 and 7.1.3.3.

42.1.2.1.9.2.2.2 Test purpose

To verify that the MS reinitiates packet access procedure with failure due to a TLLI mismatch in the contention resolution procedure, unless it has already been attempted 4 or 5 times. In that case, TBF failure has occurred.

42.1.2.1.9.2.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS, CCCH combined with SDCCH, GPRS cell options ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 1 has been established.

Specific PICS Statements

- Release of GPRS supported (TSPC_MS_GPRS_RELEASE)

PIXIT Statements

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Test procedure

The MS is triggered to initiate unacknowledged uplink data transfer. The SS responds with IMMEDIATE ASSIGNMENT message that request two phase access. The MS shall then send PACKET RESOURCE REQUEST message. The SS responds with PACKET UPLINK ASSIGNMENT message with a TLLI different to that the MS has sent in PACKET RESOURCE REQUEST message. The MS shall reinitiate the packet access procedure.

This procedure shall be attempted 4 or 5 times.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 200 octets data.
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3	SS -> MS	IMMEDIATE ASSIGNMENT	Single Block Allocation struct. Sent on AGCH.
4	MS -> SS	PACKET RESOURCE REQUEST	ACCESS_TYPE = "Two Phase Access Request". Include TLLI. Received on the single block assigned in step 3.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Include incorrect TLLI according to step 4. Sent on the PACCH of the assigned PDCH.
6			The SS verifies that the MS attempts packet access procedure (steps 2-5 are repeated) in total: Four or five times if PICS 'Release of GPRS supported' is Release 97, 98, 99 or 4. Four times if PICS 'Release of GPRS supported' is Release 5 or later.
Note: After step 6 the MS may reinitiate a packet access procedure, since higher layers may request to restart the access procedure.			

Specific message contents

None.

42.1.2.1.9.3 Packet Uplink Assignment / Two phase access / Packet Resource Request / No respond to Packet Downlink Assignment

42.1.2.1.9.3.1 Conformance requirements

At sending of the PACKET RESOURCE REQUEST message, the mobile station shall start timer T3168. Further more, the mobile station shall not respond to PACKET DOWNLINK ASSIGNMENT messages while timer T3168 is running.

Reference

3GPP TS 04.60 subclause 7.1.3.1.

42.1.2.1.9.3.2 Test purpose

To verify that the mobile station does not respond to PACKET DOWNLINK ASSIGNMENT messages while timer T3168 is running after sending of the PACKET RESOURCE REQUEST message.

42.1.2.1.9.3.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS, CCCH combined with SDCCH, T3168 indicates value 7 in GPRS Cell Options.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 2 has been established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The MS is triggered to initiate uplink data transfer. The SS shall send IMMEDIATE ASSIGNMENT message including Single Block Allocation struct information to instruct the MS to send PACKET RESOURCE REQUEST. The MS

should perform a two-phase access i.e. the MS shall transmit a PACKET RESOURCE REQUEST message on the allocated uplink resource.

While timer T3168 is running the SS send PACKET DOWNLINK ASSIGNMENT message and starts to send data on the allocated downlink before the timer expires. The MS shall not respond to the Downlink data transfer.

The SS should then send PACKET UPLINK ASSIGNMENT message before the timer T3168 expires and the MS should then begin transmitting RLC data blocks on the allocated uplink resources. The SS allows the MS to complete the sending of the data.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU containing 400 octets of data.
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3	SS -> MS	IMMEDIATE ASSIGNMENT	Single block allocation struct. Sent on AGCH.
4	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 3.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH.
6	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on the assigned PDCH with poll bit set to 1.
	SS		Verify no response from the MS.
7	SS -> MS	PACKET UPLINK ASSIGNMENT	Dynamic allocation struct. Sent on the PACCH of the assigned PDCH 0,9* T3168.
8	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigning USF to the MS. Sent at least 3 block periods from the assignment in step 7.
9		{Uplink data transfer}	Macro. Completion of the TBF procedure.

Specific message contents

None.

42.1.2.1.10 Packet Uplink Assignment / Abnormal cases

42.1.2.1.10.1 Packet Uplink Assignment / Abnormal cases / Incorrect PDCH assignment

42.1.2.1.10.1.1 Conformance requirements

If the mobile station has been assigned more PDCHs than it supports according to its MS multislots class, the mobile station shall reinitiate the packet access procedure unless it has already been repeated 4 times. In that case, TBF failure has occurred.

Reference

3GPP TS 04.60 subclause 7.1.4.

42.1.2.1.10.1.2 Test purpose

To verify that the mobile station reinitiates the packet access procedure when the mobile station has been assigned more PDCHs than it supports and after 4 or 5 attempts of the packet access procedure the mobile station shall initiate TBF failure.

42.1.2.1.10.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS, CCCH combined with SDCCH.

Mobile Station:

The MS is switched off. The SIM is updated to the test cell.

Specific PICS Statements

- Release of GPRS supported (TSPC_MS_GPRS_RELEASE)
- GPRS Multislotclass (TSPC_Type_GPRS_Multislot_ClassX where X = 1..45)

PIXIT Statements

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Test procedure

Convert the MS GPRS Multislot Class to number of uplink timeslot supported.

The MS is powered up or switched on and triggered to perform a GPRS attach. An uplink TBF is established and after PACKET RESOURCE REQUEST the SS sends PACKET UPLINK ASSIGNMENT message containing more assigned PDCHs than the MS supports according to its GPRS multislot class. The MS shall reinitiate packet access procedure; this procedure shall be attempted 4 or 5 times.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is powered up or switched on and triggered to perform a GPRS attach.
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3	SS -> MS	IMMEDIATE ASSIGNMENT	Single block allocation struct. Sent on AGCH.
4	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 3.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign one more Tx than the MS supported. Sent on PACCH.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the third block from the message sent in step 35 Assigning USF to the MS
7			The SS verifies that the MS does not send UPLINK RLC DATA BLOCKS and instead attempts packet access procedure (steps 2-6 are repeated) in total: Four or five times if PICS 'Release of GPRS supported' is Release 97, 98, 99 or 4. Four times if PICS 'Release of GPRS supported' is Release 5 or later
NOTE: After step 7 the MS may reinitiate a packet access procedure, since higher layers may request to restart the access procedure.			

Specific message contents

None.

42.1.2.1.10.2 Packet Uplink Assignment / Abnormal cases / Expiry of timer T3164

42.1.2.1.10.2.1 Conformance requirements

On expiry of timer T3164, the mobile station shall reinitiate the packet access procedure unless it has already been reinitiated 3 times, in which case the mobile station shall return to packet idle mode and notify higher layers.

Reference

3GPP TS 04.60 subclause 7.1.4.

42.1.2.1.10.2.2 Test purpose

To verify that the mobile station reinitiate the packet access procedure when the network have sent a PACKET UPLINK ASSIGNMENT message but the MS has not sent the first block within the time equal to the timer T3164. This packet access procedure shall be reinitiated 3 times.

42.1.2.1.10.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS, CCCH combined with SDCCH.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 2 has been established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The MS is triggered to initiate uplink data transfer. The SS sends IMMEDIATE ASSIGNMENT message with a USF assigned to the MS. The SS shall send PACKET DOWNLINK DUMMY CONTROL BLOCK messages with USF not assigned to the MS. T3164 expires. The SS send a PACKET DOWNLINK DUMMY CONTROL BLOCK containing the assigned USF. The SS verifies that the MS does not send a RLC data block. The SS verifies that the MS reinitiate the packet access procedure within 5 seconds of T3164 expiry; this shall be repeated 3 times.

Maximum duration of the test

1 minute.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 200 octets of data.
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment, to order the MS to follow the two phase access procedure. Sent on AGCH
4	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 3.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Allocate a USF for the MS. Sent on PACCH.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCKs	Don't contain the assigned USF in step 5. Repeat step 6 for a maximum of 5.5 seconds ($1.1 \cdot T3164$). The MS may send a CHANNEL REQUEST at any time after $0.9 \cdot T3164$, in this case go to step 9.
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCKs	Containing the assigned USF in step 5.
8	SS		Verify the MS does not transmit an RLC data block
9	SS		The SS verifies that the packet access procedure (steps 2-6) is reinitiated three times. The CHANNEL REQUEST for reinitiation (in step 2) shall be sent within 5 sec of T3164 expiry (to cater for T3168 - the maximum duration of a packet access procedure).
NOTE: After step 9 the MS may reinitiate a packet access procedure, since higher layers may request to restart the access procedure.			

Specific message contents

None.

42.1.2.2 Packet Downlink Assignment

42.1.2.2.1 Packet Downlink Assignment / Response to poll bit

42.1.2.2.1.1 Conformance requirements

In case valid timing advance for the mobile station is not available, the network may use one of the following two methods to trigger the mobile station to transmit a PACKET CONTROL ACKNOWLEDGEMENT:

- if the PACKET DOWNLINK ASSIGNMENT message is not segmented and the CONTROL_ACK_TYPE parameter in the System Information indicates acknowledgement is access bursts, the network may set the poll bit in the PACKET DOWNLINK ASSIGNMENT message.
- if the PACKET DOWNLINK ASSIGNMENT message is segmented or the CONTROL_ACK_TYPE parameter in the System Information does not indicate acknowledgement is access bursts, the network may send PACKET POLLING REQUEST with TYPE_OF_ACK parameter set to access bursts (see subclause 11.2.12).

The mobile station shall always transmit the uplink radio block on the same timeslot as the block where the RRBP was received. After receiving an RLC/MAC block containing a valid RRBP field the mobile station need not monitor the USF in the associated downlink RLC/MAC block appearing just before the uplink block it shall transmit.

Reference

3GPP TS 04.60 subclause 7.2.1.1 and 10.4.5.

42.1.2.2.1.2 Test purpose

To verify that the mobile station sends PACKET CONTROL ACKNOWLEDGEMENT as four access bursts if the network sets the poll bit in the PACKET DOWNLINK ASSIGNMENT message when CONTROL_ACK_TYPE is set to four access bursts.

42.1.2.2.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS, CCCH combined with SDCCH. CONTROL_ACK_TYPE is set to indicate PACKET CONTROL ACKNOWLEDGEMENT format as four access bursts and the ACCESS_BURST_TYPE indicates 11 bit access.

Mobile Station:

The MS is GPRS attached and in packet idle mode and Ready state.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The SS initiate a downlink data transfer by sending IMMEDIATE ASSIGNMENT on PCH. The SS sends PACKET DOWNLINK ASSIGNMENT message. The poll bit in the MAC header of the PACKET DOWNLINK ASSIGNMENT message will be set to indicate RRBP field is valid. The MS may delay the establishment of the downlink channels in order to answer the poll request on the common control channel. The SS verifies that the MS sends PACKET CONTROL ACKNOWLEDGEMENT as four access bursts on the timeslot on which it received the polling command.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	SS		The SS initiate a downlink transfer of 200 octets data.
2a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF. Sent on PCH
2b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Poll bit in the MAC header is set to indicate a valid RRBP = 1. Sent on PACCH.
3	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	As four access bursts. Received on PACCH.
4	SS		The SS verifies that the MS sends the PACKET CONTROL ACKNOWLEDGEMENT as four access bursts, one per TDMA frame of the uplink radio block.

Specific message contents

None.

42.1.2.2.2 Void

42.1.2.2.3 Void

42.1.2.2.4 Packet Downlink Assignment / Response to Packet Polling

42.1.2.2.4.1 Conformance requirements

In case valid timing advance for the mobile station is not available, the network may use one of the following two methods to trigger the mobile station to transmit a PACKET CONTROL ACKNOWLEDGEMENT:

- if the PACKET DOWNLINK ASSIGNMENT message is not segmented and the CONTROL_ACK_TYPE parameter in the System Information indicates acknowledgement is access bursts, the network may set the poll bit in the PACKET DOWNLINK ASSIGNMENT message.
- if the PACKET DOWNLINK ASSIGNMENT message is segmented or the CONTROL_ACK_TYPE parameter in the System Information does not indicate acknowledgement is access bursts, the network may send PACKET POLLING REQUEST with TYPE_OF_ACK parameter set to access bursts (see subclause 11.2.12).

On receipt of a PACKET POLLING REQUEST message, the mobile station shall respond to the network with the PACKET CONTROL ACKNOWLEDGEMENT message in the block period specified by the RRBP field. If the MS has received a PACKET DOWNLINK ASSIGNMENT message with no starting time or with a starting time that has already elapsed, the PACKET POLLING REQUEST message shall be sent on PACCH. Otherwise the PACKET POLLING REQUEST message shall be sent on PACCH.

Reference

3GPP TS 04.60 subclauses 7.2.1.3 and 7.2.1.1.

42.1.2.2.4.2 Test purpose

To verify that on receipt of a PACKET POLLING REQUEST message, the mobile station responds with PACKET CONTROL ACKNOWLEDGEMENT message in the block period specified by the RRBP field.

42.1.2.2.4.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS, CCCH combined with SDCCH. CONTROL_ACK_TYPE is set to not indicate acknowledgement as four access bursts and ACCESS_BURST_TYPE indicate 8 bit access.

Mobile Station:

The MS is GPRS attached and in packet idle mode and Ready state.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The SS initiate a downlink data transfer by sending IMMEDIATE ASSIGNMENT on PCH. The SS sends PACKET DOWNLINK ASSIGNMENT message to the MS with a TBF starting time. The SS sends a PACKET POLLING REQUEST message containing a valid RRBp field. The SS verifies that the MS sends a PACKET CONTROL ACKNOWLEDGEMENT message in the block period specified by the RRBp field. The SS sends PACKET PDCH RELEASE message to the MS. The SS initiate a downlink data transfer by sending IMMEDIATE ASSIGNMENT on PCH. The SS sends PACKET DOWNLINK ASSIGNMENT message to the MS without TBF starting time. The SS sends a PACKET POLLING REQUEST message containing a valid RRBp field. The SS verifies that the MS sends a PACKET CONTROL ACKNOWLEDGEMENT message in the block period specified by the RRBp field.

Maximum duration of the test

5 minutes.

Expected sequence

Step	Direction	Message	Comments
1	SS		The SS initiate a downlink transfer of 200 octets data.
2a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF. Sent on PCH
2b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	See specific message contents. Sent on PACCH.
3	SS -> MS	PACKET POLLING REQUEST	Sent on PACCH after TBF starting time in step 2 has elapsed. See specific message contents.
4	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	The SS verifies that the MS send this message in the block period specified by the RRBp field as four access bursts. Received on PACCH.
5	SS -> MS	PACKET PDCH RELEASE	Sent on PACCH.
6	SS		Wait 20 s.
7	SS		The SS initiate a downlink transfer of 200 octets data.
8a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF. Sent on PCH
8b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	See specific message contents. Sent on PACCH.
9	SS -> MS	PACKET POLLING REQUEST	Sent on PACCH. See specific message contents.
10	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	The SS verifies that the MS send this message in the block period specified by the RRBp field as four access bursts. Received on PACCH.

Specific message contents

As default messages contents, except:

PACKET DOWNLINK ASSIGNMENT in step 2b

Information element	Value/remark
< TIMESLOT_ALLOCATION >	00000100, allocate timeslot 5.
{0 1< TBF Starting Time > -TBF_STARTING_TIME}	1 arbitrarily chosen

PACKET DOWNLINK ASSIGNMENT in step 8b

Information element	Value/remark
< TIMESLOT_ALLOCATION >	00000001, allocate timeslot 7.
{0 1< TBF Starting Time >}	0 (No TBF starting time)

PACKET POLLING REQUEST in step 3 and 9

Information element	Value/remark
RRBP in MAC header	Set to 1
S/P in MAC header	Set to 1 : RRBP field is valid
< MESSAGE_TYPE >	000100
< PAGE_MODE	Normal Paging
{ 0 < Global TFI >	
10 < TLLI >	0 (Global TFI)
110 < TQI >}	
1	DOWNLINK TFI Present
DOWNLINK TFI	As allocated in the PACKET DOWNLINK ASSIGNMENT message in Step 2 and Step 8 respectively
< TYPE_OF_ACK >	0 as four access bursts

42.1.2.2.5 Void

42.1.2.2.6 Packet Downlink Assignment Timing Advance / TA value field not provided

42.1.2.2.6.1 Conformance requirements

For the case where a TIMING_ADVANCE_VALUE field is not provided in the assignment message, the mobile station is not allowed to send normal bursts on the uplink until it receives a valid timing advance either through the continuous timing advance procedure or in a PACKET TIMING ADVANCE/POWER CONTROL message.

Reference

3GPP TS 04.60 subclause 7.1.2.5.

42.1.2.2.6.2 Test purpose

To verify that the mobile station does not send normal bursts on the uplink until it receives a valid timing advance in a PACKET POWER CONTROL/TIMING ADVANCE message if Timing Advance Value field is not provided in the PACKET DOWNLINK ASSIGNMENT message.

42.1.2.2.6.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS, CCCH combined with SDCCH.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 2 has been established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The SS initiates downlink data transfer by sending IMMEDIATE ASSIGNMENT on PCH. The SS sends PACKET DOWNLINK ASSIGNMENT message. The SS does not include Timing Advance in the PACKET DOWNLINK ASSIGNMENT. The SS poll MS by sending an RLC DATA BLOCK. SS verifies for 2 seconds that MS did not answer to poll and then send a PACKET POWER CONTROL/TIMING ADVANCE message with a valid timing advance information. The SS verifies that the MS does not send any normal burst on the uplink until the SS sends a valid timing advance.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The SS initiate a downlink transfer of 200 octets data.
2a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF. Sent on PCH
2b	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH. No Timing Advance Value
3	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on assigned PDTCHs with a valid RRBP field. Final Block Indicator is set to 0.
4	SS		SS verifies that the MS does not send any normal burst on the uplink.
5	SS -> MS	PACKET POWER CONTROL/TIMING ADVANCE	Include a valid Timing Advance information. Sent on PACCH.
6	SS->MS	DOWNLINK RLC DATA BLOCK	Sent on assigned PDTCHs with a valid RRBP field. Final Block Indicator is set to 0.
7	MS->SS	PACKET DOWNLINK ACK/NACK	The SS verifies that the MS indicating correct reception of downlink data blocks. Received on PACCH.

Specific message contents

None.

42.2 Void

42.3 Dynamic Allocation in Packet Transfer Mode

42.3.1 Dynamic Allocation / Uplink Transfer

42.3.1.1 Dynamic Allocation / Uplink Transfer / Normal

42.3.1.1.1 Dynamic Allocation / Uplink Transfer / Normal / Successful

42.3.1.1.1.1 Conformance requirements

1. The mobile station shall set the TFI field of each uplink RLC data block to the TFI value assigned to the mobile station in the PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message.
2. Whenever the mobile station detects an assigned USF value on an assigned PDCH, the mobile station shall transmit either a single RLC/MAC block or a sequence of four RLC/MAC blocks on the same PDCH in the next block period(s). The time relation between an uplink block, which the mobile station shall use for transmission, and the occurrence of the USF value is defined in 3GPP TS 05.02. The number of RLC/MAC blocks to transmit is controlled by the USF_GRANULARITY parameter characterising the uplink TBF.
3. At two-phase access the mobile station does not include its TLLI in any RLC data block.

References

3GPP TS 04.60, subclauses 8.1.1, 8.1.1.1 and 7.1.3.3.

3GPP TS 05.02, subclause 6.3.2.2.1.

42.3.1.1.1.2 Test purposes

To verify that the MS:

1. depending on the parameter USF_GRANULARITY, transmits one or a sequence of four RLC/MAC data block(s) in the next block period(s) on the PDCH on which it has detected its corresponding assigned USF.
2. includes the assigned TFI in each uplink RLC data blocks.
3. does not include its TLLI in any RLC data block at two phase access.

42.3.1.1.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, .

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC unacknowledged mode. The SS orders the MS to have two-phase access, in PACKET UPLINK ASSIGNMENT message the USF_GRANULARITY is set to 4 blocks. The SS sends the assigned USF assigned to the MS and checks that a sequence of four RLC/MAC data blocks in the next radio block period is received, and that each data block contains the correct TFI, but without TLLI. The SS assigns the USF assigned to the MS again. The check is repeated. The procedure is going on until the MS completes the packet data transfer.

The above test procedure is repeated once for USF_GRANULARITY set to one block.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n =600 octets, without starting time, USF_GRANULARITY = 4 blocks,
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	RLC_DATA_BLOCKS_GRANTED = open-end CHANNEL_CODING_COMMAND: arbitrarily chosen. Sent on the PACCH, the USF assigned to the MS, on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
4	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 3. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 4. Check that the coding is the scheme specified by CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 5. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
7	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH, the USF not addressing the MS.
8	SS		Check that no RLC data blocks are transmitted from the MS in the next radio block to step 7.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS.
10	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 10. Check that the TFI is correct.
12	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 11. Check that the TFI is correct.
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 12. Check that the TFI is correct.
14		{Completion of uplink RLC data block transfer}	USF_GRANULARITY = 4 blocks
15		{Uplink dynamic allocation two phase access}	Similar parameter values to step 1 Except USF_GRANULARITY = 1 blocks
16	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH, the USF assigned to the MS on 3 blocks from the last radio block containing the uplink assignment.
17	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
18	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH, the USF not addressing the MS.
19	SS		Check that no RLC data blocks are transmitted from the MS in the next radio block to step 18.
20	SS -> MS	PACKET UPLINK ACK/NACK	Sent on a PDCH with any different time slot as the assigned PDCH, the USF assigned to the MS.
21	SS		Check that no RLC data block is transmitted from the MS on the next radio block to step 20.
22	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH, the USF assigned to the MS.
23	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
24		{Completion of uplink RLC data block transfer}	USF_GRANULARITY = 1 block

42.3.1.1.2 Void

42.3.1.1.3 Dynamic Allocation / Uplink Transfer / Normal / Starting frame number encoding

42.3.1.1.3.1 Conformance requirements

1. In case of dynamic allocation, if no uplink TBF is in progress, the MS needs not monitor the USF field until the TDMA frame number occurs. When the indicated TDMA frame number occurs, the mobile station shall immediately begin to monitor the USF field and use the new assigned uplink TBF parameters when its USF occurs.
2. If an uplink TBF is already in progress, the MS shall continue to use the parameters of the existing TBF until the TDMA frame number occurs. When the indicated TDMA frame number occurs, the mobile station shall immediately begin to monitor the USF field and use the new assigned uplink TBF parameters when its USF occurs.
3. In case of single block allocation, the mobile station shall use the assigned timeslot during the RLC/MAC block whose first TDMA burst occurs in the indicated TDMA frame number.
4. If the mobile station is in packet transfer mode during the block immediately before the starting time and the lowest numbered PDCH assigned to the MS is different immediately before and after the starting time then the mobile station shall be ready to receive or transmit no later than one radio block from the starting time
5. If the Starting FN (in absolute frame number encoding) is not aligned to the start of a block period and the mobile station is in packet transfer mode during the TDMA immediately before the Starting FN, then the mobile station shall align the starting time to the next block boundary and continue to use the currently assigned allocation up to the next block boundary.

References

3GPP TS 04.60, subclauses 11.2.29, 12.21 and 12.21.1.

42.3.1.1.3.2 Test purposes

To verify that the MS, in transfer mode:

1. correctly uses the starting frame number description in PACKET UPLINK ASSIGNMENT, and in all subsequent RLC/MAC control messages which are sent on the uplink TBF;
2. is ready to receive or transmit no later than one radio block from the starting time;
3. is able to align the starting time to the next block boundary and continue to use the currently assigned allocation up to the next block boundary.

42.3.1.1.3.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer 440 octets in the RLC unacknowledged mode. The IMMEDIATE ASSIGNMENT message contains a starting time for the single block allocation. It is checked that the MS uses the time slot at the assigned frame number. In the two-phase access a starting time is included in PACKET UPLINK ASSIGNMENT. The assigned USF is on a radio block before the starting time. The MS does not react upon that. The assigned USF is on one block after the starting time. The MS sends a RLC data block.

The test procedure is repeated once. The starting time is encoded in relative frame number format.

Maximum Duration of Test

5 minutes.

Expected Sequence

The expected sequence is repeated once. In the 2nd execution the starting frame numbers in the specific message contents are encoded in the relative format.

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-3 The IMMEDIATE ASSIGNMENT contains starting time current frame + 1001. It is checked that PACKET RESOURCE REQUEST in the macro is sent at the starting time. The PACKET UPLINK ASSIGNMENT contains starting time specified in absolute frame number encoding, current frame + 91, The timeslot TN ₇ assigned.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS, Sent on one radio block before the starting time.
3	SS		Check that there is no RLC data block sent by the MS on the assigned PDTCH.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on one block after the starting time.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding is the scheme specified by CHANNEL_CODING_COMMAND in step 1, and TFI is correct.
6		{Completion of uplink RLC data block transfer}	

42.3.1.1.4 Dynamic Allocation / Uplink Transfer / Normal / Starting time

42.3.1.1.4.1 Conformance requirements

- 1 If a TBF starting time information element is present and no uplink TBF is in progress, but a downlink TBF is in progress, the mobile station shall wait until the starting time before beginning to monitor the USFs. While waiting for the starting time, the mobile station shall monitor the assigned PDCHs.
- 2 If an uplink TBF is already in progress, the mobile station shall continue to use the assigned parameters of the uplink TBF until the TDMA frame number indicated by the TBF starting time occurs. At that time the mobile station shall immediately begin to use the newly assigned uplink TBF parameters.
- 3 While waiting for the frame number indicated by the TBF starting time if the mobile station receives another uplink assignment, the mobile station shall act upon the most recently received uplink assignment and shall ignore the previous uplink assignment.

4 An MS shall be ready to transmit and receive using a new assignment no later than the next occurrence of block $B((x+3) \bmod 12)$ where block $B(x)$ is the last radio block containing the assignment message. This applies also for the reception of the first USF for dynamic uplink assignment.

References

3GPP TS 04.60, subclause 8.1.1.1, 3GPP TS 45.010 subclause 6.11.1.

42.3.1.1.4.2 Test purposes

To verify that after the MS receives an uplink assignment with starting time:

1. if a downlink TBF is in progress and no uplink TBF is in progress it monitors the assigned PDCHs while waiting for the starting time. If another uplink assignment received while waiting, the mobile station acts upon that and ignores the previous uplink assignment.
2. if an uplink TBF is already in progress, it continues to use the assigned parameters of the uplink TBF until the TDMA frame number indicated by the TBF starting time occurs. While waiting for the frame number indicated by the TBF starting time the mobile station receives another uplink assignment, the mobile station acts upon that and ignores the previous uplink assignment. As soon as the starting time occurs the MS immediately begins to use the newly assigned uplink TBF parameters.

42.3.1.1.4.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context2 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

A downlink TBF is established and in progress. An uplink TBF is established with a starting time which does not yet elapse. The SS sends two downlink data blocks before the starting time to the MS and signals the assigned TBF addressing the MS for uplink transfer. It is checked that no uplink RLC data blocks are sent by the MS. The SS sends PACKET TIMESLOT RECONFIGURE on three radio blocks before the starting time, assigning a new starting time. Two downlink data blocks are then sent to the MS before the new starting time occurs. Each data block contains one of the assigned USFs addressing the MS. It is checked that no uplink data blocks are sent from the MS. After the new starting time elapses the SS sends a downlink data block containing the USF assigned to the MS. The MS sends an uplink data block. The MS is brought to Idle mode.

Subsequently an uplink TBF is established. The SS sends PACKET UPLINK ASSIGNMENT assigning a reconfigured PDCH with a starting time and a new USF associated. Before the starting time the SS signals the USF of the ongoing TBF addressing the MS. The SS receives an uplink data block from the MS. The SS sends UPLINK ASSIGNMENT on three radio blocks before the starting time, assigning a new reconfigured PDCH with a starting time and a different USF associated. The later assignment overwrites the earlier one.. While waiting for the frame number of the newly assigned starting time the SS signals the USF of the previous assignment on both the ongoing PDCH and on the previous assigned PDCH. The MS ignores it. The SS signals the USF of the ongoing TBF addressing the MS. An uplink data block can be received. On one radio block before the starting time the SS signals the later assigned USF assigned to the MS on the later assigned PDCH. No uplink data block is received. On one radio block after the starting time the SS signals the just expired USF. No uplink data block is received. Then the SS signals the valid USF assigned to the MS. An uplink data block is received.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Downlink TBF establishment}	RLC mode: acknowledged, without starting time
2	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=0 and a valid RRBP, sent on the third block after the last radio block containing the downlink assignment.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	
4	MS		The MS is triggered to send 440 octets of user data.
5	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=0 and a valid RRBP.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP of downlink PACCH. Contains Channel Request Description IE.
7	SS -> MS	PACKET UPLINK ASSIGNMENT	Note : If the triggering of the uplink access involves a manual operation taking more than 5s to complete, steps 5 and 6 are repeated (until the MS does include the Channel Request Description IE) at least once every 5s in order to keep the downlink transfer active. USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end CHANNEL_CODING_COMMAND: arbitrarily chosen. TBF Starting Time : starting time ₁ , the current frame + 104 frames, encoded in absolute frame number. The uplink TBF is assigned on the same timeslot as the downlink TBF.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	FBI=0, the assigned USF ₁ to the MS. Sent on downlink PDTCH, 12 data blocks (52 TDMA frames) before the starting time ₁ .
9	SS -> MS	DOWNLINK RLC DATA BLOCK	FBI=0, the assigned USF ₁ to the MS. Sent on downlink PDTCH, 5 blocks before the starting time ₁ , a valid RRBP = N+13.
10	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP on downlink PACCH.
11	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assigned USF ₁ addressing the MS, sent on three blocks before the starting time ₁ . Assigned a new USF ₂ on the same timeslot, with starting time ₂ , current frame + 104 frames in relative frame number encoding.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	On 4 blocks from the last radio block containing the uplink assignment in step 11, with FBI=0, the assigned previous USF ₁ addressing the MS. Sent on downlink PDTCH.

Step	Direction	Message	Comments
13	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI=0, the assigned USF ₂ addressing the MS. Sent on downlink PDTCH, one radio block before the starting time ₂ .
14	SS		Check that from the step 4 onwards till the starting time ₂ , there is no RLC data block sent by the MS on the assigned uplink PDTCH.
15	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI=0, a valid RRBP, the assigned USF ₂ addressing the MS. Sent on downlink PDTCH, on the frame number specified in the starting time ₂ .
16	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned uplink PDTCH.
17	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP of downlink PACCH.
18	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI=1 and a valid RRBP. Sent on downlink PDTCH.
19	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP of the downlink PACCH.
20		{Completion of uplink RLC data block transfer}	
21		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: arbitrarily chosen CHANNEL_CODING_COMMAND: cs-1 The timeslot TN ₃ assigned
22	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ addressing the MS, sent on 3 blocks from the last radio block containing the uplink assignment in step 21.
23	MS -> SS	UPLINK RLC DATA BLOCK	Check that the coding is cs1, the TFI is correct.
24	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₁ addressing the MS.
25	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
26		PACKET UPLINK ASSIGNMENT	Assign an uplink TBF on the timeslot TN ₂ , containing new TFI ₂ , USF ₂ , starting time ₃ , current frame + 117 in relative encoding. Sent on PACCH assigned.
27		PACKET UPLINK ACK/NACK	USF ₁ addressing the MS, sent on 5 radio blocks before the starting time ₃ , on PACCH assigned in step 21.
28		UPLINK RLC DATA BLOCK	Check that the coding is cs1, the TFI is correct.
29	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign a TBF on the timeslot TN ₁ , containing new TFI ₃ , USF ₃ , cs-3 coding, starting time ₄ , current frame + 325 in relative encoding. Sent on three radio blocks before the starting time ₃ , on PACCH assigned in step 21.
30	SS -> MS	PACKET UPLINK ACK/NACK	USF ₂ addressing the MS, sent on 4 blocks from the last radio block containing the uplink assignment in step 29 on the PACCH assigned in step 26.
31	SS		Check that no data block is sent from the MS on the assigned radio block on the PDTCH assigned in step 26.
32	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF ₁ addressing the MS, sent on 5 radio blocks before the starting time ₄ , on PACCH assigned in step 21.
33	MS -> SS	UPLINK RLC DATA BLOCK	Check that the coding is cs1, the TFI is correct.
34	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF ₃ addressing the MS, sent on one radio block before the starting time ₄ , on PACCH assigned in step 26.
35	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF ₁ addressing the MS, sent on one radio block after the starting time ₄ , on PACCH assigned in step 21.
36	SS		Check that no data blocks are sent from the MS on the radio blocks assigned in steps 34 and 35, or any intermediate radio blocks, on any of the three PDTCHs assigned
37	SS -> MS	PACKET UPLINK ACK/NACK	Containing USF ₃ . Sent on PACCH of PDCH assigned in step 29.
38	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 29. Use coding cs-1.
(optional step)			If step 38 is performed, then step 39 must be performed.
39(optional step)	SS -> MS	PACKET UPLINK ACK/NACK	Only performed if step 38 is performed Containing USF ₃ . Sent on PACCH of PDCH assigned in step 29.
40	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 29. Check that the coding cs-3 and TFI ₃ are correct.
41		{Completion of uplink RLC data block transfer}	

42.3.1.1.5 Void

42.3.1.1.6 Dynamic Allocation / Uplink Transfer / Normal / T3180 expiry

42.3.1.1.6.1 Conformance requirements

When the mobile station transmits an RLC/MAC block to the network, it shall start timer T3180. When the mobile station detects an assigned USF value on an assigned PDCH, the mobile station shall reset timer T3180. If timer T3180 expires, the mobile station shall perform the abnormal release with random access procedure.

References

3GPP TS 04.60, subclause 8.1.1.1.

42.3.1.1.6.2 Test purposes

To verify that

1. Timer T3180 will not expire as long as an USF for the MS under test is detected in the downlink blocks within the defined time period of the timer. (It is implicitly verified).
2. Timer T3180 expires if no USF for the MS under test is detected during a time period longer than T3180.
3. The MS performs an abnormal release with random access procedure after T3180 expires.

42.3.1.1.6.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

An uplink TBF is established and in progress. After the MS sends an uplink data block the SS repeatedly sends PACKET UPLINK ACK/NACK containing any USF and any TFI which do not address the MS for 4.5s. Before T3180 times out the SS signals the USF assigned to the MS. The MS sends a data block. Then the SS repeatedly sends PACKET UPLINK ACK/NACK containing any USF and any TFI which do not address the MS until receiving CHANNEL REQUEST from the MS for establishment of a new TBF.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	CHANNEL_CODING_COMMAND: arbitrarily chosen. The USF assigned to the MS sent on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the TFI is correct.
4	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 2, the USF assigned to the MS.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the TFI is correct.
6	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH, containing a different TFI and USF from the assigned ones to the MS.
7	SS		Repeat step 6 every 5 radio blocks for 4.5 s. (T3180 * 90%) the SS signals different USFs on the assigned PDCH, but none of them addressing the MS.
8	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 2, the USF assigned to the MS.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the TFI is correct.
10	SS		Repeat step 6 every 5 radio blocks until step 11 occurs. The maximum period for the repetition is of 8s. None of the signalled USFs addresses the MS on the assigned PDCH.
11	MS -> SS	CHANNEL REQUEST	Received on RACH within 7.5 seconds
12	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment, to order the MS making two-phase access procedure. Sent on AGCH.
13	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 12.
14	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block, Sent on PACCH of the same PDCH assigned in step 12.
15	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 14.
16	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding scheme is that specified in step 14 by CHANNEL_CODING_COMMAND and the TFI is correct.
17		{Completion of uplink RLC data block transfer}	

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 14:

CHANNEL_CODING_COMMAND	Arbitrarily chosen
Dynamic allocation	01
- Extended Dynamic Allocation	0 (Dynamic allocation)
-	0
- USF granularity	0 (1 block)
- {0 1<UPLINK_TFI_ASSIGNMENT>}	1 (uplink TFI assignment)
- UPLINK_TFI	00000
- {0 1<RLC_DATA_BLOCKS_GRANTED>}	0 (no RLC_DATA_BLOCKS_GRANTED, open-ended TBF)
- {0 1<TBF_STARTING_TIME>}	0 (no starting time)
-	0 (Timeslot Allocation Parameters)
	one slot arbitrarily chosen but different from the value in step 2

42.3.1.1.7 Dynamic Allocation / Uplink Transfer / Normal / PACCH operation

42.3.1.1.7.1 Conformance requirements

1. The mobile station shall attempt to decode every downlink RLC/MAC block on all assigned PDCHs. Whenever the mobile station receives an RLC/MAC block containing an RLC/MAC control block, the mobile station shall attempt to interpret the message contained therein. If the message addresses the mobile station, the mobile station shall act on the message. The mobile station shall not transmit an RLC data block in any uplink radio block allocated via the polling mechanism.
2. PACKET POLLING REQUEST is sent on the PCCCH or PACCH by the network to the mobile station to solicit a PACKET CONTROL ACKNOWLEDGEMENT message from the mobile station.
3. In downlink RLC/MAC control blocks, the TFI identifies the Temporary Block Flow (TBF) to which the RLC/MAC control message contained in the downlink RLC/MAC control block relates. If present, this field indicates the mobile station to which the control message is addressed, and all other mobile stations shall ignore the control message. If this field is present and the contents of the control message also contain a TFI addressing the mobile station, the mobile station shall ignore the TFI in the control message contents.

References

3GPP TS 04.60, subclauses 8.1.1.1.1, 11.2.12 and 10.4.10.

42.3.1.1.7.2 Test purposes

To verify that:

1. The MS attempts to decode every downlink RLC/MAC block on all assigned PDCHs whenever the MS receives an RLC/MAC block containing an RLC/MAC control block, the MS attempts to interpret the message contained therein, such as Payload type and TFI in the optional fields. If the message addresses the MS, it acts upon the message.
2. When receiving PACKET POLLING REQUEST on PACCH the MS responds with four PACKET CONTROL ACKNOWLEDGEMENT messages of access burst format and does not transmit an RLC data block in any uplink radio block allocated via the polling mechanism.

42.3.1.1.7.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

A TBF is established. It is polled with PACKET POLLING REQUEST containing a global TFI not addressing the MS. The assigned USF addresses the MS. The MS transmits a data block. The SS polls the MS with PACKET POLLING REQUEST containing any global TFI not addressing the MS. The message has optional octets where TFI does address the MS. The MS responds with PACKET CONTROL ACKNOWLEDGEMENT four times in access burst formats. The SS polls again the MS with PACKET POLLING REQUEST containing the global TFI addressing the MS. The MS responds with PACKET CONTROL ACKNOWLEDGEMENT four times in access burst formats.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end CHANNEL_CODING_COMMAND: arbitrarily chosen.
2	SS -> MS	PACKET POLLING REQUEST	the USF assigned to the MS, the TFI in the message not addressing the MS, no optional octets in RLC/MAC header, a valid RRBP
3	MS -> SS	UPLINK RLC DATA BLOCK	Check the TFI is correct as assigned in step 1.
4	SS -> MS	PACKET POLLING REQUEST	NOT the USF assigned to the MS, the global TFI in the message contents NOT addressing the MS, Payload type indicates the RLC/MAC header containing optional octets where TFI DOES address the MS, RBSN='0'. TYPE_OF_ACK = '0', a valid RRBP=N+13
5	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	4 access bursts. Received on PACCH, CTRL_ACK = '10'.
6	SS -> MS	PACKET POLLING REQUEST	Not the USF assigned to the MS. The global TFI in the message contents addressing the MS. Payload type indicates the RLC/MAC header containing optional octets where TFI not addressing the MS. a valid RRBP
7	SS		Check the MS ignores the polling .
8	SS -> MS	PACKET POLLING REQUEST	Not the USF assigned to the MS. the Global TFI addresses the MS, RLC/MAC header containing no optional octets. TYPE_OF_ACK = '0', a valid RRBP
9	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	4 access bursts, received on PACCH.
10		{Completion of uplink RLC data block transfer}	

42.3.1.1.8 Dynamic Allocation / Uplink Transfer / Normal / Two uplink timeslots

42.3.1.1.8.1 Conformance requirements

Mobile station belonging to multislot class 3, 5, 6, 7 and 9 to 29 shall support at least two transmit timeslots per TDMA frame (refer to 3GPP TS 05.02, clause B.1).

References

3GPP TS 05.02, clause B.1.

42.3.1.1.8.2 Test purposes

To verify that an MS belonging to GPRS multislot class 5, 6, 7 and 9 to 29 supports an uplink TBF using two timeslots per TDMA frame.

42.3.1.1.8.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context2 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure, in PACKET UPLINK ASSIGNMENT two timeslots are assigned. On the same TDMA frame the SS signals to the MS the assigned USFs addressing the MS on the two assigned PDTCHs. It is checked that the two RLC/MAC data blocks in the next radio block period are received on the respective PDTCH channels and that each data block contains the correct TFI without TLLI.

The SS acknowledges the received data and assigns the USFs addressing the MS. The check is repeated. The same procedure is going on until the MS completes the packet data transfer.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end CHANNEL_CODING_COMMAND: arbitrarily. Two timeslots, USF ₀ on TN ₀ and USF ₁ on TN ₁ , are assigned.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₀ on PDTCH ₀ addressing the MS on 3 blocks from the last radio block containing the uplink assignment.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PDTCH ₁ addressing the MS, sent on the same TDMA frame as step 2.
4	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₀ . Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ on the same TDMA frame as step 4. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
6	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₀ on PDTCH ₀ addressing the MS.
7	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₁ on PDTCH ₁ addressing the MS, sent on the same TDMA frame as step 6.
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₀ . Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ , on the same TDMA frame as step 8. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
10		{Completion of uplink RLC data block transfer}	

Specific Message Contents

None

42.3.1.1.9 Void

42.3.1.1.10 Dynamic Allocation / Uplink Transfer / Normal / USF assigned with MCS-1 to MCS-4

42.3.1.1.10.1 Conformance requirements

In 44.060 it is stated: "If dynamic or extended dynamic allocation is used, a mobile station in GPRS TBF mode shall be able to detect the USF that assigns the uplink to that mobile station. The network shall use GMSK modulation, i.e. either CS-1 to CS-4 or MCS-1 to MCS-4, in those blocks."

In 45.003 it is stated: "For the coding schemes CS-2 to CS-4 and MCS-1 to MCS-4, the first three bits (USF-bits) of the data block are encoded such that the first twelve coded bits are representing the same bit pattern, irrespective of the coding scheme, depending only on the USF-bits. For these coding schemes, the USF-bits can therefore always be decoded from these twelve bits in the same way."

According to these two requirements, a MS in GPRS TBF mode shall detect an assigned USF value on an assigned PDCH when the network sends the USF in a EGPRS RLC/MAC block coded with MCS-1 to MCS-4.

References

3GPP TS 44.060, subclauses 5.2.4a.

3GPP TS 45.003, subclauses 5.1.

42.3.1.1.10.2 Test purposes

To verify that a MS in GPRS TBF mode in uplink detects the assigned USFs when the network assigns these USFs with data blocks coded with MCS-1 to MCS-4.

42.3.1.1.10.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

The MS is triggered to initiate a packet uplink data transfer in RLC acknowledged mode on one PDCH. The SS orders the MS to have a two-phase access, in PACKET UPLINK ASSIGNMENT message with the USF_GRANULARITY set to 1 block.

The SS sends on the assigned PDCH an EGPRS data block coded with MCS-1 containing the USF value assigned to the MS on the corresponding PDCH. The SS checks that the MS sends in response on the assigned PDCH the expected data block.

The test is repeated by the SS using EGPRS data blocks coded successively with MCS-2, MCS-3 and MCS-4 to assign the USF to the MS.

Then the data transfer is completed.

Maximum Duration of Test

1 minute.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n =200 octets , without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end, TLLI_BLOCK_CHANNEL_CODING: CS-1, CHANNEL_CODING_COMMAND: CS-1, No starting time.
2	SS -> MS	DOWNLINK EGPRS RLC DATA BLOCK	Sent on the PDTCH assigned to the MS. The data block is coded with MCS-1 and contains the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 2. Check that the TFI and the data are coded with CS-1.
4	SS -> MS	DOWNLINK EGPRS RLC DATA BLOCK	Sent on the PDTCH assigned to the MS. The data block is coded with MCS-2 and contains the USF assigned to the MS.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 4. Check that the TFI and the data are coded with CS-1..
6	SS -> MS	DOWNLINK EGPRS RLC DATA BLOCK	Sent on the PDTCH assigned to the MS. The data block is coded with MCS-3 and contains the USF assigned to the MS.
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 6. Check that the TFI and the data are coded with CS-1.
8	SS -> MS	DOWNLINK EGPRS RLC DATA BLOCK	Sent on the PDTCH assigned to the MS. The data block is coded with MCS-4 and contains the USF assigned to the MS.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH in the next radio block to step 8. Check that the TFI and the data are coded with CS-1.
10	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH, the USF not addressing the MS.
11		{Completion of uplink RLC data block transfer}	USF_GRANULARITY = 1 block; 1 slot assigned in uplink.

42.3.1.2 Dynamic Allocation / Uplink Transfer / Abnormal

42.3.1.2.1 Void

42.3.1.2.2 Void

42.3.1.2.3 Void

42.3.2 Dynamic Allocation / Uplink Transfer with Downlink TBF establishment (concurrent)

42.3.2.1 Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Normal

42.3.2.1.1 Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Normal / Successful

42.3.2.1.1.1 Conformance requirements

During uplink transfer, the network may initiate a downlink TBF by sending a PACKET DOWNLINK ASSIGNMENT message, or a PACKET TIMESLOT RECONFIGURE, to the mobile station on the PACCH. If a PACKET TIMESLOT RECONFIGURE message is sent, then the message shall contain the DOWNLINK_TFI_ASSIGNMENT field. On receipt of an assignment message, and after the TBF starting time, if present, the mobile station shall switch to the

assigned PDCHs. The operation of the downlink TBF follows the procedures in 3GPP TS 04.60, subclause 8.1.2 with the following additions:

1. If a timer or counter expiry causes the uplink TBF to be aborted in the mobile station, the mobile station shall also abort the downlink TBF and perform an abnormal release with random access.
2. If uplink and downlink TBFs are already established, then the network may send a PACKET TIMESLOT RECONFIGURE message without DOWNLINK_TFI_ASSIGNMENT. The mobile station shall interpret this as a reassignment of the timeslot allocations of the concurrent uplink and downlink TBFs and the downlink TFI is not changed.

References

3GPP TS 04.60, subclauses 8.1.1.1.3 and 8.1.2.

42.3.2.1.1.2 Test purposes

To verify that during uplink transfer:

1. The MS switches to the assigned PDCHs when the network initiates a downlink TBF by sending PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE to the MS on PACCH.
2. When the MS receives PACKET TIMESLOT RECONFIGURE without DOWNLINK_TFI_ASSIGNMENT in the case of uplink and downlink TBFs established already, the MS interprets this message as a reassignment of the timeslot allocations of the concurrent uplink and downlink TBFs.
3. The MS also aborts the downlink TBF and performs an abnormal release with random access if a timer or a counter expiry causes the uplink TBF to be aborted in the MS.

42.3.2.1.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

An uplink TBF is established and in progress. After the MS sends an uplink data block the SS assigns a downlink TBF on the same timeslot as the uplink TBF. The SS sends a downlink data block with polling for acknowledgement and the assigned USF assigned to the MS for the MS, and indicates FBI=1 for the final data block. The MS sends an uplink data block and acknowledges the received downlink data block on the correct frame. The SS waits 2s for the MS releasing the downlink PDCH. The SS sends PACKET TIMESLOT RECONFIGURE assigning a new downlink PDCH. A downlink data block is sent, the assigned USF assigned to the MS and the MS is polled for acknowledgement. The MS sends an uplink data block and acknowledges the last received downlink data block on the correct frame.

The SS sends PACKET TIMESLOT RECONFIGURE without DOWNLINK_TFI_ASSIGNMENT replacing the existing uplink and downlink PDCH with another pair of concurrent PDCH. A downlink data block is sent on the replaced PDCH and the MS is polled for acknowledgement. The MS shall not react upon it. Another downlink data block is sent on the assigned PDCH, the assigned USF assigned to the MS and the MS is polled for acknowledgement. The MS sends an uplink data block and acknowledges the received downlink data block on the correct frame.

The SS sends downlink data blocks with USF not addressing the MS until receives CHANNEL REQUEST.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end CHANNEL_CODING_COMMAND: arbitrarily chosen.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The assigned USF assigned to the MS on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PACCH, assigning a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged, single timeslot, TFI ₂ , no starting time. Containing RRBp= N+13 and USF assigned to the MS. FBI = '1'. Sent on the downlink PDTCH on 3 blocks from the last radio block containing the downlink assignment.
5	SS -> MS	DOWNLINK RLC DATA BLOCK	Received on the uplink PDTCH assigned in step 1.
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the frame number = N+13, N is the frame number of the first burst of the data block in step 5.
7	MS -> SS	PACKET CONTROL ACK	Containing USF assigned to the MS
8	SS -> MS	PACKET UPLINK ACK/NACK	Received on the uplink PDTCH assigned in step 1.
9	MS -> SS	UPLINK RLC DATA BLOCK	Wait 2 s for T3192 timeout.
10	SS		
11	SS -> MS	PACKET TIMESLOT RECONFIGURE	Sent on the PACCH of the PDCH assigned in step 1. Assign a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged, single slot, TFI ₂ , no starting time.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	Containing RRBp= N+21 or +22 and USF assigned to the MS. FBI = '0'. Sent on the downlink PDTCH assigned on 3 blocks from the last radio block containing the downlink assignment in step 11.
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH assigned in step 1.
14	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block of frame number = N+21 or +22, N is the frame number of the first burst of the data block in step 12.
15	SS -> MS	PACKET TIMESLOT RECONFIGURE	Without DOWNLINK_TFI_ASSIGNMENT, Assign new uplink and downlink time slots, no starting time, sent on the PACCH of the PDCH assigned in step 11.
16	SS -> MS	DOWNLINK RLC DATA BLOCK	Containing USF assigned to the MS. Sent on the downlink PDTCH assigned in step 11 on 3 blocks from the last radio block containing the assignment in step 15.
17	SS		Check that neither data blocks, nor control blocks are sent by the MS within the next seven radio blocks.
18	SS -> MS	DOWNLINK RLC DATA BLOCK	Containing a valid RRBp= N+26 and USF assigned to the MS. Sent on the downlink PDTCH assigned in step 15.
19	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH assigned in step 15.
20	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block of frame number = N+26, N is the frame number of the first burst of the data block in step 18, on the PACCH of the downlink PDCH.
21	SS -> MS	DOWNLINK RLC DATA BLOCK	USF not addressing the MS.
22	SS -> MS		Repeat step 21 until receives CHANNEL REQUEST in step 23.
23	MS -> SS	CHANNEL REQUEST	Received on RACH within 7.5 seconds from step 20.
24	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment,
25	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 24.
26	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = 4 blocks, Sent on PACCH of the same PDCH assigned in step 24.
27	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned on 3 blocks from the last radio block containing the uplink assignment in step 26.
28	MS -> SS	UPLINK RLC DATA BLOCK	Received 4 consecutive data blocks
29		{Completion of uplink RLC data block transfer}	

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 4:

PAGE_MODE {0 1<PERSISTENCE_LEVEL>}	Normal 0
- Global TFI	0, Global TFI as reference 0, uplink TFI same value as assigned in the uplink in step 1
MAC_MODE	Dynamic allocation
RLC_MODE	Unacknowledged
CONTROL_ACK	0
TIMESLOT_ALLOCATION	same slot number as assigned in the uplink TBF
Packet Timing Advance	
- {0 1<TIMING_ADVANCE_VALUE>}	1
- TIMING_ADVANCE_VALUE	30 bit periods
- {0 1<TIMING_ADVANCE_INDEX>	0 (no timing advance index)
<TIMING_ADVANCE_TIMESLOT_NUMBER >}	
{0 1<P0><BTS_PWR_CTR_MODE >}	0
{0 1<Frequency Parameters>}	0 (no Frequency Parameters present)
{0 1<DOWNLINK_TFI_ASSIGNMENT>}	1 (assign downlink TFI)
- DOWNLINK_TFI_ASSIGNMENT	arbitrarily chosen from valid values but different from the value for uplink TBF
{0 1<Power Control Parameters>}	0 (no Power Control Parameters present)
{0 1<TBF_STARTING_TIME>}	0 (no starting time)
{0 1<Measurement Mapping>}	0 (no starting time)

PACKET TIMESLOT RECONFIGURE message in step 11:

PAGE_MODE	Normal
- Global TFI	0, Global TFI as reference 0, uplink TFI same value as assigned in the uplink in step 1
CHANNEL_CODING_COMMAND	Arbitrarily chosen from valid values
Global packet Timing Advance	
- {0 1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0 1<UPLINK_TIMING_ADVANCE_INDEX>	0 (no uplink timing advance index)
<UPLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>}	The MS stops the operation of the continuous timing advance procedure.
- {0 1<DOWNLINK_TIMING_ADVANCE_INDEX>	0 (no downlink timing advance index)
<DOWNLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>}	The MS stops the operation of the continuous timing advance procedure.
DOWNLINK_RLC_MODE	Unacknowledged mode
CONTROL_ACK	0
{0 1<DOWNLINK_TFI_ASSIGNMENT>}	1 (assign a new TFI for downlink TBF)
- GLOBAL_TFI_ASSIGNMENT	Arbitrarily chosen but different from the value for uplink TBF
{0 1<UPLINK_TFI_ASSIGNMENT>}	0
DOWNLINK_TIMESLOT_ALLOCATION	Same as the slot of the uplink TBF
{0 1<Frequency parameters>}	0
{0 <Dynamic allocation> 1<Fixed allocation>}	See note

PACKET TIMESLOT RECONFIGURE message in step 15:

PAGE_MODE	Normal
- Global TFI	0, Global TFI as reference 0, uplink TFI same value as assigned in the uplink in step 1
CHANNEL_CODING_COMMAND	Arbitrarily chosen from valid values
Global packet Timing Advance	
- {0 1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0 1<UPLINK_TIMING_ADVANCE_INDEX>	0 (no uplink timing advance index)
<UPLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>}	The MS stops the operation of the continuous timing advance procedure.
- {0 1<DOWNLINK_TIMING_ADVANCE_INDEX>	0 (no downlink timing advance index)
<DOWNLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>	The MS stops the operation of the continuous timing advance procedure.
DOWNLINK_RLC_MODE	Unacknowledged mode
CONTROL_ACK	0
{0 1<DOWNLINK_TFI_ASSIGNMENT>}	0
{0 1<UPLINK_TFI_ASSIGNMENT>}	0
DOWNLINK_TIMESLOT_ALLOCATION	Timeslot 5 assigned
{0 1<Frequency parameters>}	0
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
{0 1<P0>}	0
- USF GRANULARITY	0 (1 RLC block)
- {0 1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0 1<TBF_STARTING_TIME>}	0 (no starting time)
-	1 (Timeslot Allocation with Power Control Parameters)
- ALPHA	0.5
- {0 1<USF_TN><GAMMA_TN>}	000001 (timeslot 5 assigned)
- USF_TN ₅	Arbitrarily chosen but different from current value
- GAMMA_TN ₅	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm For DCS 1 800 and PCS 1 900, +6 dBm
	00

42.3.2.1.2 Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Normal / Multislot capabilities

42.3.2.1.2.1 Conformance requirements

1. Mobile station belonging to multislot class 2, 3, 4, 5, 6, 8, 9, 10, 19 and 24 shall support as many uplink and downlink timeslots as indicated in 3GPP TS 05.02 clause B.1.
2. If transmission of the PACKET CONTROL ACKNOWLEDGEMENT would result in more than the maximum Tx timeslots per TDMA frame allowed by the multislot class, transmission of the highest numbered PDCH(s) shall be omitted.

References

3GPP TS 05.02, clause B.1.

3GPP TS 04.60, subclause 8.6.

42.3.2.1.2.2 Test purposes

To verify that the GPRS multislot MS supports as many uplink and downlink TBFs per TDMA frame as indicated. Especially, it is verified that the Type 1 MS in a GPRS multislot class declared has the capability of supporting:

1. T_{tb} , the minimum number of slots allowed between the end of the previous transmit or receive TS and the next transmit TS when measurement is to be performed for type 1 MS;
2. T_{ra} , the minimum number of slots allowed between the previous transmit or receive TS and the next receive TS when measurement is to be performed for type 1 MS;
3. the maximum number of Rx and Tx supported;

4. the sum of slots supported.

It is also verified that the MS of a GPRS multislot class transmits PACKET CONTROL ACKNOWLEDGEMENT when polled, and omits the transmission of the highest numbered PDCH(s) if the transmission would result in more than the maximum Tx timeslots per TDMA frame allowed by the multislot class.

42.3.2.1.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 activated.

Specific PICS Statements

- TSPC_Type_GPRS_Multislot_ClassX (where X = 1..45)

PIXIT Statements

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Test Procedure

The following GPRS multislot configurations are tested in the test case:

- Class 2 and 3 support two downlink timeslots and one uplink timeslot, $T_{tb}=2$, $T_{ra}=3$;
- Class 4 and 6 support three downlink timeslots and one uplink timeslot, $T_{tb}=1$, $T_{ra}=3$;
- Class 5 and 9 supports two downlink timeslots and two uplink timeslots, $T_{tb}=1$, $T_{ra}=3$;
- Class 8 and 10 support four downlink timeslots and one uplink timeslot, $T_{tb}=1$, $T_{ra}=2$;
- Class 19 and 24 support five downlink timeslots and one uplink timeslot, $T_{tb}=1$, $T_{ra}=2$.

In the multislot configurations all assigned channels are frequency hopped except for the class 19 and 24 test where non-hopping channels are assigned for PDCHs. The class 3, 6, 9 and 10 are tested in a reduced uplink configuration.

According to the multislot configurations an uplink TBF with one or two timeslots assigned is established and in progress. The SS establishes a concurrent downlink TBF with multiple timeslots assigned.

On the 1st radio block the SS sends downlink data in the maximum capability allowed under the configuration, signals to the MS the assigned USFs addressing the MS and polls the MS. On the 2nd radio block the MS sends RLC data in response of the addressing the MS USFs. On the 6th radio block the SS sends downlink data in the maximum capability allowed under the configuration and signals to the MS the assigned USFs addressing the MS. On the 7th radio block the MS responds PACKET DOWNLINK ACK/NACK and sends RLC data in response of one of the USFs addressing the MS if the configuration is allowed.

The basic test procedure is repeated until CV=1. The SS sends the last RLC data block with FBI=1 and polls the MS for acknowledgement. The SS sends PACKET UPLINK ACK/NACK setting FINAL_ACK_INDICATION=1. The MS sends two separate PACKET CONTROL ACKNOWLEDGEMENT messages to release the uplink and downlink TBFs.

Maximum Duration of Test

5 minutes.

Expected Sequence for GPRS multislot class 2 and class 3 (2 downlink timeslots + 1 uplink timeslot)

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1 CHANNEL_CODING_COMMAND: cs1 An uplink timeslot is assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 1.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH.
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of the uplink PDCH. Assigning a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, TFI _d (different from the uplink one), no starting time, assigning TN ₁ and TN ₂ .
5	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the downlink PDTCH, RRBP invalid.
6	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the downlink PDTCH, a valid RRBP = N + 26, the assigned USF assigned to the MS, on the same radio block as step 5.
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH, on the next radio block from step 6.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the downlink PDTCH, RRBP invalid, on five radio blocks after step 6.
9	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the downlink PDTCH, the assigned USF assigned to the MS and RRBP invalid, on the same radio block as in step 8. Note: The next uplink radio will not be used for the uplink data. It is reserved for a control block answering the polling in step 6.
10	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBP block on TN ₂ specified in step 6.
11			Repeat step 5 to 10, until CV=0 in step 7.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ with FBI = 1 and a valid RRBP=N+26.
13	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on TN ₂ PACCH of the uplink PDCH. With a valid RRBP=N+13
14	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 11. The MS releases the uplink TBF.
15	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 12. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 1 (in macro):

Timeslot Allocation - { 0 1 < USF_TN2 > } - USF_TN2	0 Timeslot Allocation without Power Control Parameters 1 USF not assigned Arbitrarily chosen (default 000)
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PACKET DOWNLINK ASSIGNMENT message in step 4:

PAGE_MODE	Normal
{0 1<PERSISTENCE_LEVEL>}	0
- Global TFI	0, Global TFI as reference 0, uplink TFI same value as assigned in the uplink in step 1
MAC_MODE	Dynamic allocation
RLC_MODE	Unacknowledged
CONTROL_ACK	0
TIMESLOT_ALLOCATION	Timeslot 1 and 2 assigned
Packet Timing Advance	
- {0 1<TIMING_ADVANCE_VALUE>}	1
- TIMING_ADVANCE_VALUE	30 bit periods
- {0 1<TIMING_ADVANCE_INDEX>	0 (no timing advance index)
<TIMING_ADVANCE_TIMESLOT_NUMBER >}	
{0 1<P0><BTS_PWR_CTR_MODE >}	0
{0 1<Frequency Parameters>}	0 (no Frequency Parameters present)
{0 1<DOWNLINK_TFI_ASSIGNMENT>}	1 (assign downlink TFI)
- DOWNLINK_TFI_ASSIGNMENT	Arbitrarily chosen from valid values but different from the value for uplink TFI
{0 1<Power Control Parameters>}	0 (no Power Control Parameters present)
{0 1<TBF_STARTING_TIME>}	0 (no starting time)
{0 1<Measurement Mapping>}	0 (no starting time)

Expected Sequence for GPRS multislots class 4 and 6 (3 downlink timeslots + 1 uplink timeslot)

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 330 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1 CHANNEL_CODING_COMMAND: cs1 An uplink timeslot is assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 1.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH.
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of the uplink PDCH. Assigning a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, TFI _d (different from the uplink one), no starting time, assigning the timeslots TN ₁ , TN ₂ and TN ₃ .
5	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the downlink PDTCH, RRBP invalid.
6	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the downlink PDTCH, the assigned USF assigned to the MS and a valid RRBP = N +26, on the same radio block as step 5.
7	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₃ of the downlink PDTCH, RRBP invalid, on the same radio block as step 5.
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH, on the next radio block from step 5.
9	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the downlink PDTCH, RRBP invalid, on five radio blocks after step 6.
10	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the downlink PDTCH, the assigned USF assigned to the MS and an invalid RRBP, on the same radio block as step 9. Note: The next uplink radio block will not be used for the uplink data. It is reserved for a control block answering the polling in step 6.
11	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₃ of the downlink PDTCH, RRBP invalid, on the same radio block as step 9.
12	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBP block on TN ₂ specified in step 6.
13			Repeat step 5 to 12, until CV=0 in step 8.
14	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ with FBI = 1 and a valid RRBP=N+26.
15	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on PACCH of the uplink PDCH. With a valid RRBP=N+13
16	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 11. The MS releases the uplink TBF.
17	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 14. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 1 (in macro):

Same as in the test for the multiclass 2 and 3.

PACKET DOWNLINK ASSIGNMENT message in step 4:

Same as in the test for the multiclass 2 and 3 except.

TIMESLOT_ALLOCATION	Timeslot 1, 2 and 3 assigned
---------------------	------------------------------

Expected Sequence for GPRS multislot class 5, 9 (2 downlink timeslots + 2 uplink timeslots)

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1 CHANNEL_CODING_COMMAND: cs1 Two uplink timeslots are assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF ₁ assigned to the MS. Sent in TN ₁ on PACCH of PDCH assigned in step 1.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF ₂ assigned to the MS. Sent in TN ₂ on the same radio block as step 2, on PACCH of PDCH assigned in step 1.
4	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN ₁ on the PDTCH assigned in step 1.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN ₂ on the same radio block as step 4, on PDTCH assigned in step 1.
6	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of PDCH assigned in step 1. Assign a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, TFI _d , no starting time, assigning the timeslots TN ₁ and TN ₂ .
7	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the downlink PDTCH, RRBP invalid, the assigned USF ₁ addressing the MS.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the downlink PDTCH, a valid RRBP = N + 26, the assigned USF ₂ addressing the MS, on the same radio block as step 7.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN ₁ on the next radio block from step 7.
10	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN ₂ on the next radio block from step 7.
11	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the downlink PDTCH on five radio blocks after step 7, an invalid RRBP, the assigned USF ₁ addressing the MS.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the downlink PDTCH on same radio block as step 11, an invalid RRBP, the assigned USF ₂ addressing the MS.
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN ₁ on the PDTCH assigned in step 1.
14	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBP block on TN ₂ specified in step 8.
15			Repeat step 7 to 14, until CV=0 in step 9, 10 or 13.
16	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ with FBI = 1 and a valid RRBP=N+26.
17	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on PACCH of the uplink PDCH. With a valid RRBP=N+13
18	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 11. The MS releases the uplink TBF.
19	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 16. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 1 (in macro):

Same as in the test for the multiclass 2 and 3 except.

-	1 (Timeslot Allocation with Power Control Parameters for two slots assigned)
- ALPHA	0.5
-	01 (timeslot 1 assigned)
- USF_TN1	Arbitrarily chosen
- GAMMA_TN1	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm
	For DCS 1 800 and PCS 1 900, +6 dBm
- {0 1<USF_TN2><GAMMA_TN2>}	1 (timeslot 2 assigned)
- USF_TN2	Arbitrarily chosen but different from USF_TN ₁
- GAMMA_TN2	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm
	For DCS 1 800 and PCS 1 900, +6 dBm
-	00000

PACKET DOWNLINK ASSIGNMENT message in step 10:

Same as in the test for the multiclass 2 and 3.

Expected Sequence for GPRS multislot class 8, 10 (4 downlink timeslots + 1 uplink timeslot)

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1 CHANNEL_CODING_COMMAND: cs1 1 uplink timeslot is assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent in TN ₃ on PACCH of PDCH assigned in step 1.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN ₃ on the PDTCH.
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of PDCH assigned in step 1. Assign a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, four slots TN ₁ – TN ₄ , TFI _d , no starting time.
5	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the PDTCH assigned in step 4, with an invalid RRBP
6	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the PDTCH assigned in step 4, an invalid RRBP on the same radio block as step 5.
7	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₃ of the PDTCH assigned in step 4, the assigned USF assigned to the MS, a valid RRBP = N + 26, on the same radio block as step 5.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₄ of the PDTCH assigned in step 4, an invalid RRBP, on the same radio block as step 5.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN ₃ on the PDTCH assigned in step 1, on the next radio block from step 5.
10	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the PDTCH assigned in step 4, with an invalid RRBP, on five radio blocks after step 5.
11	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the PDTCH assigned in step 4, an invalid RRBP, on the same radio block as step 10.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₃ of the PDTCH assigned in step 4, the assigned USF assigned to the MS, on the same radio block as step 10. Note: The next uplink radio block will not be used for the uplink data. It is reserved for a control block answering the polling in step 7.
13	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₄ of the PDTCH assigned in step 4, an invalid RRBP, on the same radio block as step 10.
14	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBP block of TN ₃ specified in step 7, on the next radio block from step 10.
15			Repeat step 5 to 14, until CV=0 in step 9.
16	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₃ with FBI = 1 and a valid RRBP=N+26.
17	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on PACCH of the uplink PDCH. With a valid RRBP=N+13
18	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 11. The MS releases the uplink TBF.
19	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 16. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 1:

Same as in the test for the multiclass 2 and 3 except that instead of timeslot 2, the timeslot 3 is assigned.

PACKET DOWNLINK ASSIGNMENT message in step 4:

Same as in the test for the multiclass 2 and 3 except 4 timeslots assigned.

TIMESLOT_ALLOCATION	TN ₁ – TN ₄ assigned
---------------------	--

Expected Sequence for GPRS multislot class 19, 24 (5 downlink + 2 uplink timeslots)

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 160 octets, without starting time, without frequency hopping, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs 1 CHANNEL_CODING_COMMAND: cs 1 1 uplink timeslot is assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The assigned USF assigned to the MS, sent in TN ₃ on PACCH of PDCH assigned in step 1.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN ₃ on the PDTCH assigned in step 1.
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of PDCH assigned in step 1. Assign a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, TN ₁ – TN ₅ assigned, TFI _d , no starting time.
5	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the PDTCH assigned in step 4, with an invalid RRBp.
6	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the PDTCH assigned in step 4, with an invalid RRBp, on the same radio block as step 5.
7	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₃ of the PDTCH assigned in step 4, the assigned USF assigned to the MS, a valid RRBp = N + 26, on the same radio block as step 5.
8	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₄ of the PDTCH assigned in step 4, with an invalid RRBp, on the same radio block as step 5.
9	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₅ of the PDTCH assigned in step 4, with an invalid RRBp, on the same radio block as step 5.
10	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN ₃ on the PDTCH assigned in step 5, on the next radio block from step 5.
11	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₁ of the PDTCH assigned in step 4, with an invalid RRBp on five radio blocks after step 5.
12	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₂ of the PDTCH assigned in step 4, with an invalid RRBp on the same radio block as step 11.
13	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₃ of the PDTCH assigned in step 4, the assigned USF assigned to the MS, with an invalid RRBp on the same radio block as step 11. Note: The next uplink radio block will not be used for the uplink data. It is reserved for a control block answering the polling in step 7.
14	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₄ of the PDTCH assigned in step 4, with an invalid RRBp on the same radio block as step 11.
15	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₅ of the PDTCH assigned in step 4, with an invalid RRBp on the same radio block as step 11.
16	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBp block of TN ₃ specified in step 7.
17			Repeat step 5 to 16, until CV=0 in step 10.
18	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN ₃ with FBI = 1 and a valid RRBp=N+26.
19	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on PACCH of the uplink PDCH. With a valid RRBp=N+13
20	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 11. The MS releases the uplink TBF.
21	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBp in step 16. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 1:

Same as in the test for the multiclass 2 and 3 except.

{0 1<Frequency Parameters> - TSC - - ARFCN	1 (frequency parameters presents) 6 00, non hopping For GSM 900: 30 For DCS 1800 and PCS 1 900: 650 For GSM700, T-GSM810: 467 For GSM 850: 157
Dynamic allocation - {0 1<USF_TN0>} ... {0 1<USF_TN3>} - USF_TN3 -	01 0001 arbitrarily chosen 0000, none of the other timeslots assigned.

PACKET DOWNLINK ASSIGNMENT message in step 4:

Same as in the test for the multiclass 2 and 3 except 5 timeslots assigned.

TIMESLOT_ALLOCATION	TN ₁ – TN ₅ assigned
---------------------	--

42.3.2.2 Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Abnormal

42.3.2.2.1 Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Abnormal / with random access

42.3.2.2.1.1 Conformance requirements

1. If a failure occurs on the mobile station side before the new TBF has been successfully established, the newly reserved resources are released.
2. If the information in the PACKET TIMESLOT RECONFIGURE does not properly specify an uplink and downlink PDCH or violates the mobile station's multislot capabilities, the mobile station shall perform an abnormal release with random access.
3. If uplink and downlink TBFs are not already established and the PACKET TIMESLOT RECONFIGURE message does not include a DOWNLINK_TFI_ASSIGNMENT field, then the mobile station shall perform an abnormal release with random access.
4. If a failure in the PACKET TIMESLOT RECONFIGURE is due to any other reason, the mobile station shall abort the procedure and perform an abnormal release with random access.
5. If the mobile station receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message specifying frequencies that are not all in one frequency band then the mobile station shall perform an abnormal release with random access.
6. To perform an abnormal release with random access, the mobile station shall abort all TBFs in progress and its associated resources, return to the CCCH or PCCCH and initiate establishment of a new uplink TBF.

References

3GPP TS 04.60, subclauses 8.1.1.1.3.1, 8.1.1.1.2.1 and 8.7.2.

42.3.2.2.1.2 Test purposes

To verify that the MS, in downlink TBF establishment during uplink transfer, performs an abnormal release with random access, when the information in the PACKET TIMESLOT RECONFIGURE:

1. does not properly specify an uplink and downlink PDCH;
2. violates the mobile station's GPRS multislot capabilities;
3. does not include a DOWNLINK_TFI_ASSIGNMENT field;
4. has a failure due to any other reason other than the reasons listed above.

42.3.2.2.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 activated.

Specific PICS Statements

- TSPC_Type_GPRS_Multislot_ClassX (where X = 1..45)

PIXIT Statements

-

Test Procedure

An uplink TBF is established and in progress. The SS sends PACKET TIMESLOT RECONFIGURE for establishment a downlink TBF. A failure occurs at the mobile station side before the new downlink TBF has been successfully established. The MS starts a random access for uplink establishment. The SS assigns a new uplink PDCH to the MS. The SS signals the USF of the preceding uplink TBF addressing the MS on the preceding PDCH which shall have been released by the MS. It is checked that no RLC data block is received on the next three radio blocks. The SS signals the assigned USF assigned to the MS on the uplink PDCH assigned. The MS sends a RLC data block.

The test procedure is repeated 4 times. The message contents of PACKET TIMESLOT RECONFIGURE are varied as defined below.

1st execution, improper PDCH: hopping frequencies not all in one band.

2nd execution, violating the GPRS multislot capabilities.

3rd execution, no DOWNLINK_TFI_ASSIGNMENT.

4th execution, CONTROL_ACK = '1' (shall be set to '0' as the SS has not yet sent the final downlink RLC data block).

Maximum Duration of Test

10 minutes.

Expected Sequence

The sequence is repeated 4 times. The 2nd execution is not applicable for the MS GPRS multislot class 18 and 29.

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end CHANNEL_CODING_COMMAND: arbitrarily chosen.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The assigned USF assigned to the MS
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
4	SS -> MS	PACKET TIMESLOT RECONFIGURE	See specific message contents.
5	MS -> SS	CHANNEL REQUEST	Received on RACH.
6	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment, to force the MS making the two-phase access procedure. Sent on AGCH.
7	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 6.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block, the assigned slot and USF different from TN ₂ (as in the default)
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS in step 1, sent on TN ₂ , on PACCH in step 1.
10	SS		Check that no RLC data block is received on the next three radio blocks from step 9.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS sent on the PACCH assigned in step 8.
12	MS -> SS	UPLINK RLC DATA BLOCK	Received on the correct radio block of the assigned PDTCH.
13		{Completion of uplink RLC data block transfer}	

Specific Message Contents

PACKET TIMESLOT RECONFIGURE message in step 4 (1st execution)

PAGE_MODE	Normal
GLOBAL_TFI	0, the TFI value of the uplink TBF assigned 0
CHANNEL_CODING_COMMAND	arbitrarily chosen from valid values
DOWNLINK_RLC_MODE	unacknowledged mode
CONTROL_ACK	0
{0 1<DOWNLINK_TFI_ASSIGNMENT> - DOWNLINK_TFI_ASSIGNMENT	1 (assign TFI to the downlink TBF) arbitrarily chosen but different from the value for the uplink TBF
{0 1<UPLINK_TFI_ASSIGNMENT>	0
DOWNLINK_TIMESLOT_ALLOCATION	The same timeslot as the uplink
{0 1<Frequency Parameters>	1 (frequency parameters)
- TSC	Any valid value
-	11 (Direct encoding 2)
- MAIO	arbitrarily chosen from (0, 1, 2,...,9)
- HSN	arbitrarily chosen
- Length of MA Frequency List contents	10
- MA Frequency List contents	containing ARFCNs 10, 20, 40, 80, 90, 137, 447, 520, 590, 600, 700, 780 by range 1024 format
Dynamic allocation	0
- Extended Dynamic Allocation {0 1<P0>}	0 (Dynamic allocation) 0
- USF GRANULARITY	0 (1 RLC block)
- {0 1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0 1<TBF_STARTING_TIME>}	0 (no starting time)
-	0 (Timeslot Allocation)
- {0 1<USF_TN _x >	001 (timeslot 2 assigned)
- USF_TN ₂	Arbitrarily chosen but different from the current value 00000

PACKET TIMESLOT RECONFIGURE message in step 4 (2nd execution)

PAGE_MODE	Normal
GLOBAL_TFI	0, the TFI value of the uplink TBF assigned 0
CHANNEL_CODING_COMMAND	arbitrarily chosen from valid values
DOWNLINK_RLC_MODE	unacknowledged mode
CONTROL_ACK	0
{0 1<DOWNLINK_TFI_ASSIGNMENT> - DOWNLINK_TFI_ASSIGNMENT	1 (assign TFI to the downlink TBF) arbitrarily chosen but different from the value for the uplink TBF
{0 1<UPLINK_TFI_ASSIGNMENT>	0
DOWNLINK_TIMESLOT_ALLOCATION	Timeslots 0-7 assigned
{0 1<Frequency Parameters>	0
Dynamic allocation	0
- Extended Dynamic Allocation {0 1<P0>}	0 (Dynamic allocation) 0
- USF GRANULARITY	0 (1 RLC block)
- {0 1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0 1<TBF_STARTING_TIME>}	0 (no starting time)
-	0 (Timeslot Allocation)
- {0 1<USF_TN ₀ >}	1, a valid value
- {0 1<USF_TN ₁ >}	1, a valid value
- {0 1<USF_TN ₂ >}	1, a valid value
- {0 1<USF_TN ₃ >}	1, a valid value
- {0 1<USF_TN ₄ >}	1, a valid value
- {0 1<USF_TN ₅ >}	1, a valid value
- {0 1<USF_TN ₆ >}	1, a valid value
- {0 1<USF_TN ₇ >}	1, a valid value

PACKET TIMESLOT RECONFIGURE message in step 4 (3rd execution)

PAGE_MODE	Normal
GLOBAL_TFI	0, the TFI value of the uplink TBF assigned 0
CHANNEL_CODING_COMMAND	arbitrarily chosen from valid values
DOWNLINK_RLC_MODE	unacknowledged mode
CONTROL_ACK	0
{0 1<DOWNLINK_TFI_ASSIGNMENT>	0, no DOWNLINK_TFI_ASSIGNMENT
{0 1<UPLINK_TFI_ASSIGNMENT>	0
DOWNLINK_TIMESLOT_ALLOCATION	The same timeslot as the uplink
{0 1<Frequency Parameters>	0
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
{0 1<P0>	0
- USF GRANULARITY	0 (1 RLC block)
- {0 1<RLC_DATA_BLOCKS_GRANTED>	0 (open-ended TBF)
- {0 1<TBF_STARTING_TIME>	0 (no starting time)
-	0 (Timeslot Allocation)
- {0 1<USF_TN>	001 (timeslot 2 assigned)
- USF_TN ₂	Arbitrarily chosen but different from the current value 00000

PACKET TIMESLOT RECONFIGURE message in step 4 (4th execution):

Same as in 3rd execution except.

CONTROL_ACK	1
-------------	---

42.3.2.2.2 Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Abnormal / Continuation of normal operation

42.3.2.2.2.1 Conformance requirements

1. If a failure occurs on the mobile station side before the new TBF has been successfully established, the newly reserved resources are released.
2. If a failure in the PACKET DOWNLINK ASSIGNMENT is due to any reason, the mobile station shall abort the procedure and continue the normal operation of the uplink TBF.

References

3GPP TS 04.60, subclauses 8.1.1.1.3.1 and 8.7.

42.3.2.2.2.2 Test purposes

To verify that the MS aborts the downlink TBF establishment and continues the normal operation of the uplink TBF when the PACKET DOWNLINK ASSIGNMENT fails due to any reason in downlink TBF establishment during uplink transfer.

42.3.2.2.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 activated.

Specific PICS Statements

-

PIXIT Statements

-

Test Procedure

An uplink TBF is established and in progress. The SS sends PACKET DOWNLINK ASSIGNMENT assigning a downlink TBF while a fault occurs in the downlink assignment message.

The SS sends a downlink RLC data block on the downlink PDCH assigned and polls the MS for acknowledgment. It is checked that no PACKET DOWNLINK ACK/NACK is received. The SS signals the assigned USF assigned to the MS on the uplink PDCH assigned. The MS sends a RLC data block.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end CHANNEL_CODING_COMMAND: arbitrarily chosen.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The assigned USF assigned to the MS
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	See specific message contents
5	SS -> MS	DOWNLINK RLC DATA BLOCK	Containing RRBP= N+13, Sent on the downlink PDTCH assigned in step 4. TFI is set to the uplink one;
6	SS		Check that no PACKET DOWNLINK ACK/NACK received on the block of frame number = N+13, N is the frame number of the first burst of the data block in step 5.
7	SS -> MS	PACKET UPLINK ACK/NACK	The USF assigned to the MS. Sent on PACCH of the uplink PDCH assigned.
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
9		{Completion of uplink RLC data block transfer}	

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 4:

Referenced Address	
-	0 (address is Global TFI)
- TFI	same as the value for uplink TBF
{0 1<DOWNLINK_TFI_ASSIGNMENT>}	L (no downlink TFI assignment)

42.3.3 Dynamic Allocation / Resource reallocation

42.3.3.1 Dynamic Allocation / Resource reallocation / Successful

During an uplink packet transfer, upper layer may request to transfer another LLC PDU with a different Radio Priority, a different peak throughput class or a different RLC mode than the current one, the MS may require the allocation of new uplink resources.

42.3.3.1.1 Dynamic Allocation / Resource reallocation / Successful / Higher throughput class or higher radio priority

42.3.3.1.1.1 Conformance requirements

1. During an uplink packet transfer, upper layer may request to transfer another LLC PDU. If the mobile station has not started the countdown procedure and the new LLC PDU has the same RLC mode as the current uplink TBF and either a higher radio priority or the same radio priority but a higher peak throughput class, the mobile station shall immediately request a resource reallocation for uplink according to the new Radio Priority and peak throughput class of the new LLC PDU by sending a PACKET RESOURCE REQUEST message on the PACCH and starting timer T3168.
2. Then the mobile station shall complete the transmission of the current LLC PDU.
3. After the transmission of the PACKET RESOURCE REQUEST message with the reason for changing the priority or peak throughput class of an assigned uplink TBF the mobile station shall continue to use the currently assigned uplink TBF assuming that the requested priority or peak throughput class is already assigned to that TBF.

References

3GPP TS 04.60 subclause 8.1.1.1.2.

42.3.3.1.1.2 Test purposes

It is verified that:

1. Having an uplink TBF in progress without starting the countdown procedure, the MS will immediately send PACKET RESOURCE REQUEST if upper layer requests to transfer another LLC PDU which has the same RLC mode as the current uplink TBF and either a higher radio priority or the same radio priority but a higher peak throughput class.
2. After the request of the resource reallocation for uplink the MS completes the transmission of the current LLC PDU independent of whether or not a new resource is allocated.
3. After the transmission of the PACKET RESOURCE REQUEST the MS continues to use the currently assigned uplink TBF.

42.3.3.1.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, T3168 timeout value=7 (4s), BS_CV_MAX = 1, N201-U=500 for SAPI 3, 5, 9, 11, N201-U=270 for SAPI 7.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated:

- Test PDP context3 and context6 activated;

Specific PICS Statements

-

PIXIT Statements

-

Test Procedure

An uplink TBF is established and in progress. The MS is triggered to transfer data with a higher throughput in the same RLC mode and the same radio priority.

The MS sends PACKET RESOURCE REQUEST. The current TBF is maintained and SS assigns the USFs allowing the MS transmit more data blocks. It is verified that the MS completes the transmission of the current LLC PDU and

then starts transmitting a new LLC PDU with the higher throughput. A new PDCH is assigned to MS to complete the RLC data block transferring.

The test procedure is executed twice. In the 2nd execution, after the MS requests a resource reallocation for transferring the data block with a higher throughput a new PDCH is assigned. It is verified that the MS switches on the new PDCH, completes the transmission of the current LLC PDU and then starts transmitting a new LLC PDU with the higher throughput.

Maximum Duration of Test

5 minutes.

Expected Sequence

The test sequence is executed twice for $k = 1$ and 2.

When $k=1$ testing that the MS continues to use the currently assigned uplink TBF, while $k=2$ testing that the MS to use newly assigned the resource to complete transmission of the current PDU before starting transmission the PDU with a higher radio priority or a higher throughput.

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets in test PDP context3, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 5 (16k octets/s), RADIO_PRIORITY = 4, RLC_MODE = unacknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
4	MS		Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct. To trigger the MS to transfer 440 octets with the peak throughput class 6 (32k octets/s) in the same RLC mode and the same radio priority as the current uplink TBF (test PDP context6).
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
6	MS -> SS	PACKET RESOURCE REQUEST OR UPLINK RLC DATA BLOCK	PACKET RESOURCE REQUEST received on the PACCH of the assigned PDCH, radio priority level = 4, peak throughput class = 6, unacknowledged mode.
6-1			OR UPLINK RLC DATA BLOCK received on the assigned PDTCH. Check that the coding and the TFI are correct. Repeat Steps 5,6 until PACKET RESOURCE REQUEST is received at Step 6.
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
8	MS -> SS	UPLINK RLC DATA BLOCK OR PACKET RESOURCE REQUEST	UPLINK RLC DATA BLOCK received on the assigned PDTCH. Check that the coding and the TFI are correct. OR Retransmitted PACKET RESOURCE REQUEST received on the PACCH.
9	SS		For k=1 Repeat step 7 and 8 until the 2 nd LLC PDU in PDP context6 is started. Observe the Length indicator, M bit and E bit of the received data headers.
10	SS -> MS	PACKET UPLINK ACK/NACK	For k=2 Continue to step 10. . Sent on the PACCH of the PDCH assigned, acknowledge all received data, without setting FINAL_ACK_INDICATION.
11	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH of the PDCH assigned in step 1, assigning a new PDCH.
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 11, the USF assigned to the MS.
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 11.
14		{Completion of uplink RLC data block transfer}	For k=1, as defined in the macro. For k=2, Observe the Length indicator, M bit and E bit of the received data headers. Check that the MS completes firstly the transmission of the 1 st LLC PDU in PDP context3 and then transmits the 2 nd LLC PDU in PDP context6.

Specific Message Contents

PACKET RESOURCE REQUEST message in step 6:

Channel Request Description	
- PEAK_THROUGHPUT_CLASS	6
- RADIO_PRIORITY	4
- RLC_MODE	Unacknowledged mode
- LLC_PDU_TYPE	1 (not SACK or ACK)
- RLC_OCTET_COUNT	Any value

PACKET UPLINK ASSIGNMENT message in step 11:

PAGE_MODE	Normal
{0 1}<PERSISTENCE_LEVEL>	0
- Uplink TFI	0, Global TFI Same as the current value
CHANNEL_CODING_COMMAND	0
TLLI_BLOCK_CHANNEL_CODING	CS-1
<Packet Timing Advance>	CS-1
{0 1}<Frequency Parameters>	As default
Dynamic allocation	0
-	01
-	000000
-	0 (Timeslot Allocation)
-	00000001 (timeslot 7 assigned)
- USF_TN7	Arbitrarily chosen

42.3.3.1.2 Dynamic Allocation / Resource reallocation / Successful / Lower throughput class

42.3.3.1.2.1 Conformance requirements

1. During an uplink packet transfer, upper layer may request to transfer another LLC PDU. If the new LLC PDU has the same RLC mode as the current uplink TBF and either a lower Radio Priority or the same radio priority but a lower peak throughput class, the mobile station shall first complete the sending of the LLC PDU in transfer.
2. When the sending of LLC PDUs at the higher Radio Priority or the same radio priority but higher peak throughput class stops, without waiting for the acknowledgement from the network if in RLC acknowledged mode, the mobile station shall then perform the request of a resource reallocation for uplink for any remaining LLC PDU(s) by sending a PACKET RESOURCE REQUEST message on the PACCH and start timer T3168.

References

3GPP TS 04.60, subclause 8.1.1.2.

42.3.3.1.2.2 Test purposes

To verify that during an uplink packet transfer, upper layer requests to transfer another LLC PDU and the new LLC PDU has the same RLC mode as the current uplink TBF and either a lower Radio Priority or the same radio priority but a lower peak throughput class.

1. The MS first complete the sending of the LLC PDU in transfer, including acknowledgement from the network if in RLC acknowledged mode.
2. After the sending of LLC PDUs at the higher Radio Priority or the same radio priority but higher peak throughput class stops, the MS performs the request of a resource reallocation for uplink for any remaining LLC PDU(s).

42.3.3.1.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, T3168 timeout value=7 (4s), BS_CV_MAX = 1, N201-U=500 for SAPI 3, 5, 9, 11, N201-U=270 for SAPI 7.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated:

- Test PDP context2 and context4 activated;

Specific PICS Statements

-

PIXIT Statements

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Test Procedure

An uplink TBF is established and in progress. The MS is triggered to transfer data with a lower throughput or a lower radio priority in the same RLC mode.

The current TBF is maintained and SS assigns the USFs allowing the MS to transmit more data blocks. It is verified that the MS completes the transmission of the current LLC PDU and then sends PACKET RESOURCE REQUEST.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	In PDP context4, n = 880 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 6, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
4	MS		Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct. To trigger the MS to transfer 220 octets with the test PDP context2 in the same RLC mode as the current uplink TBF.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
6-1	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
6-2	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the assigned PDCH, acknowledged mode.
7	SS		Repeat step 5 and 6-1 until PACKET RESOURCE REQUEST in 6-2, instead of a RLC data block in 6-1, is received. Observe the Length indicator, Mbit and E bit of the received data headers. Check that the transmission of the LLC PDU(s) with higher peak throughput class is completed.
8	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned, acknowledge all received data
9	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH of the PDCH assigned in step 1, assigning a new PDCH.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 10, the USF assigned to the MS.
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 10.
12		{Completion of uplink RLC data block transfer}	
13	MS		Switch off

Specific Message Contents

PACKET RESOURCE REQUEST message in step 6-2:

Channel Request Description	
- PEAK_THROUGHPUT_CLASS	For branch A: 5 For branch B: any allowed value
- RADIO_PRIORITY	For branch A: 4 For branch B: 1
- RLC_MODE	acknowledged mode
- LLC_PDU_TYPE	1 (not SACK or ACK)
- RLC_OCTET_COUNT	Any allowed value

PACKET UPLINK ASSIGNMENT message in step 9:

Same as in subclause 42.3.3.1.1.3, step 11.

42.3.3.1.3 Dynamic Allocation / Resource reallocation / Successful / Different RLC mode and higher radio priority

42.3.3.1.3.1 Conformance requirements

During an uplink packet transfer, upper layer may request to transfer another LLC PDU. If the new LLC PDU does not have the same RLC mode as the current uplink TBF but has a higher radio priority, the mobile station shall complete the transmission of the current LLC PDU using the countdown procedure including acknowledgement from the network, if in RLC acknowledged mode. The mobile station shall then release the TBF and establish a new uplink TBF for transmission of the new LLC PDU. When the sending of LLC PDUs with a higher radio priority is completed using the countdown procedure, including acknowledgement from the network if in RLC acknowledged mode, the mobile station shall try to establish an uplink TBF for the transmission of any remaining LLC PDU(s).

References

3GPP TS 04.60, subclause 8.1.1.1.2.

42.3.3.1.3.2 Test purposes

To verify that during an uplink packet transfer, upper layer requests to transfer another LLC PDU and the new LLC PDU has a different RLC mode from the current uplink TBF but has a higher radio priority.

1. The mobile station completes the transmission of the current LLC PDU using the countdown procedure including acknowledgement from the network, if in RLC acknowledged mode.
2. Then the MS releases the TBF and establishes a new uplink TBF for transmission of the new LLC PDU.
3. When the sending of the new LLC PDUs with a higher radio priority is completed using the countdown procedure, including acknowledgement from the network if in RLC acknowledged mode, the mobile station tries to establish an uplink TBF for the transmission of any remaining LLC PDU(s).

42.3.3.1.3.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, T3168 timeout value=7 (4s), N201-U=500 for SAPI 3, 5, 9, 11, N201-U=270 for SAPI 7.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated:

- Test PDP context1 and context2 activated;

Specific PICS Statements

-

PIXIT Statements

-

Test Procedure

An uplink TBF is established and in progress. The MS is triggered to transfer 220 octets user data with a higher throughput or a higher radio priority, but in a different RLC mode.

SS assigns the USFs allowing the MS transmit more data blocks until the MS complete the countdown procedure. It is verified that the MS has transmitted only one LLC PDU.

Random accesses are received from the MS for channel request. SS assigns a PDCH to it. SS assigns USFs addressing to the MS allowing more data blocks are transmitted by the MS until the countdown value CV=0.

The MS requests more resources through random accesses of channel requests for the remaining LLC PDU in the initial test PDP context. SS starts a two-phase dynamic allocation. It is checked that the values of

PEAK_THROUGHPUT_CLASS, RADIO_PRIORITY and RLC_MODE requested by the MS in the PACKET RESOURCE REQUEST are in consistence with the initial test PDP context2.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1	MS	{Uplink dynamic allocation two phase access}	In PDP context2, n = 880 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
4	MS		Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct. To trigger the MS to transfer 220 octets in test PDP context1, unacknowledged RLC mode and a higher radio priority.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
7	SS		Repeat step 5 and 6 until countdown value CV=0. Observe the Length indicator, Mbit and E bit of the received data headers.
8	SS -> MS	PACKET UPLINK ACK/NACK	Check that transmitted is only the 1 st LLC PDU, Note: the 1 st LLC PDU is in PDP context2, the 2 nd LLC PDU is waiting for transferring.
9	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	FINAL_ACK_INDICATION = '1'. Acknowledge all received data, containing valid RRBp, sent on PACCH. Received on the block specified by RRBp on PACCH of the assigned PDCH.
10	MS -> SS	CHANNEL REQUEST	Received on RACH for TBF establishment for transferring of the LLC PDU in PDP context1.
11	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment, to force the MS making two-phase access procedure. Sent on AGCH.
12	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 11. Check that radio priority level = 1, peak throughput class = 5, unacknowledged RLC mode.
13	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block. Sent on PACCH of the same PDCH assigned in step 11.
14	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 13.
15	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned.
16			Repeat step 14 and 15 until countdown value CV=0. Check the amount of data is consistent with what was indicated by the MS in step 4.
17	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = '1', a valid RRBp, acknowledge all received data, sent on PACCH.
18	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBp on PACCH of the assigned PDCH.
19	MS -> SS	CHANNEL REQUEST	Received on RACH, TBF establishment for transmission of a remaining LLC PDU in PDP context2.
20	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment, to force the MS making two-phase access procedure. Sent on AGCH.
21	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 20. Check that PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
22	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block. Sent on PACCH of the same PDCH assigned in step 20.
23	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 20.
24	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 20.

Step	Direction	Message	Comments
25	SS		Repeat step 23 and 24 until countdown value CV=0. Observe the Length indicator, M bit and E bit of the received data headers.
26	SS -> MS	PACKET UPLINK ACK/NACK	Check that only one LLC PDU is transmitted. Note: the 2nd ^t LLC PDU in PDP context2. FINAL_ACK_INDICATION = '1'. Acknowledge all received data, containing valid RRBP, sent on PACCH.
27	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 13:

Same as in subclause 42.3.3.1.1.3, step 11.

42.3.3.2 Dynamic Allocation / Resource reallocation / Abnormal

42.3.3.2.1 Dynamic Allocation / Resource reallocation / Abnormal / T3168 expiry

42.3.3.2.1.1 Conformance requirements

On expiry of timer T3168 the mobile station shall retransmit the PACKET RESOURCE REQUEST message unless the PACKET RESOURCE REQUEST has already been transmitted four times in which case the mobile station shall return to packet idle mode and indicate a packet access failure to upper layer.

References

3GPP TS 04.60, subclause 8.1.1.1.2.

42.3.3.2.1.2 Test purposes

To verify that during uplink resource reallocation on expiry of timer T3168:

1. The MS retransmits the PACKET RESOURCE REQUEST message unless the PACKET RESOURCE REQUEST has already been transmitted four times;
2. The MS returns to idle mode after PACKET RESOURCE REQUEST has been transmitted four times.

42.3.3.2.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, CONTROL_ACK_TYPE = 0, T3168 timeout value=0 (0.5s), BS_CV_MAX = 1, N201-U=500 for SAPI 3, 5, 9, 11, N201-U=270 for SAPI 7, Max Retrans = 11 (Max 7 retransmissions).

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated:

- Test PDP context2 and context5 activated;

-

Specific PICS Statements

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PIXIT Statements

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Test Procedure

An uplink TBF is established and in progress. The MS is triggered to transfer data with a higher radio priority in the same RLC mode.

The MS sends PACKET RESOURCE REQUEST. The current TBF is maintained and SS assigns the USFs allowing the MS transmit more data blocks, but does not answers to the requested resources. The MS repeatedly sends PACKET RESOURCE REQUEST three times after T3168 expires each time.

SS waits 0,55 s after receiving the 4th PACKET RESOURCE REQUEST and then sends PAGING REQUEST TYPE 1 in the next paging block for the. The MS answers with CHANNEL REQUEST.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1	MS	{Uplink dynamic allocation two phase access}	In PDP context2, n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs 1, CHANNEL_CODING_COMMAND: cs 1, PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
4	MS		Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct. To trigger the MS to transfer 440 octets with the peak throughput class 5 (16k octets/s) and the radio priority 1 in acknowledge RLC mode of the PDP context5.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
6	MS -> SS	UPLINK RLC DATA BLOCK or PACKET RESOURCE REQUEST	Received on the PDCH assigned
7			Repeat steps 5 and 6 until reception of PACKET RESOURCE REQUEST (ensure that countdown procedure did not start before that MS requests additional resources)
8			Repeat steps 5 – 7 twice, Note: the 1 st LLC PDU may be sent out and the sending 2 nd PDU in the PDP context5 is started Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct for all received UPLINK RLC DATA BLOCK.
9	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned, acknowledge all received data. USF assigned to MS
10	MS -> SS	UPLINK RLC DATA BLOCK or PACKET RESOURCE REQUEST	Received on the PDCH assigned, the 4 th time to send PACKET RESOURCE REQUEST.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
12			Repeat steps 10 and 11 until reception of PACKET RESOURCE REQUEST (ensure that countdown procedure did not start before that MS requests additional resources)
13	SS -> MS	PAGING REQUEST TYPE 1	Sent in the next paging block for the MS and at least 0,55s after receiving Packet Resource Request in step 10. Channel requests to initiate TBF to proceed the data transfer shall be ignored by the SS.
14	MS -> SS	CHANNEL REQUEST	Establishment cause = "Answer to paging"

Specific Message Contents

PACKET RESOURCE REQUEST message in step 6 and 10:

Channel Request Description	
- PEAK_THROUGHPUT_CLASS	5
- RADIO_PRIORITY	1
- RLC_MODE	acknowledged mode
- LLC_PDU_TYPE	1 (not SACK or ACK)
- RLC_OCTET_COUNT	Any allowed value

42.3.3.2.2 Dynamic Allocation / Resource reallocation / Abnormal / Invalid assignment

42.3.3.2.2.1 Conformance requirements

1. If the mobile station receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message and detects an invalid Frequency Parameters information element in the message, the mobile station shall perform an abnormal release with system information (see sub-clause 8.7.3), performing a partial acquisition of system information messages containing frequency information.
2. If the mobile station receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message specifying frequencies that are not all in one frequency band then the mobile station shall perform an abnormal release with random access.
3. If the mobile station receives a PACKET UPLINK ASSIGNMENT message containing a Frequency Parameters information element specifying a frequency that is in a frequency band not supported by the mobile station then the mobile station shall perform an abnormal release with random access.

References

3GPP TS 04.60, subclause 8.1.1.1.2.1.

42.3.3.2.2.2 Test purposes

To verify that during uplink resource reallocation:

1. The MS performs an abnormal release with random access if it receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message specifying frequencies that are not all in one frequency band.
2. The MS performs an abnormal release with random access if it receives a PACKET UPLINK ASSIGNMENT message containing a Frequency Parameters information element specifying a frequency in the frequency band not supported.
3. The MS performs an abnormal release with system information if it receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message containing an Invalid Frequency Parameters information element.

42.3.3.2.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,, BS_CV_MAX = 1, N201-U=500 for SAPI 3, 5, 9, 11, N201-U=270 for SAPI 7.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated:

- Test PDP context2 and context5 activated;

Specific PICS Statements

- Support of Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)
- Support of DCS 1800 band (TSPC_Type_DCS_Band)

- Support of GSM 700 band (TSPC_Type_GSM_700_Band)
- Support of GSM 850 band (TSPC_Type_GSM_850_Band)
- Support of T GSM 810 band (TSPC_Type_T_GSM_810_Band)

PIXIT Statements

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Test Procedure

An uplink TBF is established and in progress. The MS is triggered to transfer data with a higher radio priority in the same RLC mode. The MS sends PACKET RESOURCE REQUEST. SS sends PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE containing an invalid assignment ($k=1 \dots 5$, see step 6 in expected sequences).

It is checked that the MS starts random accesses.

Maximum Duration of Test

10 minutes.

Expected Sequence

The test sequence is executed in total five times, $k = 1 \dots 5$. The 5th execution is applicable to the single band MS, but not to the multi-band one.

Step	Direction	Message	Comments
1	MS	{Uplink dynamic allocation two phase access}	In PDP context2, n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
4	MS		Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct. To trigger the MS to transfer 440 octets with the peak throughput class 5 (16k octets/s) and the radio priority 1 in acknowledge RLC mode of the PDP context5.
5-1	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH, the USF assigned to the MS.
5	MS -> SS	UPLINK RLC DATA BLOCK or PACKET RESOURCE REQUEST	Received on the PACCH of the PDCH assigned.
6-1			Repeat steps 5-1 and 5 until reception of PACKET RESOURCE REQUEST (ensure that countdown procedure did not start before that MS requests additional resources)
6 k=1	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign a frequency hopping PDCH, but not all frequencies are in one frequency band.
6 k=2	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign a frequency hopping PDCH, but not all frequencies are in one frequency band.
6 k=3	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign a frequency hopping PDCH, the MA_NUMBER and MA_CHANGE_MARK_1 mismatch the values of MA_NUMBER and MA_CHANGE_MARK stored in the MS.
6 k=4	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign a frequency hopping PDCH, the MA_NUMBER and MA_CHANGE_MARK_1 mismatch the values of MA_NUMBER and MA_CHANGE_MARK stored in the MS.
6 k=5	SS -> MS	PACKET UPLINK ASSIGNMENT	Assigned ARFCN on PDCH is not in the frequency band supported by the MS.
7	MS -> SS	CHANNEL REQUEST	Received on RACH.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 6 for k=1:

{0 1<Frequency Parameters>} - Frequency Parameters - TSC - - MAIO - HSN - Length of MA Frequency List contents - MA Frequency List contents Dynamic allocation	1 (Frequency Parameters present) Arbitrarily chosen 11 (Direct encoding 2) Arbitrarily chosen Arbitrarily chosen 12 octets Contain following ARFCNs in 1024 range format: 20, 40, 80, 90, 137, 447, 520, 590, 600, 700 01 As default
--	--

PACKET TIMESLOT RECONFIGURE message in step 6 for k=2:

Information Element	value/remark
PAGE_MODE - Global TFI CHANNEL_CODING_COMMAND Global Packet Timing Advance { 0 1<TIMING_ADVANCE_VALUE > - TIMING_ADVANCE_VALUE } - {0 1<UPLINK_TIMING_ADVANCE_INDEX> <UPLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>} - {0 1<DOWNLINK_TIMING_ADVANCE_INDEX> <DOWNLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>} DOWNLINK_RLC_MODE CONTROL_ACK {0 1<DOWNLINK_TFI_ASSIGNMENT>} - DOWNLINK_TFI_ASSIGNMENT {0 1<UPLINK_TFI_ASSIGNMENT > DOWNLINK_TIMESLOT_ALLOCATION {0 1<Frequency Parameters>} - Frequency Parameters - TSC - - MAIO - HSN - Length of MA Frequency List Contents - MA Frequency List contents Dynamic allocation	Normal 0, Global TFI as reference 0, uplink TFI same value as assigned in the uplink in step 1 00 (CS-1) 1 (timing advance value) 30 bit periods 0 (no uplink timing advance index) 0 (no downlink timing advance index) Acknowledged mode 0 1 (assign downlink TFI) 00001(Binary) 0 Same timeslot as the uplink TBF H (hopping channel) Arbitrarily chosen 11 (Direct encoding 2) Arbitrarily chosen Arbitrarily chosen 12 octets Contain following ARFCNs in 1024 range format: 20, 40, 80, 90, 520, 590, 600, 700 0 As default

PACKET UPLINK ASSIGNMENT message in step 6 for k=3:

<pre>{0 1<Frequency Parameters>} - Frequency Parameters - TSC - - MAIO - MA_NUMBER - {0 1<CHANGE_MARK_1>} - CHANGE_MARK_1 - {0 1<CHANGE_MARK_2>} - CHANGE_MARK_2 Dynamic allocation</pre>	<pre>1 (Frequency Parameters present) Arbitrarily chosen 01 (Indirect encoding) Arbitrarily chosen Arbitrarily select a value different from 14 and 15 1 (present) Arbitrarily select a value that mismatches S113_CHANGE_MARK 1 (CHANGE_MARK_2 present) Arbitrarily select a value that is different from CHANGE_MARK_1 and mismatches S113_CHANGE_MARK 01 As default</pre>
---	---

PACKET TIMESLOT RECONFIGURE message in step 6 for k=4:

Information Element	value/remark
<pre>PAGE_MODE - Global TFI CHANNEL_CODING_COMMAND Global Packet Timing Advance {0 1<TIMING_ADVANCE_VALUE>} - TIMING_ADVANCE_VALUE - {0 1<UPLINK_TIMING_ADVANCE_INDEX>} <UPLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>} - {0 1<DOWNLINK_TIMING_ADVANCE_INDEX>} <DOWNLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>} R>} DOWNLINK_RLC_MODE CONTROL_ACK {0 1<DOWNLINK_TFI_ASSIGNMENT>} - DOWNLINK_TFI_ASSIGNMENT {0 1<UPLINK_TFI_ASSIGNMENT>} DOWNLINK_TIMESLOT_ALLOCATION {0 1<Frequency Parameters>} - Frequency Parameters - TSC - - MAIO - MA_NUMBER - {0 1<CHANGE_MARK_1>} - CHANGE_MARK_1 - {0 1<CHANGE_MARK_2>} Dynamic allocation</pre>	<pre>Normal 0, Global TFI as reference 0, uplink TFI same value as assigned in the uplink in step 1 00 (CS-1) 1 (timing advance value) 30 bit periods 0 (no uplink timing advance index) 0 (no downlink timing advance index) Acknowledged mode 0 1 (assign downlink TFI) 00001 (Binary) 0 Same timeslot as the uplink TBF 1 (hopping channel) Arbitrarily chosen 01 (Indirect encoding) Arbitrarily chosen Arbitrarily select a value different from 14 and 15 1 (CHANGE_MARK_1 present) Arbitrarily choose a value which mismatches S113_CHANGE_MARK 0 (no CHANGE_MARK_2) 0 As default</pre>

PACKET UPLINK ASSIGNMENT message in step 6 for k=5:

<pre>{0 1<Frequency Parameters>} - Frequency Parameters - TSC - - ARFCN Dynamic allocation</pre>	<pre>1 (Frequency Parameters present) Arbitrarily chosen 00 (ARFCN no hopping) For GSM 900: 650 For DCS 1 800: 30 For GSM 700, T-GSM 810: 650 For GSM 850: 650 01 (Dynamic allocation) As default</pre>
---	--

42.3.3.3 Dynamic Allocation / Resource reallocation / Reject

42.3.3.3.1 Conformance requirements

1. On receipt of a PACKET ACCESS REJECT message, the mobile station shall stop timer T3168 if running and indicate a packet access failure to upper layers. If no downlink TBF exists, the mobile station shall return to packet idle mode.
2. If the PACKET ACCESS REJECT message contains a WAIT_INDICATION field in a Reject structure addressed to the mobile station, the mobile station shall start timer T3172 and if the mobile station has additional RLC data blocks to transmit, it shall initiate a new TBF establishment procedure on the RACH or PRACH, but the mobile station is not allowed to make a new attempt for packet access in the same cell until timer T3172 expires, it may, however, attempt packet access in an other cell after successful cell reselection. A mobile station in GPRS MS class A or B mode of operation may attempt to enter the dedicated mode in the same cell before timer T3172 has expired. During the time T3172 is running, the mobile station shall ignore all received PACKET PAGING REQUEST messages except paging request to trigger RR connection establishment.

References

3GPP TS 04.60, subclause 8.1.1.1.2.

42.3.3.3.2 Test purposes

To verify that during the uplink resource reallocation:

1. The MS returns to packet idle mode when it receives PACKET ACCESS REJECT without WAIT_INDICATION.
2. On receipt of a PACKET ACCESS REJECT with a WAIT_INDICATION the MS waits until T3172 expires. The MS, if having another RLC data blocks to transmit, initiates a new TBF establishment procedure on the RACH.

42.3.3.3.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_CV_MAX = 1, N201-U=500 for SAPI 3, 5, 9, 11, N201-U=270 for SAPI 7.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated:

- Test PDP context2 and context5 activated;

Specific PICS Statements

-

PIXIT Statements

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Test Procedure

An uplink TBF is established and in progress. The MS is triggered to transfer data with a higher radio priority in the same RLC mode.

The MS sends PACKET RESOURCE REQUEST. SS sends PACKET ACCESS REJECT without containing WAIT_INDICATION. The MS may attempt a new random access because of the user data from the upper layer.

The test procedure is repeated once. The difference between the two executions is that in the 2nd execution, PACKET ACCESS REJECT contains WAIT_INDICATION. The MS may start the random access after T3172 expires.

Maximum Duration of Test

5 minutes.

Expected Sequence

The test sequence is executed twice for k = 1 ... 2.

Step	Direction	Message	Comments
1	MS	{Uplink dynamic allocation two phase access}	In PDP context2, n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
4	MS		Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct. To trigger the MS to transfer 440 octets with the peak throughput class 5 (16k octets/s) and the radio priority 1 in acknowledge RLC mode of the PDP context5.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
5-1	MS -> SS	UPLINK RLC DATA BLOCK or PACKET RESOURCE REQUEST	Received on the PACCH of the PDCH assigned
5-2			Repeat steps 5 and 5-1 until reception of PACKET RESOURCE REQUEST (ensure that countdown procedure did not start before that MS requests additional resources)
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
8	SS -> MS	PACKET ACCESS REJECT	Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct. Sent on the PACCH of the PDCH, including the same address reference received from step 5-1 addressing the MS, For k = 1 without WAIT_INDICATION For k = 2 with WAIT_INDICATION.
9(option al step)	MS -> SS	CHANNEL REQUEST	Optionally received on RACH, depending on the MS implementation. For k=2, check that the random access is received not before 4,5s from step 8

Specific Message Contents

PACKET ACCESS REJECT message in step 8 for k=1:

MESSAGE_TYPE	1 00001
PAGE_MODE	Normal Paging
Reject	
-	0 (TLLI)
- TLLI	the same value as the TLLI received
-	0 (no WAIT_INDICATION)
-	0

PACKET ACCESS REJECT message in step 8 for k=2:

MESSAGE_TYPE	1 00001
PAGE_MODE	Normal Paging
Reject	
-	0 (TLLI)
- TLLI	The same value as the TLLI received
-	1 (WAIT_INDICATION present)
- WAIT_INDICATION	5 s
- WAIT_INDICATION_SIZE	0 (units of seconds)
-	0 (end of reject IE)

PACKET RESOURCE REQUEST message in step 5:

Information Element	value/remark
Channel Request Description	
- PEAK_THROUGHPUT_CLASS	5
- RADIO_PRIORITY	1
- RLC_MODE	Acknowledged mode
- LLC_PDU_TYPE	1 (not SACK or ACK)
- RLC_OCTET_COUNT	Any allowed value

42.3.3.4 Dynamic Allocation / Resource reallocation / Successful / Lower Coding Scheme Command

42.3.3.4.1 Void

42.3.3.4.2 Conformance requirements

1. On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall stop timer T3168 and switch to the assigned PDCHs (3GPP TS 04.60 sub-clause 8.1.1.1).
2. The transmitter shall transmit the oldest RLC data block whose corresponding element in V(B) indexed relative to V(A) has the value NACKED. As each RLC data block is transmitted the corresponding element in V(B) is set to the value PENDING_ACK, (3GPP TS 04.60 sub-clause 9.1.3.2).
3. If all RLC data blocks whose corresponding element in V(B) has the value PENDING_ACK have been transmitted once, the process shall be repeated beginning with the oldest RLC data block (3GPP TS 04.60 subclause 9.1.3.2).
4. In GPRS TBF mode, once an RLC data block has been transmitted over the physical link, should it be necessary to re-transmit the RLC data block, it shall be re-transmitted using the same channel coding scheme, BSN, and CV as it had in the previous transmission (3GPP TS 04.60 sub-clause 9.1.11)

References

3GPP TS 04.60, sub-clauses 8.1.1.1, 9.1.3.2, 9.1.11.

42.3.3.4.3 Test purposes

Verify that an MS switches to the newly assigned PDCH, retransmits unacknowledged RLC data blocks with the previous CS, transmits no more than one RLC data block with the previous CS and then applies the new CS command only to the new RLC data blocks.

42.3.3.4.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, has a PDP context 2 activated. One LLC frame of 225 octets (which fits in 3 CS-4 blocks and 3 CS-1 blocks, or 2 CS-4 blocks and 6 CS-1 blocks) are to be sent by the MS.

Specific PICS Statements

-

PIXIT Statements

-

Test Procedure

- 1) The MS receives a IMMEDIATE ASSIGNMENT message on its assigned PCH, containing a CS command set to CS4.
- 2) The SS transmits a USF assigned to the MS.
- 3) The MS responds by sending an uplink RLC data block.
- 4) the TLLI is sent in a Packet Uplink Ack/Nack in order to solve the contention.
- 5) The MS detects that the contention is solved.
- 6) The SS transmits another PACKET UPLINK ASSIGNMENT message on PACCH, containing new resources and a CS command set to CS1.
- 7) The MS transmits uplink RLC data blocks on the newly assigned resources: unacknowledged RLC data blocks or pending RLC data blocks are retransmitted using the previous CS; no more than one new RLC data block shall then be sent with the previous CS, and subsequent new RLC data blocks are transmitted using the new CS.
- 8) All blocks are acknowledged by the SS and the TBF is released.

Maximum Duration of Test

3 minutes.

Expected Sequence

Step	Direction	Message	Comments
1			MS is in the state "idle, GMM-registered" with a P-TMSI allocated, has a PDP context activated
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to switch to PDCH0. (no starting time); CS4 is commanded.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	3 blocks after the previous message, one USF addressing the MS is sent on PACCH according to allocation from step 3.
5	MS -> SS	RLC DATA BLOCK	MS sends the 1 st RLC data block including its TLLI, on PDCH0.
6	SS -> MS	Packet Uplink Ack/Nack	The SS transmits the MS TLLI in order to solve the contention and indicates that the 1 st RLC data block has been received.
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	3 blocks after the previous message, one USF addressing the MS is sent on PACCH according to allocation from step 3.
8	MS -> SS	UPLINK RLC DATA BLOCK	MS sends the 2 nd RLC data block sent on PDCH0 using CS4. If the data block contains the TLLI perform optional steps 7a and 8a, otherwise continue with step 9.
7a (optional)	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	3 blocks after the previous message, one USF addressing the MS is sent on PACCH according to allocation from step 3.
8a (optional)	MS -> SS	UPLINK RLC DATA BLOCK	MS sends the 3 rd RLC data block sent on PDCH0 using CS4, without the TLLI.
9	SS -> MS	PACKET UPLINK ACK/NACK	The SS indicates that the 2 nd RLC data block has not been received.
10	SS -> MS	PACKET UPLINK ASSIGNMENT	Triggers the MS to switch to PDCH1. (no starting time) CS1 is commanded.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	3 blocks after the previous message, a USF is addressed to MS according to allocation from step 9.
12	MS -> SS	RLC DATA BLOCK	MS sends a RLC data block on PDCH1.
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The SS continues transmitting USF according to allocation from step 9.
14	MS -> SS	RLC DATA BLOCK	Verify that no more than one new RLC data block shall then be sent with the previous CS: at the latest the 4 th RLC data block of the TBF is sent with CS1. The SS verifies that CS4 is used for the 2 nd RLC data block, and that CS1 is used at the latest for the 4 th RLC data block and the subsequent blocks. The 3 rd RLC data block may be sent using the previous CS or the new one.
15			Repeat steps 12 and 13 until all the RLC data blocks have been sent, i.e. 6 times
16	SS -> MS	Packet Uplink Ack/Nack	The SS indicates that every data blocks have been received.
17		{Completion of uplink data transfer}	Macro

Specific Message Contents

IMMEDIATE ASSIGNMENT message in step 3:

TIMESLOT_ALLOCATION	<one timeslot assigned – PDCH0>
CHANNEL_CODING_COMMAND	11 (CS-4)
TLLI_BLOCK_CHANNEL_CODING	1 (the mobile station shall use the value commanded in the CHANNEL_CODING_COMMAND or EGPRS_CHANNEL_CODING_COMMAND field)
TBF STARTING TIME	<IE not present>

PACKET UPLINK ASSIGNMENT message in step 9:

TIMESLOT_ALLOCATION	<one timeslot assigned – PDCH1>
CHANNEL_CODING_COMMAND	00 (CS-1)
TLLI_BLOCK_CHANNEL_CODING	1 (the mobile station shall use the value commanded in the CHANNEL_CODING_COMMAND or EGPRS_CHANNEL_CODING_COMMAND field)
TBF STARTING TIME	<IE not present>

42.3.4 Default message contents

Default message contents and macros as defined in the GPRS defaults section 40 are used for subclause 42.3.

42.4 Measurement reports and Cell change order procedures

This subclause presents tests for "Measurement Reports and Cell Change Order Procedures" which are specified in 3GPP TS 04.60/3GPP TS 44.060 subclauses 5.6 and 8.4.

In the testcases which have uplink data transfer while in NC2, the USF needs to be assigned very frequently so that the measurement reports will be received by the SS within the 10% tolerance.

Default conditions

Default message contents and signalling macros are defined in the GPRS general defaults section, except for those messages and macros specified at the end of this subclause.

42.4.1 Measurement reports

42.4.1.1 Network Control measurement reporting / Uplink / Normal case

42.4.1.1.1 Conformance requirement

The behaviour of the mobile station is controlled by the NETWORK_CONTROL_ORDER parameter in a PACKET MEASUREMENT ORDER message. The reporting periods are indicated in the NC_REPORTING_PERIOD_T field of the PACKET MEASUREMENT ORDER message. The mobile station shall apply to the timer T3158 the NC_REPORTING_PERIOD_T when in packet transfer mode.

The procedure for NC measurement report sending shall be initiated by the mobile station at the expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the timer T3158, perform the measurements and send the PACKET MEASUREMENT REPORT message containing the 'NC measurement report struct' on PACCH.

A mobile station in mode NC1 may receive a new indicated reporting period or change packet mode while timer T3158 is active. If the new indicated reporting period is less than the time to expiry of timer T3158, the mobile station shall immediately restart timer T3158 with the new indicated reporting period. Otherwise, the timer T3158 shall continue to run.

42.4.1.1.2 Test Purpose

To verify that the MS sends the measurement report of the NC measurements according to the indicated reporting periods, when the T3158 expires.

To verify that the MS restarts the timer T3158 when it expires.

Reference

3GPP TS 04.60, subclauses 5.6.1 and 8.3.

42.4.1.1.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in transfer mode.

Test procedure

MS is brought into uplink packet transfer mode. SS sends a PACKET MEASUREMENT ORDER message. MS sends continuously data blocks and PACKET MEASUREMENT REPORT messages according to the indicated reporting period. A PACKET MEASUREMENT ORDER message is sent again with new reporting period. MS sends data blocks and PACKET MEASUREMENT REPORT messages according to the new reporting period.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation one phase access with contention resolution } or {Uplink dynamic allocation two phase access}	Macro parameters: USF_GRANULARITY: 1 RLC_DATA_BLOCKS_GRANTED: absent (open-end) CHANNEL_CODING_COMMAND: CS-1 LLI_BLOCK_CHANNEL_CODING: CS-1
2	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T See specific message contents USF assigned to the MS
3	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
4	MS -> SS	RLC data block	MS sends data
5	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF assigned to MS
6			Repeat steps 4 and 5 until the MS sends a PACKET MEASUREMENT REPORT message in response to step 5.
7	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
8	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
9	MS -> SS	RLC data block	MS sends data.
10	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH., USF assigned to MS
11			Repeat steps 9 and 10 until the MS sends a PACKET MEASUREMENT REPORT message in response to step 10.
12	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH.
13	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	SS verifies that the time interval between steps 7 and 12 corresponds to the indicated reporting period +/- 10%. USF assigned to the MS
14	MS -> SS	RLC data block	MS sends data.
15	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
16	SS -> MS	PACKET MEASUREMENT ORDER	- Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T with new reporting period, which is greater than time to expiry of the timer T3158. See specific message contents USF assigned to the MS
17	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
18	MS -> SS	RLC data block	MS sends data.
19	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF assigned to MS
20			Repeat steps 18 and 19 until the MS sends a PACKET MEASUREMENT REPORT message in response to step 19.
21	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH.
22	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	SS verifies that the time interval between steps 12 and 21 corresponds to the old reporting period +/- 10%. USF assigned to the MS
23	MS -> SS	RLC data blocks	MS sends data.
24	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF assigned to MS
25			Repeat steps 23 and 24 until the MS sends a PACKET MEASUREMENT REPORT message in response to step 24.

26	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH. SS verifies that the time interval between steps 21 and 26 corresponds to the new reporting period +/- 10%.
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Specific message contents

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_T	01 (NC1) 001 (0,96 s)
---	--------------------------

PACKET MEASUREMENT ORDER in step 16:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_T	01 (NC1) 100 (7,68 s)
---	--------------------------

42.4.1.2 Network Control measurement reporting / Idle mode / New cell reselection

42.4.1.2.1 Conformance requirement

The procedure for measurement report sending shall be initiated by the mobile station at expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the expired timer T3158, perform the measurements and initiate the packet access.

The procedure for measurement report sending is initiated by the mobile station either on PCCCH (sub-clause 7.3.1) or, if a packet control channel not exists, on CCCH (sub-clause 7.3.2).

If the mobile station initiates the establishment of an RR connection, the timer T3158 shall be stopped and no measurement reports shall be sent. When the RR connection is released and if the mobile station has not changed cell, the measurement reporting procedure shall be restarted.

If a cell change has occurred during the RR connection, the measurements shall be cancelled until new NC orders have been received (see sub-clause 5.6).

42.4.1.2.2 Test Purpose

To verify that if the MS reselects a new cell while timer T3158 is active, and the time to expiry of timer T3158 is greater than the indicated reporting period for the new cell, the MS shall immediately restart timer T3158 with the indicated reporting period for the new cell.

To verify that if the MS reselects a new cell while timer T3158 is active, and the time to expiry of timer T3158 is shorter than the indicated reporting period for the new cell, the timer T3158 shall continue to run.

Reference

3GPP TS 044.060, subclauses 7.3 and 5.6.1.

42.4.1.2.3 Method of test

Initial conditions

System Simulator:

3 cells (cell A, cell B, cell C), activated at power-on, GPRS supported.

READY Timer is Set to 4 minutes.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

the Ready Timer is running.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in idle mode.

Test procedure

SS sends PACKET MEASUREMENT ORDER message to MS. SS sends PACKET CELL CHANGE ORDER message to MS with new reporting period before the old reporting period has expired. MS initiates a packet access and sends the PACKET MEASUREMENT REPORT to SS. Another measurement report is sent before new PACKET CELL CHANGE ORDER message with new reporting period is sent to MS. Two more measurement reports are sent using correct reporting periods.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	IMMEDIATE ASSIGNMENT	SS establishes a single block down link
2	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_I of cell A See specific message contents
3	MS ->SS	CHANNEL REQUEST	'Single block packet access'
4	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
5	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH. The SS verifies that measurement results for cells B and C are included.
6	SS->MS	IMMEDIATE ASSIGNMENT	SS establishes a single block downlink
7	SS->MS	PACKET CELL CHANGE ORDER	-Sent on PACCH. - Commands the MS to cell B. -Contains NETWORK_CONTROL_ORDER, NC_REPORTING_PERIOD_T and NC_REPORTING_PERIOD_I of cell B with new reporting period, which is shorter than remaining time of the old reporting period. See specific message contents
8	MS ->SS	CHANNEL REQUEST	To the new cell. 'One phase packet access' Note: The SS should take into account that the MS can start timer 3158 with the new timer values for NC_REPORTING_PERIOD either after step 7 or step 8.
9	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS.
11	MS ->SS	UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating Cell Update
12	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge the received RLC data block, Final Ack Indicator = '1', a valid RRBP. Sent on PACCH.
13	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Acknowledge the RLC control message. Received on PACCH.
14	MS ->SS	CHANNEL REQUEST	To the new cell. 'Single block packet access '
15	SS -> MS	IMMEDIATE ASSIGNMENT	SS verifies that CHANNEL REQUEST arrives at the end of correct reporting period. Sent on AGCH.
16	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH. The SS verifies that measurement results for cells A and C are included.
17	MS ->SS	CHANNEL REQUEST	'Single block packet access ' SS verifies that CHANNEL REQUEST arrives at the end of correct reporting period.
18	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
19	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
20	SS->MS	IMMEDIATE ASSIGNMENT	SS establishes a single block down link
21	SS->MS	PACKET CELL CHANGE ORDER	-Sent on PACCH. - Commands to MS to cell C. -Contains NETWORK_CONTROL_ORDER, NC_REPORTING_PERIOD_T and NC_REPORTING_PERIOD_I of cell C with new reporting period, which is longer than remaining time of the old reporting period. See specific message contents
22	MS ->SS	CHANNEL REQUEST	To the new cell. 'One phase packet access '
23	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
24	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS.
25	MS ->SS	UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating Cell Update
26	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge the received RLC data block, Final Ack Indicator = '1', a valid RRBP. Sent on PACCH.

27	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Acknowledge the RLC control message. Received on PACCH.
28	MS ->SS	CHANNEL REQUEST	'Single block packet access ' CHANNEL REQUEST arrives at the end of correct reporting period.
29	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
30	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH. The SS verifies that measurement results for cells A and B are included.
31	MS ->SS	CHANNEL REQUEST	'Single block packet access ' SS verifies that CHANNEL REQUEST arrives at the end of correct reporting period.
32	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
33	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH. The SS verifies that measurement results for cells A and B are included.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44s)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE ORDER in step 7:

IMMEDIATE_REL	1
ARFCN, BSIC	as specified for cell B
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	110 (30.72s)
NC_REPORTING_PERIOD_T	110 (30.72s)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE ORDER in step 21:

IMMEDIATE_REL	1
ARFCN, BSIC	as specified for cell C
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44s)
NC_REPORTING_PERIOD_T	111 (61.44s)
NC_FREQUENCY_LIST	0 (not present)

42.4.1.3 Network Control measurement reporting / Downlink transfer / Normal case

42.4.1.3.1 Conformance requirement

The procedure for NC measurement report sending shall be initiated by the mobile station at the expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the timer T3158, perform the measurements and send the PACKET MEASUREMENT REPORT message containing the 'NC measurement report struct' on PACCH.

Following a downlink TBF establishment, the PACKET MEASUREMENT REPORT message shall not be sent on the uplink PACCH associated with this TBF until two PACKET DOWNLINK ACK/NACK messages has been sent to the network.

The mobile station shall transmit an RLC/MAC control message other than a PACKET DOWNLINK ACK/NACK message at most every second time it is polled.

42.4.1.3.2 Test Purpose

To verify that the MS sends the measurement report of the NC measurements according to the indicated reporting periods, when the T3158 expires.

To verify that the MS restarts the timer T3158 when it expires.

To verify that the MS sends at least two PACKET DOWNLINK ACK/NACK messages before transmitting a PACKET MEASUREMENT REPORT message upon entering transfer state.

Reference

3GPP TS 04.60, subclauses 8.1.2.2, 8.3 and 5.6.1.

42.4.1.3.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in transfer mode.

Test procedure

MS is brought into downlink packet transfer mode. SS sends a PACKET MEASUREMENT ORDER message. SS sends data blocks and MS answers with PACKET DOWNLINK ACK/NACK. When reporting period has expired and at least two PACKET DOWNLINK ACK/NACK messages has been sent, MS sends a PACKET MEASUREMENT REPORT message. SS sends data blocks continuously and MS sends PACKET MEASUREMENT REPORT messages when reporting period has expired and at least one PACKET DOWNLINK ACK/NACK messages have been sent after the last PACKET MEASUREMENT REPORT message.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	IMMEDIATE ASSIGNMENT	Sent on the PCH, assigning a downlink TBF.
2	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T See specific message contents
3	SS		Wait for 0.5 seconds.
4	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
5	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
6	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
7	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
8	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
9	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
10	SS		Wait for 0.5 seconds.
11	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
12	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
13	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
14	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
15	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
16	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
17	SS->MS	PACKET MEASUREMENT ORDER	- Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T with new reporting period. See specific message contents
18	SS		Wait for 0.5 seconds.
19	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
20	MS -> SS	PACKET MEASUREMENT REPORT	Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
21	SS		Wait for 0.5 seconds.
22	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
23	MS->SS	PACKET DOWNLINK ACK/NACK	- Sent on PACCH.
24	SS		Wait for 1.0 s.
25	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
26	MS -> SS	PACKET MEASUREMENT REPORT	Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
27	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
28	MS -> SS	PACKET DOWNLINK ACK/NACK	- Sent on PACCH.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_T	01 (NC1) 000 (0,48 s)
---	--------------------------

PACKET MEASUREMENT ORDER in step 17:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_T	01 (NC1) 001 (0,96 s)
---	--------------------------

42.4.1.4 Network Control measurement reporting / Uplink transfer / Continuation in Idle mode.

42.4.1.4.1 Conformance requirement

The procedure for NC measurement report sending shall be initiated by the mobile station at the expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the timer T3158, perform the measurements and send the PACKET MEASUREMENT REPORT message containing the 'NC measurement report struct' on PACCH.

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to the MS or there is a downlink signalling failure or the MS goes to the Standby state.

Reference

3GPP TS 04.60, subclauses 8.1.2.2, 8.3 and 5.6.1.

3GPP TS 05.08, subclause 10.1.4

42.4.1.4.2 Test Purpose

To verify that if the NC parameters are changed while in packet transfer mode, the MS continues to use the changed parameters after returning to packet idle mode.

42.4.1.4.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

MS is GPRS attached with a P-TMSI allocated.

PDP context 2 established.

Specific PICS Statements

- MS GPRS Release (TSPC_MS_GPRS_RELEASE)

PIXIT Statements

-

Test procedure

MS is brought into uplink packet transfer mode. SS commands MS to NC2 with PACKET MEASUREMENT ORDER. SS checks that the MS is sending the PACKET MEASUREMENT REPORT at the expiry of the reporting period. SS allows the MS to complete the data transfer. SS checks that after entering packet idle mode MS continues being in NC2 mode by receiving the PACKET MEASUREMENT REPORT.

The test is repeated twice for k=1, and k=2.

K=1:

READY TIMER is set to 2 min, NC_REPORTING_PERIOD_I set to 61.44 sec and NC_REPORTING_PERIOD_T set to 1.92 sec.

K=2:

READY TIMER is set to 30 sec, NC_REPORTING_PERIOD_I set to 7.68 sec and NC_REPORTING_PERIOD_T set to 1.92 sec.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	{ Uplink dynamic allocation one phase access with contention resolution } or {Uplink dynamic allocation two phase access}	Macro parameters: 500 : the number of RLC data block to be transferred, USF_GRANULARITY : 1 RLC_DATA_BLOCKS_GRANTED : absent (open-end) CHANNEL_CODING_COMMAND : CS-1 LLI_BLOCK_CHANNEL_CODING : CS-1
2	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. - For K = 1 and K =2 NETWORK_CONTROL_ORDER , NC_REPORTING_PERIOD_T and NC_REPORTING_PERIOD_I are Specified. See specific message Contents
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS in step 1.
4a	MS -> SS	RLC data block	Received on PDTCH assigned in step 1.
4b	MS -> SS	PACKET MEASUREMENT REPORT	
5	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH. Acknowledging the received block.
6			Repeat steps 3-5 until the MS completes the data transfer of all the octets triggered in step 1. The last PACKET UPLINK ACK/NACK is sent with valid RRBp and FAI = 1. SS verifies that the time interval between two consecutive PACKET MEASUREMENT REPORTS is as per REPORTING_PERIOD_T of PMO sent in Step 2.
7	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on PACCH.
8	MS ->SS	CHANNEL REQUEST	'Single block packet access' For Rel4 and earlier MS: SS verifies that either Rel5 requirements are fulfilled OR: CHANNEL REQUEST arrives : - After NC_REPORTING_PERIOD_T from last execution of step 4b for first CHANNEL REQUEST. Note: When the MS enters Idle mode, the Channel Request may be delayed by one Paging block of the MS. - After NC_REPORTING_PERIOD_I from last CHANNEL REQUESTs (step 8) for following CHANNEL REQUEST(s). For Rel5 and later MS: SS verifies that CHANNEL REQUEST arrives : - After NC_REPORTING_PERIOD_I from step 7 After NC_REPORTING_PERIOD_I from last CHANNEL REQUEST (step 8) for following CHANNEL REQUEST(s).
9	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
10	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH.
11	SS		Steps 8-10 will be repeated till the READY TIMER expires. Check for NC_REPORTING_PERIOD_I that the MS stops sending Packet Measurement Reports

Note: in step 4x, the MS shall perform either the 'a' branch or the 'b' branch.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

For K = 1:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_I NC_REPORTING_PERIOD_T	10 (NC2) 111 (61.44 s) 010 (1.92 s)
--	---

For K = 2:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_I NC_REPORTING_PERIOD_T	10 (NC2) 100 (7.68 s) 010 (1.92 s)
--	--

42.4.1.5 Network Control measurement reporting / Idle mode / DSC failure/ reselection.

42.4.1.5.1 Conformance requirement

The procedure for NC measurement report sending shall be initiated by the mobile station at the expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the timer T3158, perform the measurements and send the PACKET MEASUREMENT REPORT message containing the 'NC measurement report struct' on PACCH.

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER, NC_REPORTING_PERIOD(s) and optionally REPORT_TYPE, MULTIBAND_REPORTING, SERVING_BAND_REPORTING, XXX_MULTIRAT_REPORTING, XXX_REPORTING_OFFSET, XXX_REPORTING_THRESHOLD (XXX indicates frequency band or radio access technologies), FDD_REPORTING_THRESHOLD_2, REP_PRIORITY, REPORTING_RATE, INVALID_BSIC_REPORTING, SCALE_ORD, FDD_REP_QUANT, Qsearch_P, 3G_SEARCH_Prio), E-UTRAN_REP_QUANT, E-UTRAN_FDD_REPORTING_THRESHOLD, E-UTRAN_FDD_REPORTING_THRESHOLD_2, E-UTRAN_TDD_REPORTING_THRESHOLD, E-UTRAN_TDD_REPORTING_THRESHOLD_2, E-UTRAN_FDD_MEASUREMENT_REPORT_OFFSET and E-UTRAN_TDD_MEASUREMENT_REPORT_OFFSET, Qsearch_P_E-UTRAN) is broadcast on BCCH and, excepting E-UTRAN parameters, on PBCCH if it exists.

The MS shall send measurement reports to the network as defined in subclause 10.1.4.1.

The MS shall only perform autonomous cell re-selection when the reselection is triggered by a downlink signalling failure as defined in subclause 6.5 or a random access failure as defined in 3GPP TS 44.018 and 3GPP TS 44.060 or if the cell is barred or the C1 criterion falls below zero. The MS shall only determine whether the cell is barred once camped on the cell.

Reference

3GPP TS 044.060, subclauses 8.1.2.2, 8.3 and 5.6.1.

3GPP TS 045.008, subclause 10.1.4

42.4.1.5.2 Test Purpose

To verify that while in NC2, MS performs autonomous cell reselection when the reselection is triggered by the downlink signalling failure.

42.4.1.5.3 Method of test

Initial conditions

System Simulator:

2 cell, GPRS supported.

Parameter	Carrier1	Carrier2
RF Signal Level (dBm)	-60	-70
NETWORK_CONTROL_ORDER	NC2	NC2
NC_REPORTING_PERIOD_I	110 (30.72 sec)	110 (30.72 sec)

Mobile Station:

MS is GPRS attached on cell A (Carrier 1) with a P-TMSI allocated. Ready timer is set to 2 min.

Specific PICS Statements

-

PIXIT Statements

-

Test procedure

MS is in packet idle mode in cell A (Carrier 1). MS sends a CHANNEL REQUEST for the measurement report. SS assigns resources for it. MS sends a PACKET MEASUREMENT REPORT. SS receives one more PACKET MEASUREMENT REPORT by repeating the above steps. SS starts sending the corrupted blocks on the MS PCH channel in such a way that $DSC < 0$. SS checks that the MS does reselection to cell B.

Maximum duration of the test

5 min.

Expected sequence

Step	Direction	Message	Comments
1	MS->SS	CHANNEL REQUEST	ACCESS TYPE = 'Single block packet access'. Received on RACH.
2	SS->MS	IMMEDIATE ASSIGNMENT	Received on cell A
3	MS ->SS	PACKET MEASUREMENT REPORT	Sent on AGCH, assigning a single block.
4			Received on the allocated PDCH.
5	SS		Steps 1-3 are repeated once.
6	SS		SS Verifies that the measurement results for cells A, B are included in the PACKET MEASUREMENT REPORT.
7	MS -> SS	CHANNEL REQUEST	SS starts sending the corrupted data on successive paging blocks of the MS until $DSC < 0$. Then it reverts to sending of the normal data.
			Received on cell B.
			'One phase packet access'

Specific message contents

None.

42.4.2 Cell change order procedures

42.4.2.1 Cell change order procedure / Uplink transfer

42.4.2.1.1 Cell change order procedure / Uplink transfer / Normal case

42.4.2.1.1.1 Conformance requirement

The cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message to the mobile station on the PCCCH or PACCH. Upon receipt of the PACKET CELL CHANGE ORDER message the mobile station shall start timer T3174.

When a cell reselection is made controlled by the network, the mobile station shall act upon the IMMEDIATE_REL value which has been received in the Packet Cell Change Order: if required, the mobile station shall abort any TBF in progress by immediately ceasing to decode the downlink, ceasing to transmit on the uplink, stopping all RLC/MAC timers except for timers related to measurement reporting. The mobile station shall then switch to the identified specified new cell and shall obey the relevant RLC/MAC procedures on this new cell.

42.4.2.1.1.2 Test Purpose

To verify the when NC2 is commanded, the MS sends PACKET MEASUREMENT REPORT messages, in which both the serving and non-serving cells are reported.

To verify that when the cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message with the IMMEDIATE_REL value set to 1, the MS shall abort any TBF in progress and stop transmitting.

To verify that the MS shall switch to the new cell.

Reference

3GPP TS 04.60, subclauses 8.4 and 5.5.1.1.

42.4.2.1.1.3 Method of test

Initial conditions

System Simulator:

2 cells (cell A and cell B), activated at power-on, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in transfer mode.

Test procedure

MS is brought into uplink packet transfer mode. SS commands MS to NC2 with PACKET MEASUREMENT ORDER. SS waits for a PACKET MEASUREMENT REPORT to contain measurement results for both cell A and cell B. SS sends a PACKET CELL CHANGE ORDER message. SS checks that there is no traffic on the old cell. MS switches to the new cell and re-establishes the uplink TBF.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{ Uplink dynamic allocation one phase access with contention resolution } or {Uplink dynamic allocation two phase access}	Macro parameters: 400 : the number of RLC data block to be transferred, USF_GRANULARITY : 1 RLC_DATA_BLOCKS_GRANTED : absent (open-end) CHANNEL_CODING_COMMAND : CS-1 TLLI_BLOCK_CHANNEL_CODING : CS-1
1a		PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS in step 1
2	MS -> SS	RLC data blocks	MS sends data
3	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH, 3 block periods from the PACKET UPLINK ACK/NACK in step 3. - Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD See specific message contents USF assigned to the MS.
5a	MS->SS	RLC data block	
5b	MS->SS	PACKET MEASUREMENT REPORT	
6	SS		Repeat step 5 (periodically assign USF to the MS) until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message.
7	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. IMMEDIATE_REL bit is set to "1" Contains -BSIC + BCCH frequency of cell B. - The network control order, NC2 - USF assigned to the MS in step 1 See specific message contents
8	SS		Check that no more than six data blocks are transmitted from the MS on the old channel.
9		{ Uplink dynamic allocation one phase access with contention resolution } or {Uplink dynamic allocation two phase access}	USF_GRANULARITY : 1 RLC_DATA_BLOCKS_GRANTED : absent (open-end) CHANNEL_CODING_COMMAND : CS-1 TLLI_BLOCK_CHANNEL_CODING : CS-1 These macros are to be used from the step 1 onwards. This Macro is to be performed on the cell B.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS in step 9.
11	MS -> SS	RLC data blocks	MS sends data
12	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Note: in step 5x, the MS shall perform **either** the 'a' branch **or** the 'b' branch.

Specific message contents

PACKET MEASUREMENT ORDER in step 4:

Global TFI	TFI of the uplink TBF
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	010 (1.92 sec)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE ORDER in step 7:

Global TFI	TFI of the uplink TBF
IMMEDIATE_REL	1
ARFCN, BSIC	specified for cell B
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	100 (7.68 sec)
NC_FREQUENCY_LIST	0 (not present)

42.4.2.1.2 Void

42.4.2.1.3 Cell change order procedure / Uplink transfer / Failure cases / REJECT from the new cell

42.4.2.1.3.1 Conformance requirement

42.4.2.1.3.1.1 Conformance requirement for Rel-5 and earlier

If a PACKET ACCESS REJECT message is received from the new cell, the mobile station shall start timer T3176, return to the old cell and send a PACKET CELL CHANGE FAILURE message to the network.

If the mobile station was in uplink packet transfer before the cell change, the mobile station shall establish a new uplink TBF and send the PACKET CELL CHANGE FAILURE message on this TBF. The mobile station shall then resume its uplink transfer on this TBF.

Reference

3GPP TS 04.60/44.060, subclause 8.4.1.

42.4.2.1.3.1.2 Conformance requirement for Rel-6 and later

In the following cases, the mobile station shall determine that the network controlled cell reselection procedure has failed:

- Access is denied in the new cell (i.e., the mobile station receives an IMMEDIATE ASSIGNMENT REJECT, a PACKET ASSIGNMENT REJECT or, in a UTRAN cell, an RRC CONNECTION REJECT message). *Cause*: “Immediate Assign Reject or Packet Access Reject on target cell”.

The mobile station shall send a PACKET CELL CHANGE FAILURE message with the appropriate cause value to the network in the old cell and stop timer T3176. The PACKET CELL CHANGE FAILURE message may be sent on PACCH when the mobile station is in packet transfer mode or MAC-Shared state. Alternatively, the mobile station may initiate random access with access type “single block without TBF establishment” (PCCCH) / “single block packet access” (CCCH) and send the PACKET CELL CHANGE FAILURE message using an allocated single uplink block.

Reference

3GPP TS 44.060, subclause 8.4.2.

42.4.2.1.3.2 Test Purpose

To verify that the mobile station sends a PACKET CELL CHANGE FAILURE message to the network from the old cell, if a PACKET ACCESS REJECT message is received from the new cell.

42.4.2.1.3.3 Method of test

Initial conditions

System Simulator:

2 cells (cell A, cell B), activated at power-on, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in Transfer mode.

Test procedure

MS is brought into uplink packet transfer mode. SS sends the PACKET CELL CHANGE ORDER message to the MS. MS sends the CHANNEL REQUEST. SS sends IMMEDIATE ASSIGNMENT REJECT message. MS returns to the old cell and sends PACKET CELL CHANGE FAILURE message to the network.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	Macro parameters: USF_GRANULARITY: 1 RLC_DATA_BLOCKS_GRANTED: absent (open-end) CHANNEL_CODING_COMMAND: CS-1 LLI_BLOCK_CHANNEL_CODING: CS-1
2	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH, 3 block periods after contention resolution in step 1 has been completed. - Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD. See specific message contents
3	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
4a	MS -> SS	RLC data blocks	MS sends data
4b	MS -> SS	PACKET MEASUREMENT REPORT	
5	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
6	SS		Repeat steps 3-5 until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message.
7	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order See specific message contents
8	MS -> SS	CHANNEL REQUEST	To the new cell. 'One Phase Access Request' or 'Two Phase Access Request'
9	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Received from the new cell
10	MS -> SS	CHANNEL REQUEST	Received on RACH To the old cell. Sent within 15 seconds from the IMMEDIATE ASSIGNMENT REJECT in step 9.
11	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Single block assignment.
12	MS -> SS	PACKET CELL CHANGE FAILURE or PACKET RESOURCE REQUEST	Error cause in PACKET CELL CHANGE FAILURE: "Packet Access Reject on target cell" See specific message content. Branch 'b' will be performed when PACKET RESOURCE REQUEST is received.
13a	MS -> SS	CHANNEL REQUEST	To the old cell.
14a	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on the AGCH. Single block assignment
15a	MS -> SS	PACKET RESSOURCE REQUEST	Sent on the assigned block.
16a	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH. Dynamic allocation
13b	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH. Dynamic allocation.
14b	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
15b	MS -> SS	PACKET CELL CHANGE FAILURE	Error cause:" Packet Access Reject on target cell " See specific message content
17	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS

			<p>If the first received RLC Data Block in current TBF contains an empty LLC PDU, the SS shall accept Packet Resource Request from MS and respond with Packet Uplink Assignment. The USF shall be assigned once more to the MS.</p> <p>NOTE: The empty LLC PDU may be accompanied by another low priority RLC data block (with Packet Resource Request and Packet Uplink Assignment as required), in order to ensure that the radio resources are used efficiently. MS sends data</p>
18a	MS -> SS	RLC data blocks	
18b	MS -> SS	PACKET MEASUREMENT REPORT	
19	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH if step 18a was executed.
Note:			In steps 4x, steps 12x-16x and 18x the MS shall perform either the 'a' branch or the 'b' branch.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

Global TFI	TFI of the uplink TBF
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	010 (1.92 sec)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE ORDER in step 7:

Global TFI	TFI of the uplink TBF
IMMEDIATE_REL	1
ARFCN, BSIC	specified for cell B
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	100 (7.68 sec)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE FAILURE in step 12/15b:

Packet Cell Change Failure message content:	
CAUSE	0010

42.4.2.1.4 Cell change order procedure / Uplink transfer / Failure cases / Contention resolution failure

42.4.2.1.4.1 Conformance requirement

42.4.2.1.4.1.1 Conformance requirement for Rel-5 and earlier

If the contention resolution procedure fails on the new cell, then the mobile station shall start timer T3176 and return to the old cell. The mobile station shall send a PACKET CELL CHANGE FAILURE message to the network.

If the mobile station was in uplink packet transfer before the cell change, the mobile station shall establish a new uplink TBF and send the PACKET CELL CHANGE FAILURE message on this TBF. The mobile station shall then resume its uplink transfer on this TBF.

References

3GPP TS 04.60/44.060, subclause 8.4.1

42.4.2.1.4.1.2 Conformance requirement for Rel-6 and later

The mobile station shall regard the network controlled cell reselection procedure as successfully completed when it has performed access and successfully completed contention resolution in the new cell.

In the following cases, the mobile station shall determine that the network controlled cell reselection procedure has failed:

- The mobile station is unable to synchronise to the new cell (see 3GPP TS 45.008) or the timer T3174 expires before a successful completion of the network controlled cell reselection procedure. *Cause*: 'No response on target cell'.

If the mobile station determines that the network controlled cell reselection procedure has failed, the mobile station shall stop timer T3174 (if it is still running) and start timer T3176. The mobile station shall return to the old cell, where it may trigger a cell update or other GMM specific procedure. In case the mobile station synchronised and attempted to access the new cell before returning to the old cell, the mobile station shall trigger a cell update or other GMM specific procedure, as appropriate according to the GMM requirements (see 3GPP TS 24.008).

The mobile station shall send a PACKET CELL CHANGE FAILURE message with the appropriate cause value to the network in the old cell and stop timer T3176. The PACKET CELL CHANGE FAILURE message may be sent on PACCH when the mobile station is in packet transfer mode or MAC-Shared state. Alternatively, the mobile station may initiate random access with access type 'single block without TBF establishment' (PCCCH) / 'single block packet access' (CCCH) and send the PACKET CELL CHANGE FAILURE message using an allocated single uplink block.

References

3GPP TS 44.060, subclauses 8.4.1 and 8.4.2

42.4.2.1.4.2 Test Purpose

To verify that the mobile station initiates a random access to the old cell, if the contention resolution procedure fails on the new cell.

42.4.2.1.4.3 Method of test

Initial conditions

System Simulator:

2 cells (cell A, cell B), activated at power-on, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached. Ready timer is set to 44 seconds

PDP context established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in Transfer mode.

Test procedure

MS is brought into uplink packet transfer mode. SS sends the PACKET CELL CHANGE ORDER message to the MS. MS sends the CHANNEL REQUEST to the new cell. Contention resolution procedure fails in the new cell. While timer T3174 is running the MS may re-initiate the packet access procedure on the new cell. MS initiates a random access to the old cell and sends PACKET CELL CHANGE FAILURE message to the network.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	MS is brought into uplink packet transfer mode and contention resolution is completed. Macro parameters: USF_GRANULARITY: 1 RLC_DATA_BLOCKS_GRANTED: absent (open-end) CHANNEL_CODING_COMMAND: CS-1 TLLI_BLOCK_CHANNEL_CODING: CS-1
2	SS -> MS	PACKET MEASUREMENT ORDER	Sent on PACCH, 3 block periods after contention resolution in step 1 has been completed. - Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD. See specific message contents USF assigned to the MS
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	
4a	MS -> SS	RLC data blocks	MS sends data
4b	MS -> SS	PACKET MEASUREMENT REPORT	
5	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
6	SS		Repeat steps 3-5 until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message.
7	SS -> MS	PACKET CELL CHANGE ORDER	Sent on PACCH. Contains -BSIC + BCCH frequency -The network control order See specific message contents.
8	MS -> SS	CHANNEL REQUEST	Received on RACH To the new cell. 'One Phase Packet Access' or 'Single Block Packet Access' If MS request 'One Phase Access Request' branch A applies, otherwise branch B applies.
9A	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on the AGCH.
10A	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS. Sent at earliest 3 block periods from the IMMEDIATE ASSIGNMENT in step 9A.
11A	MS -> SS	RLC data block	The data block contains the TLLI. The TLLI should be the same in each RLC data block header. Or The RLC data serves as cell update.
12A	SS -> MS	PACKET UPLINK ACK/NACK	Contention resolution procedure fails in the new cell. Message has wrong TLLI. Sequence continues on step 13
9B	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on the AGCH. Single block allocation.
10B	MS -> SS	PACKET RESSOURCE REQUEST	Send on the assigned block.
11B	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on the PACCH. Dynamic allocation, Message has wrong TLLI. While timer T3174 is running the MS may re-initiate the packet access procedure on the new cell using one of the access types specified in step 8. In this case steps 9A to 12A or 9B to 11B are repeated. The SS verifies that no CHANNEL REQUEST is received on cell B after expiry of timer T3174.

13	MS -> SS	CHANNEL REQUEST	To the old cell. Within 15 seconds from PACKET UPLINK ACK/NACK in step 12A or the PACKET UPLINK ASSIGNMENT in step 11B. Received on RACH 'One Phase Packet Access' or 'Single Block Packet Access' If MS requests 'Single Block Packet Access' branch A shall apply, otherwise branch B applies.
14A	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Single block assignment. Presence of error code should be checked, value should be '0001' (No response on target cell)
15A	MS -> SS	PACKET CELL CHANGE FAILURE	
16A	MS -> SS	CHANNEL REQUEST	To the old cell. 'One Phase Access Request' or 'Single Block Packet Access'.
17A	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on the AGCH. Single block assignment. (forcing two phase access).
18A	MS -> SS	PACKET RESSOURCE REQUEST	Send on the assigned block.
19A	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on the PACCH. Dynamic allocation. Sequence continues in step 20.
14B	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on the AGCH. Single block assignment.
15B	MS -> SS	PACKET RESSOURCE REQUEST	Send on the assigned block.
16B	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on the PACCH. Dynamic allocation,
17B	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
18B	MS -> SS	PACKET CELL CHANGE FAILURE	Presence of error code should be checked, value should be '0001' (No response on target cell)
20	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
21	MS -> SS	RLC data block	MS sends data
22	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

Global TFI	TFI of the uplink TBF
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	010 (1.92 sec)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE ORDER in step 7:

Global TFI	TFI of the uplink TBF
IMMEDIATE_REL	1
ARFCN, BSIC	specified for cell B
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	110 (30.72 sec)
NC_FREQUENCY_LIST	0 (not present)

42.4.2.1.5 Void

42.4.2.1.6 Cell change order procedure / Uplink transfer / Failure cases / Frequency not implemented

42.4.2.1.6.1 Conformance requirement

If the network message instructs the mobile station to use a frequency that it is not capable of using, the mobile station shall send a PACKET CELL CHANGE FAILURE message with cause "frequency not implemented" and remain on the current PDCH(s).

42.4.2.1.6.2 Test Purpose

To verify that the mobile station returns a PACKET CELL CHANGE FAILURE message, if the ordered frequency cannot be used.

Reference

3GPP TS 04.60, subclause 8.4.2.

42.4.2.1.6.3 Method of test

System Simulator:

1 cell, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in Transfer mode.

Test procedure

MS is brought into uplink packet transfer mode. SS sends the PACKET CELL CHANGE ORDER message. MS is not capable of using the ordered frequency and sends a PACKET CELL CHANGE FAILURE message to the network. MS shall remain on the current PDCH(s).

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	MS is brought into uplink packet transfer mode. Macro parameters: USF_GRANULARITY: 1 RLC_DATA_BLOCKS_GRANTED: absent (open-end) CHANNEL_CODING_COMMAND: CS-1 TLLI_BLOCK_CHANNEL_CODING: CS-1
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
3	MS -> SS	RLC data blocks	MS sends data
4	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
5	SS -> MS	PACKET CELL CHANGE ORDER	Contains -BSIC + BCCH frequency -The network control order MS is not capable of using the ordered frequency.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
7	MS -> SS	PACKET CELL CHANGE FAILURE	Sent on the PACCH. Error cause "frequency not implemented". See specific message content.
8	MS		MS shall remain on the current PDCH(s).
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
10	MS -> SS	RLC data blocks	MS sends data
11	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Specific message contents

PACKET CELL CHANGE FAILURE in step 7:

Packet Cell Change Failure message content: CAUSE	0000
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42.4.2.2 Cell change order procedure / Downlink transfer

42.4.2.2.1 Cell change order procedure / Downlink transfer / Normal case

42.4.2.2.1.1 Conformance requirement

The cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message to the mobile station on the PCCCH or PACCH. Upon receipt of the PACKET CELL CHANGE ORDER message the mobile station shall start timer T3174.

When a cell reselection is made controlled by the network, the mobile station shall act upon the IMMEDIATE_REL value which has been received in the Packet Cell Change Order: if required, the mobile station shall abort any TBF in progress by immediately ceasing to decode the downlink, ceasing to transmit on the uplink, stopping all RLC/MAC timers except for timers related to measurement reporting. The mobile station shall then switch to the identified specified new cell and shall obey the relevant RLC/MAC procedures on this new cell.

42.4.2.2.1.2 Test Purpose

To verify that when NC2 is commanded, the MS sends PACKET MEASUREMENT REPORT messages, in which both the serving and non-serving cells are reported.

To verify that the cell change order procedure is started when the MS receives a PACKET CELL CHANGE ORDER message.

To verify that the MS switches to the new cell.

To verify that the MS correctly performs a cell update.

To verify that the MS uses the established downlink TBF on the new cell.

Reference

3GPP TS 04.60, subclauses 8.4 and 5.5.1.1.

42.4.2.2.1.3 Method of test

Initial conditions

System Simulator:

2 cells (cell A, cell B), activated at power-on, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in Transfer mode.

Test procedure

MS is brought into downlink packet transfer mode. SS sends a PACKET CELL CHANGE ORDER message. MS switches to the new cell and SS establishes a new downlink TBF.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	IMMEDIATE ASSIGNMENT	SS establish a Downlink TBF.
2	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH, 3 block periods from the IMMEDIATE ASSIGNMENT in step 1. - Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD. See specific message contents
3	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
4a	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
4b	MS->SS	PACKET MEASUREMENT REPORT	Sent on PACCH.
5	SS		Repeat steps 3-4 until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message. The SS verifies that for the first 2 polls, PACKET DOWNLINK ACK/NACK messages are sent by the MS.
6	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. IMMEDIATE_REL bit is set to "1" Contains -BSIC + BCCH frequency of cell B -The network control order, NC2 See specific message contents
7	MS->SS	CHANNEL REQUEST	To the new cell. Received on RACH
8	SS->MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
9	MS->SS	RLC data block	Sent on the PDCH. The RLC data also serves as cell update.
10	SS->MS	PACKET UPLINK ACK/NACK	Sent on the PACCH with valid RRBp.
11	MS->SS	PACKET CONTROL ACK	
12	SS		The SS waits 2 sec for expiring timer T3158 which was set in PACKET MEASUREMENT ORDER message in step 2; If the MS does not send a CHANNEL REQUEST for sending a PACKET MEASUREMENT REPORT continue with step 14
13a	MS->SS	CHANNEL REQUEST	Single Block without TBF establishment
13b	SS->MS	IMMEDIATE ASSIGNMENT	
13c	MS->SS	PACKET MEASUREMENT REPORT	
14	SS->MS	IMMEDIATE ASSIGNMENT	Sent on AGCCH. On the new cell. Addressing the MS with TLLI.
15	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
16	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.

Note 1: in step 4x, the MS shall perform **either** the 'a' branch **or** the 'b' branch.

Note 2: steps 13a-c are performed only when MS tries to send a PACKET MEASUREMENT REPORT after expiring of T3158 in step 12

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

Global TFI	TFI of the downlink TBF
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	010 (1.92 sec)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE ORDER in step 6:

Global TFI	TFI of the downlink TBF
IMMEDIATE_REL	1
ARFCN, BSIC	specified for cell B
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	100 (7.68 sec)
NC_FREQUENCY_LIST	0 (not present)

42.4.2.2.2 Cell change order procedure / Downlink transfer / Failure cases / REJECT from the new cell

42.4.2.2.2.1 Conformance requirement

If a PACKET ACCESS REJECT message is received from the new cell, the mobile station shall start timer T3176, return to the old cell and send a PACKET CELL CHANGE FAILURE message to the network.

If the mobile station was in downlink packet transfer mode before the cell change, the mobile station shall initiate a random access to the old cell, with access type "single block without TBF establishment", and then transmit the PACKET CELL CHANGE FAILURE message on the single block.

42.4.2.2.2.2 Test Purpose

To verify that the mobile station sends a PACKET CELL CHANGE FAILURE message to the network in the old cell, if a IMMEDIATE ASSIGNMENT REJECT message is received from the new cell.

Reference

3GPP TS 04.60, subclause 8.4.1.

42.4.2.2.2.3 Method of test

Initial conditions

System Simulator:

2 cells (cell A, cell B), activated at power-on GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached. Ready Timer is deactivated.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in idle mode.

Test procedure

MS is brought into downlink packet transfer mode. SS sends the PACKET CELL CHANGE ORDER message to the MS. MS sends the CHANNEL REQUEST. SS sends IMMEDIATE ASSIGNMENT REJECT message. MS returns to the old cell and sends PACKET CELL CHANGE FAILURE message to the network.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on the PCH.
2	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH, 3 block periods from the IMMEDIATE ASSIGNMENT in step 1. - Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD. See specific message contents
3	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
4a	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
4b	MS->SS	PACKET MEASUREMENT REPORT	Sent on PACCH.
5	SS		Repeat steps 3-4 until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message. The SS verifies that for the first 2 polls, PACKET DOWNLINK ACK/NACK messages are sent by the MS.
6	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. IMMEDIATE_REL bit is set to "1" Contains -BSIC + BCCH frequency of cell B. -The network control order, NC2 See specific message contents
7	MS -> SS	CHANNEL REQUEST	To the new cell.
8	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Received from the new cell
9a	MS -> SS	CHANNEL REQUEST	To the old cell within 15 seconds from the IMMEDIATE ASSIGNMENT REJECT in step 8.
10a	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH, single block allocation
11a	MS -> SS	PACKET CELL CHANGE FAILURE	Single block. Error cause:" Packet Access Reject on target cell " See specific message content
9b	MS -> SS	CHANNEL REQUEST	To the old cell within 15 seconds from the IMMEDIATE ASSIGNMENT REJECT in step 8.
10b	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH, dynamic allocation
11b	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH, at earlier 3 block periods for the PACKET UPLINK ASSIGNMENT in step 10b. Assigns USF allocated to the MS
12b	MS -> SS	PACKET CELL CHANGE FAILURE	Error cause:" Packet Access Reject on target cell " See specific message content
13b	SS->SS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH Assigns an USF allocated to the MS
14b	MS->SS	RLC data block	empty LLC PDU serving as cell update, CV=0
15b	SS->MS	PACKET UPLINK ACK/NACK	FAI =1, S/P=1. Including the TLLI of the MS.
16b	MS->SS	PACKET CONTROL ACKNOWLEDGEMENT	

Note: in step 4x and 9x to 11x/16x, the MS shall perform **either** the 'a' branch **or** the 'b' branch.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

Global TFI	TFI of the downlink TBF
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	010 (1.92 sec)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE ORDER in step 6:

Global TFI	TFI of the downlink TBF
IMMEDIATE_REL	1
ARFCN, BSIC	specified for cell B
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	100 (7.68 sec)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE FAILURE in step 11a or 12b:

Packet Cell Change Failure message content: CAUSE	0010 (Packet Access Reject on target cell)
--	--

42.4.2.2.3 Cell change order procedure / Downlink transfer / Failure cases / Frequency not implemented

42.4.2.2.3.1 Conformance requirement

If the network message instructs the mobile station to use a frequency that it is not capable of using, the mobile station shall send a PACKET CELL CHANGE FAILURE message and remain on the current PDCH(s).

42.4.2.2.3.2 Test Purpose

To verify that the mobile station returns a PACKET CELL CHANGE FAILURE message if it is not capable of using the ordered frequency.

Reference

3GPP TS 04.60, subclause 8.4.2.

42.4.2.2.3.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in idle mode.

Test procedure

MS is brought into downlink packet transfer mode. SS sends the PACKET CELL CHANGE ORDER message. The ordered frequency is not capable of using. The MS sends a PACKET CELL CHANGE FAILURE message to the network.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	IMMEDIATE ASSIGNMENT	Sent on the PCH, downlink TBF.
2	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
3	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order The frequency is not capable of using.
5	SS->MS	RLC data block	Data block with polling.
A6	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH. Channel Request Description to establish UL-TBF in order to send Cell Update
A7	SS->MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH.
A8	MS->SS	PACKET CELL CHANGE FAILURE	Sent on PACCH. Error cause: "Frequency not implemented". See specific message content.
A9	MS->SS	RLC data block	LLC PDU implicitly indicating Cell Update
A10	SS->MS	PACKET UPLINK ACK/NACK	Acknowledge the received RLC data block, Final Ack Indicator = '1', a valid RRBP. Sent on PACCH.
B6	MS->SS	PACKET CELL CHANGE FAILURE	Sent on PACCH. Error cause: "Frequency not implemented". See specific message content.

Note: Branch A is performed only in case MS wants to do a Cell Update. Branch B is performed if MS does not do a Cell Update.

Specific message contents

PACKET CELL CHANGE FAILURE in step A8 and B6:

Packet Cell Change Failure message content: CAUSE	0000 (Frequency not implemented)
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42.4.2.3 Cell change order procedure / Simultaneous uplink and downlink transfer

42.4.2.3.1 Cell change order procedure / Simultaneous uplink and downlink transfer / Normal case

42.4.2.3.1.1 Conformance requirement

The cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message to the mobile station on the PCCCH or PACCH. Upon receipt of the PACKET CELL CHANGE ORDER message the mobile station shall start timer T3174.

When a cell reselection is made controlled by the network, the mobile station shall act upon the IMMEDIATE_REL value which has been received in the Packet Cell Change Order: if required, the mobile station shall abort any TBF in progress by immediately ceasing to decode the downlink, ceasing to transmit on the uplink, stopping all RLC/MAC timers except for timers related to measurement reporting. The mobile station shall then switch to the identified specified new cell and shall obey the relevant RLC/MAC procedures on this new cell.

When cell reselection is controlled by the network, the mobile station in packet transfer mode shall act upon the IMMEDIATE_REL value: it may continue its operation in the old serving cell, as in mobile steered cell reselection, or it shall immediately abort its TBF if it is indicated by the IMMEDIATE_REL value.

Under no circumstances, operations in the old cell shall be continued more than 5 s after a cell reselection has been determined.

42.4.2.3.1.2 Test Purpose

To verify that when the cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message, the MS shall abort any TBF in progress and stop transmitting.

To verify that the MS shall switch to the new cell.

To verify that the MS shall act upon the IMMEDIATE_REL value.

Reference

3GPP TS 04.60, subclauses 5.5.1.1, 8.4 and 8.4.1.

42.4.2.3.1.3 Method of test

Initial conditions

System Simulator:

2 cells (cell A, cell B), activated at power-on, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in simultaneous uplink and downlink packet transfer mode.

Test procedure

MS is brought into simultaneous uplink and downlink packet transfer mode. SS sends a PACKET CELL CHANGE ORDER message with IMMEDIATE_REL value set to 1 to force the mobile to release all ongoing TBFs. MS switches to the new cell and simultaneous uplink and downlink TBF is re-established.

SS sends a PACKET CELL CHANGE ORDER message with IMMEDIATE_REL value set to 0. The MS continues its operation in the old serving cell.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{ Uplink dynamic allocation one phase access with contention resolution } or {Uplink dynamic allocation two phase access}	Macro parameters: 400 : the number of RLC data block to be transferred, USF_GRANULARITY : 1 RLC_DATA_BLOCKS_GRANTED : absent (open-end) CHANNEL_CODING_COMMAND : CS-1 LLI_BLOCK_CHANNEL_CODING : CS-1
2	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH, at earliest 3 block periods after contention resolution for the uplink TBF is completed. - Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD. See specific message contents
3	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PACCH. USF assigned to the MS in step 1
4	MS -> SS	RLC data block	MS sends data.
5	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH, USF assigned to the MS in step 1
6a	MS -> SS	RLC data block	MS sends data.
6b	MS->SS	PACKET MEASUREMENT REPORT	
7	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
8	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
9a	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
9b	MS -> SS	PACKET MEASUREMENT REPORT	
10	SS		Repeat steps 5-9 until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message
11	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order-NC2 -USF IMMEDIATE_REL bit is set to 1. See specific message content.
12	SS		USF assigned to the MS in step 1 Check that no more than six data blocks are transmitted from the MS on old channel SS assigns USFs to the MS in PACKET DOWNLINK DUMMY CONTROL BLOCKS
13		{ Uplink dynamic allocation one phase access with contention resolution } or {Uplink dynamic allocation two phase access}	Macro parameters: USF_GRANULARITY : 1 RLC_DATA_BLOCKS_GRANTED : absent (open-end) CHANNEL_CODING_COMMAND : CS-1 LLI_BLOCK_CHANNEL_CODING : CS-1
14	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS in step 13
15	MS->SS	RLC data block	MS sends data. The RLC data also serves as cell update.
16	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH. If the first received RLC Data Block in current TBF contain an empty LLC PDU, The SS shall accept Packet Resource Request from MS and respond with Packet Uplink Assignment. The USF shall be assigned once more to the MS.NOTE: The empty LLC PDU may be accompanied by another low priority RLC data block (with Packet Resource Request and Packet Uplink Assignment or Packet Timeslot Reconfigure as required), in order to ensure that the radio resources are used efficiently.
17	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH. On the new cell.
18	SS -> MS	10 RLC data block	SS sends data, last block is polling.

19a	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
19b	MS -> SS	PACKET MEASUREMENT REPORT	
20	SS->MS		USF assigned to the MS in step 13
		PACKET UPLINK ACK/NACK	
21a	MS -> SS	RLC data block	MS sends data.
21b	MS->SS	PACKET MEASUREMENT REPORT	
22	SS		Repeat steps 18-21 until measurement results for cell A are included in the PACKET MEASUREMENT REPORT message
23	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains –BSIC + BCCH frequency -The network control order – NC2 -USF IMMEDIATE_REL bit is not set. See specific message contents. USF assigned to the MS in step 13
24a	MS -> SS	RLC data block	MS sends data.
24b	MS->SS	PACKET MEASUREMENT REPORT	
25	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH. USF assigned to the MS in step 13
26			Steps 24 and 25 are optional and can be repeated, but not more than 5 seconds.
27		{ Uplink dynamic allocation one phase access with contention resolution } or {Uplink dynamic allocation two phase access}	Macro parameters: USF_GRANULARITY: 1 RLC_DATA_BLOCKS_GRANTED: absent (open-end) CHANNEL_CODING_COMMAND: CS-1 LLI_BLOCK_CHANNEL_CODING: CS-1 USF assigned to the MS in step 27
28	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The SS shall accept here or later in the sequence a Measurement Report sent by the MS due to expiry of T3158. The USF shall be assigned once more to the MS.
29	MS -> SS	RLC data block	MS sends data. The RLC data also serves as cell update.
30	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
31	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH. On the new cell.
32	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
33	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
34	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS in step 27 If the first received RLC Data Block in current TBF contain an empty LLC PDU, The SS shall accept Packet Resource Request from MS and respond with Packet Uplink Assignment or Packet Timeslot Reconfigure. The USF shall be assigned once more to the MS. NOTE: The empty LLC PDU may be accompanied by another low priority RLC data block (with Packet Resource Request and Packet Uplink Assignment or Packet Timeslot Reconfigure as required), in order to ensure that the radio resources are used efficiently.
35a	MS -> SS	RLC data block	MS sends data.
35b	MS -> SS	PACKET MEASUREMENT REPORT	
36	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Note: in step 6x, 9x, 19x, 21x, 24x and 35x, the MS shall perform **either** the ‘a’ branch **or** the ‘b’ branch.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

Global TFI	TFI of the uplink TBF
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	010 (1.92 sec)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE ORDER in Step 11:

Global TFI	TFI of the uplink TBF
IMMEDIATE_REL	1 (Immediate abort of operation in the old cell is required.)
ARFCN, BSIC	Specified for cell B
NC measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	011 (3.84 sec)
NC_FREQUENCY_LIST	0 (not present)

PACKET CELL CHANGE ORDER in Step 23:

Global TFI	TFI of the uplink TBF
IMMEDIATE_REL	0 (No immediate abort of operation in the old cell is required)
ARFCN, BSIC	Specified for cell A
NC measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	100 (7.68 sec)
NC_FREQUENCY_LIST	0 (not present)

42.4.2.3.2 Void

42.4.2.3.3 Void

42.4.2.3.4 Packet Measurement order procedure / Downlink transfer / Normal case/ Routing Area Update/ NMO II

42.4.2.3.4.1 Conformance requirement

The cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message to the mobile station on the PCCCH or PACCH. Upon receipt of the PACKET CELL CHANGE ORDER message the mobile station shall start timer T3174.

When a cell reselection is made controlled by the network, the mobile station shall act upon the IMMEDIATE_REL value which has been received in the Packet Cell Change Order: if required, the mobile station shall abort any TBF in progress by immediately ceasing to decode the downlink, ceasing to transmit on the uplink, stopping all RLC/MAC timers except for timers related to measurement reporting. The mobile station shall then switch to the identified specified new cell and shall obey the relevant RLC/MAC procedures on this new cell.

To initiate the normal routing area updating procedure, the MS sends the message ROUTING AREA UPDATE REQUEST to the network, starts timer T3330 and changes to state GMM-ROUTING-AREA-UPDATING-INITIATED. The message ROUTING AREA UPDATE REQUEST shall contain the P-TMSI signature when received within a previous ATTACH ACCEPT or ROUTING AREA UPDATE ACCEPT message.

If the routing area updating request has been accepted by the network, a ROUTING AREA UPDATE ACCEPT message shall be sent to the MS. The network may assign a new P-TMSI and/or a new P-TMSI signature for the MS. If

a new P-TMSI and/or P-TMSI signature have been assigned to the MS, it/they shall be included in the ROUTING AREA UPDATE ACCEPT message together with the routing area identification.

References

3GPP TS 04.60, subclauses 8.4 and 5.5.1.1.

3GPP TS 04.08 / 3GPP TS 24.008 subclause 4.7.5.1.

42.4.2.3.4.2 Test Purpose

To test the behaviour of the MS when the network triggers a Packet Cell Change Order to a cell belonging to another routing area, whereas the network mode of operation II is active, i.e.:

- To verify that the cell change order procedure is started when the MS receives a PACKET CELL CHANGE ORDER message.
- To verify that the MS switches to the new cell.
- To verify that the MS uses the established downlink TBF on the new cell.
- To verify that the MS performs the Normal Routing Area Update procedure.

42.4.2.3.4.3 Method of test

Initial conditions

System simulator:

2 cells, GPRS supported, Carrier 1 is active, at -60dBm. Carrier 2 is on, at low level -70dBm (in order to prevent sync reading suspension due to unsuccessful synchronization attempts). PBCCH is not present on Cell A (Carrier 1), and not present on Cell B (Carrier 2). NETWORK_CONTROL_ORDER is set to NC0, and Network Mode of Operation is set to NMO 2, on both Carrier 1 and Carrier 2. Cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in Transfer mode on carrier 2.

Test procedure

The MS is brought into downlink packet transfer mode on carrier 1 in Cell A. The SS sends a PACKET MEASUREMENT ORDER message, setting NETWORK_CONTROL_ORDER to NC2. The SS raises carrier 2 (Cell B) with higher RF signal strength than carrier 1. The MS shall stay camping in the cell A.

During the transfer, the SS sends a PACKET CELL CHANGE ORDER message. The MS shall reselect carrier 2, MS will send a ROUTING AREA UPDATE REQUEST message and SS establishes a new downlink TBF

The SS accepts the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI. Further communication MS - SS is performed by the P-TMSI.

NOTE: During the UL TBF, T3158 may expire and thus PACKET MEASUREMENT REPORT is sent there. The SS shall be prepared for this.

Maximum duration of the test

4 minutes

Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is GPRS attached and has activated a PDP context (see PICS) on carrier 1.
2	SS -> MS	IMMEDIATE ASSIGNMENT	sent on a PCH block corresponding to the MS's paging group, including a packet downlink assignment Triggers the MS to monitor the assigned PDCH.
3	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH of carrier 1 PMO message contains Network Control Order set to NC2 and NC_REPORTING_PERIOD_T set to 0.48s. The SS shall accept PACKET MEASUREMENT REPORT messages during the TBF, while the MS is in NC2 mode.
4	SS->MS	12 RLC data blocks	SS sends data, the last block contains a valid RRB. P.
5	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
6	SS->MS	12 RLC data blocks	SS sends data, the last block contains a valid RRB. P.
7	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
8	SS->MS	12 RLC data blocks	SS sends data, the last block contains a valid RRB. P.
9a	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
9b	MS->SS	PACKET MEASUREMENT REPORT	At NC_REPORTING_PERIOD_T expiry instead of PACKET DOWNLINK ACK/NACK, the MS sends the PACKET MEASUREMENT REPORT, which contains the "NC measurement report struct", on the PACCH.
10			Repetition of steps 8 and 9 until Measurement for Cell B are included in PACKET MEASUREMENT REPORT message.
11	SS		Raise the carrier 2 level to -50dBm
12			The MS still camps on carrier 1 and remains in Packet Transfer Check that no CHANNEL REQUEST is received on cell B.
13	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency Network control order = NC2
14	MS->SS	CHANNEL REQUEST	To the new cell.
15	SS->MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Assigning a uplink TBF.
16	MS -> SS	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Routing area identity = RAI-1
17	SS->MS	IMMEDIATE ASSIGNMENT	Sent on CCCH. On the new cell. Assigns a Downlink TBF. Addressing the MS with TLLI.
18	SS -> MS	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Routing area identity = RAI-2
19a	MS->SS	CHANNEL REQUEST	Received on RACH.
19b	SS->MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Assigning a uplink TBF.
20	MS -> SS	ROUTING AREA UPDATE COMPLETE	
21	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on PCH. Addressing the MS with TLLI.
22	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
23	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.

NOTE: 9b is chosen depending at NC_REPORTING_PERIOD_T expiry, otherwise 9a is chosen.

Specific message contents

PACKET MEASUREMENT ORDER in step 3:

PACKET MEASUREMENT ORDER message content: NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_T	0010 (NC2) 000 (0.48s)
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42.4.2.3.5 Packet Measurement order procedure / Downlink transfer / Normal case/ Routing Area Update/ NMO I

42.4.2.3.5.1 Conformance requirement

The cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message to the mobile station on the PCCCH or PACCH. Upon receipt of the PACKET CELL CHANGE ORDER message the mobile station shall start timer T3174.

When a cell reselection is made controlled by the network, the mobile station shall act upon the IMMEDIATE_REL value which has been received in the Packet Cell Change Order: if required, the mobile station shall abort any TBF in progress by immediately ceasing to decode the downlink, ceasing to transmit on the uplink, stopping all RLC/MAC timers except for timers related to measurement reporting. The mobile station shall then switch to the identified specified new cell and shall obey the relevant RLC/MAC procedures on this new cell.

To initiate a combined routing area updating procedure the MS sends the message ROUTING AREA UPDATE REQUEST to the network, starts timer T3330 and changes to state GMM-ROUTING-UPDATING-INITIATED and MM LOCATION UPDATING PENDING. The value of the update type IE in the message shall indicate "combined RA/LA updating". If for the last attempt to update the registration of the location area a MM specific procedure was performed, the value of the update type IE in the ROUTING AREA UPDATE REQUEST message shall indicate "combined RA/LA updating with IMSI attach". Furthermore the MS shall include the TMSI status IE if no valid TMSI is available.

References

3GPP TS 04.60, subclauses 8.4 and 5.5.1.1.

3GPP TS 04.08 / 3GPP TS 24.008 subclause 4.7.5.2.

42.4.2.3.5.2 Test Purpose

To test the behaviour of the MS when the network triggers a Packet Cell Change Order to a cell belonging to another routing area, whereas the network mode of operation 1 is active, i.e.:

To verify that the cell change order procedure is started when the MS receives a PACKET CELL CHANGE ORDER message.

To verify that the MS switches to the new cell.

To verify that the MS uses the established downlink TBF on the new cell.

To verify that the MS performs the Combined Routing Area Update procedure.

42.4.2.3.5.3 Method of test

Initial conditions

System simulator:

2 cells, GPRS supported, Carrier 1 is active, at -60dBm. Carrier 2 is on, at low level -70dBm (in order to prevent sync reading suspension due to unsuccessful synchronization attempts). NETWORK_CONTROL_ORDER is set to NC0, and Network Mode of Operation is set to NMO I, on both Carrier 1 and Carrier 2. Cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.

Mobile Station:

MS is in Packet Idle mode and GPRS attached (P-TMSI 1, P-TMSI signature 1). Ready timer deactivated.

PDP context established.

Specific PICS Statements

- MS operation mode A (TSPC_operation_mode_A)
- MS operation mode B (TSPC_operation_mode_B)
- MS operation mode C (TSPC_operation_mode_C)

PIXIT Statements

-

Foreseen final state of the MS

- MS is in Transfer mode on carrier 2.

Test procedure

The MS is brought into downlink packet transfer mode on carrier 1 in Cell A. The SS sends a PACKET MEASUREMENT ORDER message, setting NETWORK_CONTROL_ORDER to NC2. The SS raises carrier 2 (Cell B) with higher RF signal strength than carrier 1. The MS shall stay camping in the cell A.

During the transfer, the SS sends a PACKET CELL CHANGE ORDER message. The MS shall reselect carrier 2.

In Cell B, the MS sends a ROUTING AREA UPDATE REQUEST message. The SS accepts the P-TMSI signature and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI nor any new TMSI but Force to Standby set. Further communication MS-SS is performed by the old P-TMSI.

NOTE: during the UL TBF, T3158 may expire and thus PACKET MEASUREMENT REPORT is sent there. The SS shall be prepared for this.

Maximum duration of the test

4 minutes

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to monitor the assigned PDCH, establish a downlink TBF.
2	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH of carrier 1 PMO message contains Network Control Order set to NC2 and NC_REPORTING_PERIOD_T set to 0.96s. The SS shall accept PACKET MEASUREMENT REPORT messages during the TBF, while the MS is in NC2 mode.
3	SS->MS	12 RLC data blocks	SS sends data, the last block contains a valid RRBP.
4	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
5	SS->MS	12 RLC data blocks	SS sends data, the last block contains a valid RRBP.
6	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
7	SS->MS	12 RLC data blocks	SS sends data, the last block contains a valid RRBP.
8a	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
8b	MS->SS	PACKET MEASUREMENT REPORT	At NC_REPORTING_PERIOD_T expiry instead of PACKET DOWNLINK ACK/NACK, the MS sends the PACKET MEASUREMENT REPORT, which contains the "NC measurement report struct", on the PACCH.
9			Repeat steps 7 and 8 until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message.
10	SS		Raise the carrier 2 level to -50dBm
11			The MS still camps on carrier 1 and remains in Packet Transfer
12	SS->MS	PACKET CELL CHANGE ORDER	Check that no CHANNEL REQUEST is received on cell B. Sent on the PACCH. Contains -BSIC + BCCH frequency Network control order = NC2 The following messages are to be sent and received in Cell B.
13	MS -> SS	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' (for operation mode A or operation mode B) Update type = 'RA updating' (for operation mode C) P-TMSI-1 signature Routing area identity = RAI1
14	SS -> MS	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' (for operation mode A or operation mode B) Update result = 'RA updated' (for operation mode C) No P-TMSI No TMSI Routing area identity = RAI-2 Negotiated Ready Timer not included Force to standby IE set
15	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on PCH establish downlink TBF. On the new cell. Addressing the MS with TLLI derived from P- TMSI-1. Triggers the MS to monitor the assigned PDCH.
16	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
17	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.

Note: 8b is chosen depending on NC_REPORTING_PERIOD_T expiry, otherwise 8a is chosen.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

PACKET MEASUREMENT ORDER message content: NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_T	0010 (NC2) 001 (0.96s)
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42.4.2.3.6 MT CS establishment whilst in NC2 with a downlink TBF established

42.4.2.3.6.1 Conformance requirements

The behaviour of the mobile station is controlled by the NETWORK_CONTROL_ORDER parameter in a PACKET MEASUREMENT ORDER message. The reporting periods are indicated in the NC_REPORTING_PERIOD_T field of the PACKET MEASUREMENT ORDER message. The mobile station shall apply to the timer T3158 the NC_REPORTING_PERIOD_T when in packet transfer mode.

The procedure for NC measurement report sending shall be initiated by the mobile station at the expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the timer T3158, perform the measurements and send the PACKET MEASUREMENT REPORT message containing the 'NC measurement report struct' on PACCH.

Paging initiation using PACCH applies when sending a paging request message to a mobile station that is GPRS attached, when the mobile station is in packet transfer mode and the network is able to co-ordinate the paging request with the radio resources allocated for the mobile station on a PDCH. This kind of paging co-ordination shall be provided in network mode of operation I (see 3G TS 23.060). This kind of paging co-ordination may be provided also in network mode of operation II or III. This kind of paging co-ordination shall be provided if the network supports DTM.

When the mobile station responds to a paging request for RR connection establishment, it shall follow the paging response procedures as specified in 3GPP TS 04.18. For that purpose, a mobile station in packet transfer mode or a mobile station that has initiated a packet access procedure may abort any ongoing TBF or the packet access procedure in the following two cases:

- The mobile station requires that the BSS co-ordinates the allocation of radio resources for an RR connection and a simultaneous TBF (GPRS class A mode of operation by means of DTM).

References

3GPP TS 04.60/44.060, sub-clauses 6.1.3, 6.1.4.

3GPP TS 04.60, subclauses 5.6.1 and 8.3.

42.4.2.3.6.2 Test purpose

To verify that the MS sends the measurement report of the NC measurements according to the indicated reporting periods, when the T3158 expires. To verify that the MS reacts to CS paging on the PACCH, whilst the MS was in packet transfer mode and NC2, by releasing the downlink TBF and then establishing an RR connection.

42.4.2.3.6.3 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, NMO I activated, CTRL_ACK_TYPE=0 in SI13.

Mobile Station:

The MS is in packet idle mode, with a TMSI, P-TMSI allocated and PDP context 1 activated.

Specific PICS Statements

- GPRS Release Supported (TSPC_MS_GPRS_RELEASE)
- Support of Immediate Connect (TSPC_AddInfo_ImmConn)

PIXIT Statements

-

Test Procedure

The MS is brought into packet transfer mode. SS sends a PACKET MEASUREMENT ORDER message. SS sends continuously data blocks and regularly polls so that PACKET MEASUREMENT REPORT messages are sent by the MS according to the indicated reporting period, before being paged on the PACCH. Upon receipt of the PACKET PAGING REQUEST message, the MS returns to packet idle mode and initiate the establishment of CS connection.

NOTE: carrier 2 is activated in order to prevent synchronisation reading suspension due to unsuccessful synchronization attempts.

Maximum Duration of Test

5 minutes

Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is GPRS attached and has activated a PDP context (see PICS) on carrier 1.
2	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to monitor the assigned PDCH with a valid RRBP.
3	MS -> SS	PACKET CONTROL ACK	Sent in the block specified by RRBP field in step 2 as four access bursts
4	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH of carrier 1 PMO message contains Network Control Order set to NC2 and NC_REPORTING_PERIOD_T set to 0.48s.
5	SS->MS	12 RLC data blocks	SS sends data, the last block contains a valid RRBP.
6	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
7	SS->MS	12 RLC data blocks	SS sends data, the last block contains a valid RRBP.
8	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
9	SS->MS	12 RLC data blocks	SS sends data, the last block contains a valid RRBP.
10a	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
10b	MS->SS	PACKET MEASUREMENT REPORT	At NC_REPORTING_PERIOD_T expiry instead of PACKET DOWNLINK ACK/NACK, the MS sends the PACKET MEASUREMENT REPORT, which contains the "NC measurement report struct", on the PACCH.
11			Repetition of steps 9 and 10 during 5s
12			Raise carrier 2 changing the carrier level to -70dBm
13	SS->MS	PACKET PAGING REQUEST	1 st Repeated Page info contains IMSI of the MS, PAGE_MODE = " same as before ", sent on downlink PACCH.
14	MS->SS	CHANNEL REQUEST	
15	SS->MS	IMMEDIATE ASSIGNMENT	
16	MS->SS	PAGING RESPONSE	
17	MS -> SS	CLASSMARK CHANGE	This step may be optionally performed by a R97 or R98 MS; this step shall be mandatorily performed by R99 and later MS.
18	MS -> SS	GRPS SUSPENSION REQUEST	
19	SS -> MS	AUTHENTICATION REQUEST	
20	MS -> SS	AUTHENTICATION RESPONSE	
21	SS -> MS	CIPHERING MODE COMMAND	
22	MS -> SS	CIPHERING MODE COMPLETE	
23	SS->MS	SETUP	
24	MS->SS	CALL CONFIRMED	

			If the MS supports immediate connect then branch A applies. If the MS does not support immediate connect then branch B applies
A25	MS->SS	CONNECT	Sent on the old channel
A26	SS->MS	ASSIGNMENT COMMAND	Timeslot N (chosen arbitrarily)
A27	MS->SS	ASSIGNMENT COMPLETE	Continues at step 31
B25	SS->MS	ASSIGNMENT COMMAND	Timeslot N (chosen arbitrarily)
B26	MS->SS	ASSIGNMENT COMPLETE	Sent on the new channel
B27	MS->SS	ALERTING	
B28	MS		An alerting indication is given by the MS
B29	MS		The MS is made to accept the call
B30	MS->SS	CONNECT	
31	SS->MS	CONNECT ACKNOWLEDGE	
32	MS		The appropriate bearer channel is through connected in both directions

Specific Message Contents

None.

42.4.2.3.7 MT CS establishment whilst in NC2 with a uplink TBF established

42.4.2.3.7.1 Conformance requirements

The behaviour of the mobile station is controlled by the NETWORK_CONTROL_ORDER parameter in a PACKET MEASUREMENT ORDER message. The reporting periods are indicated in the NC_REPORTING_PERIOD_T field of the PACKET MEASUREMENT ORDER message. The mobile station shall apply to the timer T3158 the NC_REPORTING_PERIOD_T when in packet transfer mode.

The procedure for NC measurement report sending shall be initiated by the mobile station at the expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the timer T3158, perform the measurements and send the PACKET MEASUREMENT REPORT message containing the 'NC measurement report struct' on PACCH.

Paging initiation using PACCH applies when sending a paging request message to a mobile station that is GPRS attached, when the mobile station is in packet transfer mode and the network is able to co-ordinate the paging request with the radio resources allocated for the mobile station on a PDCH. This kind of paging co-ordination shall be provided in network mode of operation I (see 3G TS 23.060). This kind of paging co-ordination may be provided also in network mode of operation II or III. This kind of paging co-ordination shall be provided if the network supports DTM.

When the mobile station responds to a paging request for RR connection establishment, it shall follow the paging response procedures as specified in 3GPP TS 04.18. For that purpose, a mobile station in packet transfer mode or a mobile station that has initiated a packet access procedure may abort any ongoing TBF or the packet access procedure in the following two cases:

- The mobile station requires that the BSS co-ordinates the allocation of radio resources for an RR connection and a simultaneous TBF (GPRS class A mode of operation by means of DTM).

References

3GPP TS 04.60/44.060, sub-clauses 6.1.3, 6.1.4

3GPP TS 04.60, subclauses 5.6.1 and 8.3.

42.4.2.3.7.2 Test purpose

To verify that the MS sends packet measurement reports of the NC measurements according to the indicated reporting periods when T3158 expires. To verify that the MS reacts to CS paging on the PACCH, whilst the MS was in packet transfer mode and NC2, by releasing the uplink TBF and then establishing the RR connection.

42.4.2.3.7.3 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, NMO I activated.

Mobile Station:

The MS is in packet idle mode, with a TMSI, P-TMSI allocated and PDP context 2 activated.

NOTE: carrier 2 is activated in order to prevent synchronisation reading suspension due to unsuccessful synchronization attempts.

Specific PICS Statements

- GPRS Release Supported (TSPC_MS_GPRS_RELEASE)
- Support of Immediate Connect (TSPC_AddInfo_ImmConn)

Foreseen final state of the MS

- MS is in RR dedicated mode.

Test Procedure

The MS is brought into packet transfer mode. SS sends a PACKET MEASUREMENT ORDER message. MS sends continuously data blocks and PACKET MEASUREMENT REPORT messages according to the indicated reporting period, before being paged on the PACCH. Upon receipt of the PACKET PAGING REQUEST message, the MS returns to packet idle mode and initiates the establishment of a CS connection.

Maximum Duration of Test

10 minutes

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	Macro parameters: n: 1000 octets USF_GRANULARITY: 1 block RLC_DATA_BLOCKS_GRANTED: absent (open-end) CHANNEL_CODING_COMMAND: CS-1 TLLI_BLOCK_CHANNEL_CODING: CS-1 TBF_STARTING_TIME: Without
2	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH of carrier 1 PMO message contains Network Control Order set to NC2 and NC_REPORTING_PERIOD_T set to 1.92s. USF assigned to the MS
3	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	
4a	MS -> SS	RLC data block	MS sends data
4b	MS -> SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
5	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH
6			Steps 4 to 6 are repeated until at least two PACKET MEASUREMENT REPORTs are received.. SS verifies that the time interval between two consecutive PACKET MEASUREMENT REPORTs is as per NC_REPORTING_PERIOD_T of PMO sent in Step 2.
7	SS->MS	PACKET PAGING REQUEST	1 st Repeated Page info contains IMSI of the MS PAGE_MODE = " same as before ", sent on downlink PACCH
8	MS->SS	CHANNEL REQUEST	
9	SS->MS	IMMEDIATE ASSIGNMENT	
10	MS->SS	PAGING RESPONSE	
11	MS -> SS	CLASSMARK CHANGE	This step may be optionally performed by a R97 or R98 MS; this step shall be mandatorily performed by a R99 or later MS
12	MS -> SS	GRPS SUSPENSION REQUEST	
13	SS -> MS	AUTHENTICATION REQUEST	
14	MS -> SS	AUTHENTICATION RESPONSE	
15	SS -> MS	CIPHERING MODE COMMAND	
16	MS -> SS	CIPHERING MODE COMPLETE	
17	SS->MS	SETUP	
18	MS->SS	CALL CONFIRMED	If the MS supports immediate connect then branch c applies. If the MS does not support immediate connect then branch d applies
19c	MS->SS	CONNECT	Sent on the old channel
20c	SS->MS	ASSIGNMENT COMMAND	Timeslot N (chosen arbitrarily).
21c	MS->SS	ASSIGNMENT COMPLETE	Sequence continues on step 25
19d	SS->MS	ASSIGNMENT COMMAND	Timeslot N (chosen arbitrarily).
20d	MS->SS	ASSIGNMENT COMPLETE	Sent on the new channel
21d	MS->SS	ALERTING	
22d	MS		An alerting indication as defined in a PICS/PIXIT statement is given by the MS
23d	MS		The MS is made to accept the call in the way described in a PICS/PIXIT statement
24d	MS->SS	CONNECT	
25	SS->MS	CONNECT ACKNOWLEDGE	
26	MS		The appropriate bearer channel is through connected in both directions.

Note: in step 4x, the MS shall perform either the 'a' branch or the 'b' branch.

Specific Message Contents

None.

42.4.3 Macros and Default Message contents

42.4.3.1 Macros

In order to simplify the process of writing and coding test cases, macros are referenced in the expected signalling tables. These macros provide all additional signalling needed to complete the particular test but are not relevant to its purpose.

42.4.3.1.1 Void

42.4.3.1.2 Void

42.4.3.2 Default Messages

42.4.3.2.1 PACKET CELL CHANGE ORDER message

MESSAGE_TYPE	0000 01
PAGE_MODE	00 Normal Paging
Referenced Address	
-	10 (address is TLLI)
- TLLI	same as the value received from MS
IMMEDIATE_REL	1 (Immediate release of the on-going TBF.)
ARFCN	For GSM 900: 00 0001 0100 (ARFCN 20) For DCS 1 800 and PCS 1 900: 10 0100 1110 (ARFCN 590) For GSM 700, T-GSM 810: 01 1100 1001 (ARFCN 457) For GSM 850: 00 1001 0011 (ARFCN 147)
BSIC	For GSM 700, T-GSM 810, GSM 850 and GSM 900: 001101 For DCS 1 800 and PCS 1 900: 001101
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	0 0 NC0
{ 0 1 < NC_NON_DRX_PERIOD	0 No additional NC parameters
< NC_REPORTING_PERIOD_I	
< NC_REPORTING_PERIOD_T }	
NC Frequency list struct	
{ 0 1 < NC_FREQUENCY_LIST }	0 No NC_FREQUENCY_LIST
< padding bits >	Spare Padding

42.4.3.2.2 PACKET CELL CHANGE FAILURE message

MESSAGE_TYPE	0000 00
TLLI	same as the value received from MS
ARFCN	For GSM 900: 00 0001 0100 (ARFCN 20) For DCS 1 800 and PCS 1 900: 10 0100 1110 (ARFCN 590) For GSM 700, T-GSM 810: 01 1100 1001 (ARFCN 457) For GSM 850: 00 1001 0011 (ARFCN 147)
BSIC	For GSM 700, T-GSM 810, GSM 850 and GSM 900: 001101 For DCS 1 800 and PCS 1 900: 001101
CAUSE	0 0 0 1 No response on target cell
spare padding	Spare Padding

42.4.3.2.3 PACKET MEASUREMENT ORDER message

MESSAGE_TYPE	0000 11
PAGE_MODE	00 Normal Paging
TLLI	10 (address is TLLI)
-	Same as the value received from MS
PMO_INDEX	0 0 0 first message
PMO_COUNT	0 0 0 one message expected
{ 0 1 < NC Measurement Parameters }	1 NC Measurement Parameters available
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	0 1 NC1
{ 0 1 < NC_NON_DRX_PERIOD	1 Additional NC parameters available
< NC_REPORTING_PERIOD_I	NC_NON_DRX_PERIOD = 000
< NC_REPORTING_PERIOD_T }	(No non-DRX mode after a measurement report has been sent)
	NC_REPORTING_PERIOD_I = 111
	(61.44 sec)
	NC_REPORTING_PERIOD_T = 011
	(3.84 sec)
{ 0 1 < NC_FREQUENCY_LIST }	0 No NC Frequency list struct available
< padding bits >	Spare Padding

42.4.4 Cell Change Order Procedures without PBCCH

42.4.4.1 Network Controlled Cell Reselection – Packet Measurement Order Procedure

42.4.4.1.1 Conformance requirement

A cell re-selection command may be sent from the network to an MS. When the MS receives the command, it shall immediately re-select the cell according to the included cell description and change the network control mode according to the command.

Reference:

3GPP TS 04.60 subclause 8.4.0.

3GPP TS 05.08 subclause 10.1.4.2.

42.4.4.1.2 Test purpose

To verify that when the Network initiates the Packet Measurement Order Procedure, the MS correctly interprets the Packet Measurement Order Message, changes the network control mode and acts accordingly.

42.4.4.1.3 Method of test

Initial conditions

Parameter	Carrier1	Carrier2	Carrier3
RF Signal Level (dBm)	-70	-80	-50
GPRS_RXLEV_ACCE SS_MIN	-100	-100	-100
NETWORK_CONTROL_ORDER	NC2	NC2	NC2
C1	30	20	50
C2	30	20	50

System simulator:

3 cells, GPRS supported, PBCCH not present (Carrier 1 & 2 is active. Carrier 3 is off).

Mobile Station:

MS is GPRS attached on carrier 1 (with Ready timer value unit set to '111' in the ATTACH ACCEPT message, thus the MS is always in Ready state).

Specific PICS Statements

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PIXIT Statements

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Test Procedure

The SS establishes single block down link TBF and then initiates the Packet Measurement Order Procedure on carrier 1 with the Packet Measurement Order (PMO) changing NC2 to NC0. The MS shall reselect to carrier 3 and initiate channel request procedure.

The SS shall accept PACKET MEASUREMENT REPORT from the MS anytime during GPRS attach procedure

Expected Sequence

Step	Direction	Message	Comments
1	SS		Activate carrier 3
2 (optional step)	MS->SS	CHANNEL REQUEST	ACCESS TYPE ='Single block without TBF establishment.' Received on RACH carrier 1.
3(optional step)	SS->MS	IMMEDIATE ASSIGNMENT	Sent on AGCH, assigning a single block carrier 1.
4(optional step)	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH.
5	SS->MS	IMMEDIATE ASSIGNMENT	SS establishes a single block down link TBF on carrier 1.
6	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH of carrier 1. PMO message contains Network Control Order 0
7	MS->SS	CHANNEL REQUEST	Verify MS sends channel request on carrier 3 within 30 s of step 6.
8	SS->MS	IMMEDIATE ASSIGNMENT REJECT.	Network sends immediate assignment reject on carrier 3.

42.4.4.2 Network Controlled Cell Reselection/validity of reselection parameters/MS enters standby state

42.4.4.2.1 Conformance requirement

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to MS., there is a downlink signalling failure or the MS enters Standby State.

Reference:

3GPP TS 05.08 subclause 10.1.4.

42.4.4.2.2 Test purpose

To verify that the measurement reporting parameters are valid till the MS enters the standby state.

42.4.4.2.3 Method of test

Initial conditions

Parameter	Carrier1	Carrier2
RF Signal Level (dBm)	-80	-70
GPRS_RXLEV_ACCE SS_MIN	-100	-100
NETWORK_CONTRO L_ORDER	NC0	NC2
C1	20	30
C32	20	30

System simulator:

2 cells (cell A, cell B), GPRS supported, PBCCH not present (Carrier 1 is active. Carrier 2 is off)

Mobile Station:

MS is off.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

The SS establishes single block down link TBF and then initiates the Packet Measurement Order Procedure on carrier 1 with the Packet Measurement Order (PMO) changing NC0 to NC2. The SS activates carrier 2 with higher RF signal strength than carrier 1. After the Ready Timer expires in the mobile, the MS shall reselect carrier 2 as NC2 is not applicable in standby mode.

Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is powered up or switched on and initiates an attach.
2	MS -> SS	ATTACH REQUEST	
3	SS -> MS	ATTACH ACCEPT	Ready timer set to 60 s. Mobile identity = P-TMSI-1 P-TMSI-1 signature
4	MS->SS	ATTACH COMPLETE	Apply the new Ready Timer value.
5	SS->MS	IMMEDIATE ASSIGNMENT	SS establishes a single block downlink assignment procedure on carrier 1.
6	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH of carrier 1 PMO message contains Network Control Order 2
7	SS		Activate carrier 2
8	SS		Wait for 30 s
9	SS->MS	PAGING REQUEST TYPE 1	MS paged continuously on carrier 2
10	SS		Verify no response from MS on carrier 2 for 25 seconds.
11	SS		Wait for 36 s
12	SS-> MS	PAGING REQUEST TYPE 1	MS paged on carrier 2
13	MS -> SS	CHANNEL REQUEST	Verify MS has camped on carrier 2

Specific message contents

PACKET MEASUREMENT ORDER in step 6:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	010 (1.92 sec)
NC_FREQUENCY_LIST	0 (not present)

42.4.4.3 Network Control measurement reporting / Idle mode / Returning to Broadcast parameters

42.4.4.3.1 Conformance requirement

The procedure for NC measurement report sending shall be initiated by the mobile station at the expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the timer T3158, perform the measurements and send the PACKET MEASUREMENT REPORT message containing the 'NC measurement report struct' on PACCH.

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to the MS or there is a downlink signalling failure or the MS goes to the Standby state.

Reference

3GPP TS 04.60, subclauses 8.1.2.2, 8.3 and 5.6.1.

3GPP TS 05.08, subclause 10.1.4

42.4.4.3.2 Test Purpose

To verify that individual parameters are valid only until the MS goes to Stand-by State. MS returns to broadcast parameters once it enters the Stand-by State and uses the broadcast parameters if it again goes to ready state.

42.4.4.3.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated

PDP context 2 established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

SS assigns a single block downlink TBF to MS and sends PACKET MEASUREMENT ORDER changing the NC mode from NC0 to NC2. SS then receives PACKET MEASUREMENT REPORTS until the READY TIMER expires. SS then waits for 30 sec and checks that the MS is not sending any more PACKET MEASUREMENT REPORTS. SS pages the MS to bring the MS into ready state and receives the page response by giving the uplink TBF. SS then assigns a downlink TBF and checks that the MS is not sending any PACKET MEASUREMENT REPORTS.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	SS establishes a single block downlink TBF.
2	SS -> MS	PACKET MEASUREMENT ORDER	Sent on the blocks assigned in step 1. PMO message contains Network Control Order 2 (See the specific message content)
3	MS -> SS	CHANNEL REQUEST	With establishment cause 'single block access'. After the second execution of the step: SS verifies that CHANNEL REQUEST arrives after NC_REPORTING_PERIOD_I from last measurement report.
4	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 1seconds.
5	MS -> SS	PACKET MEASUREMENT REPORT	Received on the assigned block.
6	SS		Steps 3-5 are repeated until the expiry of READY TIMER.
7	SS		SS waits for 30 sec, checks that the MS is not sending any more measurement reports.
8	SS -> MS	PAGING REQUEST TYPE 1	Page info contains P-TMSI of the MS. Sent on PCH.
9	MS->SS	CHANNEL REQUEST	Establishment cause = "One phase access". Received on RACH.
10	SS -> MS	IMMEDIATE ASSIGNMENT	Random Reference = pertaining to the message received in step 9. Dynamic allocation for RLC data blocks, Sent on AGCH.
11	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
12	MS -> SS	UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating paging response, containing TLLI in the RLC/MAC header. Received on uplink PDTCH assigned in step 10.
13	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge the received RLC data block, with FAI=1, Containing contention resolution TLLI. Sent on uplink PACCH. Valid RRBP. Received on uplink PACCH.
14	MS ->SS	PACKET CONTROL ACKNOWLEDGEMENT	
15	SS -> MS	IMMEDIATE ASSIGNMENT	SS initiates a data transfer of 1000 octets. Sent on PCH. Downlink Assignment, TLLI value as received. Sent on PCH.
16	MS ->SS	Completion of macro {Downlink data transfer}	SS completes downlink transfer of 1000 octets of data. SS checks that the MS has not sent any PACKET MEASUREMENT REPORT during the TBF.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_I NC_REPORTING_PERIOD_T	10 (NC2) 100 (7.68 s) 000 (0.48 s)
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42.4.4.4 Void

42.4.4.5 Network Control measurement reporting / Idle mode / Reselection due to RA failure

42.4.4.5.1 Conformance Requirement

Having made $M + 1$ attempts to send a PACKET CHANNEL REQUEST (respectively EGPRS PACKET CHANNEL REQUEST) message, the mobile station shall stop timer T3186 and start timer T3170. At expiry of timer T3170, the packet access procedure shall be aborted, a random access failure shall be indicated to upper layer and the mobile station shall perform autonomous cell re-selection according to 3GPP TS 43.022.

The MS shall only perform autonomous cell re-selection when the reselection is triggered by a downlink signalling failure as defined in subclause 6.5 or a random access failure as defined in 3GPP TS 44.018 and 3GPP TS 44.060.

Reference

3GPP TS 44.060, subclause 3.5.2.1.2.

3GPP TS 45.008, subclause 10.1.4

42.4.4.5.2 Test Purpose

To verify that while in NC2, MS performs autonomous cell reselection when the reselection is triggered by the random access failure.

42.4.4.5.3 Method of test

Initial conditions

System Simulator:

2 cell, GPRS supported.

Parameter	Carrier1	Carrier2
RF Signal Level (dBm)	-60	-70
NETWORK_CONTROL_ORDER	NC2	NC2
NC_REPORTING_PERIOD_I	Default	Default

Mobile Station:

MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated. Ready timer is set to 5 min.

PDP context 2 established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

MS is in packet idle mode on carrier 1. MS sends a CHANNEL REQUEST for sending the measurement report. SS assigns resources for it. MS sends a PACKET MEASUREMENT REPORT. MS is triggered to send uplink data. MS sends $(MAX_RETRANS + 1)$ CHANNEL REQUESTs. SS does not respond to it. SS checks that after sending $M + 1$ channel requests MS does reselection and reselects to carrier 2.

Maximum duration of the test

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	SS establishes a single block downlink TBF. Sent on the blocks assigned in step 1. PMO message contains Network Control Order 2 (See the specific message content)
2	SS -> MS	PACKET MEASUREMENT ORDER	
3	MS->SS	CHANNEL REQUEST	With establishment cause 'single block access'. Sent on AGCH, assigning a single block. Received on the allocated PDCH. The SS verifies that the measurement results for cells A, B are included in it. Steps 3-5 repeated once again. SS Checks that the measurements of cell A and B are included in the PACKET MEASUREMENT REPORT. MS is triggered to send 1000 octets of uplink data. With establishment cause 'one phase access' or 'two phase access' With establishment cause 'one phase access' or 'two phase access' MS sends M+1 CHANNEL REQUESTS but SS does not respond to it. Received on cell B.
4	SS->MS	IMMEDIATE ASSIGNMENT	
5	MS ->SS	PACKET MEASUREMENT REPORT	
6			
7	SS		
8	MS		
9	MS -> SS	CHANNEL REQUEST	
10	MS ->SS	CHANNEL REQUEST	
11	SS		
12	MS -> SS	CHANNEL REQUEST	

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	110 (30.72 s)
NC_REPORTING_PERIOD_T	000 (0.48 s)

42.4.5 Network Assisted Cell Change

42.4.5.1 Network Assisted Cell Change / Expiry of T3206

42.4.5.1.1 Conformance requirements

[3GPP TS 44.060, 8.1.3]

If CCN is enabled (see subclause 5.5.1.1a, 3GPP TS 44.160 subclause 5.4.1.3), the mobile station shall behave as in network control mode NC0 or NC1 up to the point when a new cell has been chosen. It shall then check the CCN_SUPPORTED parameter, if available, that was last received for that cell. This parameter can be sent on BCCH or PBCCH or individually in PACKET MEASUREMENT ORDER or PACKET CELL CHANGE ORDER messages.

If it is available and if it indicates that CCN mode shall not be entered towards that cell, then the mobile station shall perform the cell change and not enter CCN mode.

If it is available and if it indicates that CCN mode shall be entered towards that cell or if it is not available, then instead of performing the cell change, the mobile station shall start timer T3206 and enter the CCN mode. At the first possible opportunity, the MS shall then, when in CCN mode, inform the network about the proposed cell by sending a PACKET CELL CHANGE NOTIFICATION message, stop timer T3206, start timers T3208 and T3210. The PACKET CELL CHANGE NOTIFICATION message shall contain the ARFCN for the BCCH and the BSIC as identity of the proposed cell. The message shall also contain measurement reports for the proposed cell and for other neighbour cells if available. In CCN mode the mobile station shall continue the data transfer and store neighbour cell system information if received in instances of the PACKET NEIGHBOUR CELL DATA message, but not

perform the cell change. At receipt of the first PACKET NEIGHBOUR CELL DATA message or PACKET CELL CHANGE CONTINUE message or PACKET CELL CHANGE ORDER message, the mobile station shall stop the timer T3210.

The mobile station shall retransmit the PACKET CELL CHANGE NOTIFICATION message once at the first possible opportunity when the timer T3210 expires.

The mobile station shall leave CCN mode when either CCN is no longer enabled (towards all neighbour cells with the CCN_ACTIVE bit or towards the cell that had been re-selected) or when the network has responded with a PACKET CELL CHANGE CONTINUE or PACKET CELL CHANGE ORDER message or when either of the timers T3206 or T3208 have expired.

References

3GPP TS 44.060, subclause 8.8.3

42.4.5.1.2 Test purpose

To verify that the MS leaves the CCN mode and continues cell reselection in NC0 mode when T3206 expires.

42.4.5.1.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported, CCN Active, PCCCH not present.

GPRS ready timer T3314 = infinity

Cell A: RLA_C = -50 dBm

Cell B: RLA_C = -60 dBm

Mobile Station:

MS is in Packet Idle mode, GPRS attached with support of GERAN Feature Package 1 indicated in MS Radio Access Capabilities, and PDP context 2 established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

SS establishes a downlink data transfer. SS then waits 4 seconds and lower the signal strength of Cell A to - 80 dBm. The MS will enter CCN mode, and when T3206 expires it will leave CCN mode and continue cell reselection in NC0 mode. The MS change cell and perform a Cell update in the new cell.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Downlink TBF establishment}	RLC mode: acknowledged, without starting time.
2	SS -> MS	DOWNLINK RLC DATA BLOCK	No valid RRBP
3	SS		SS waits 4 seconds.
4	SS -> MS	DOWNLINK RLC DATA BLOCK	No valid RRBP
5			Lower signal strength of Cell A to - 80 dBm.
6	SS		SS waits 4 seconds.
7	SS -> MS	DOWNLINK RLC DATA BLOCK	No valid RRBP
			Step 6 and 7 are repeated until the MS access Cell B, but no longer than for 15 seconds. The test has failed if the MS has not accessed Cell B within 15 sec from Step 5.
			The following messages are to be sent and received in Cell B.
8		{Uplink dynamic allocation one phase access}	USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
9		{Completion of uplink RLC data block transfer}	MS performs a Cell Update.

Specific message contents

None.

42.4.5.2 Network Assisted Cell Change / No Packet Neighbouring Cell Data and Packet Cell Change Continue

42.4.5.2.1 Conformance requirements

[3GPP TS 44.060, 8.1.1]

The mobile station shall transmit RLC/MAC blocks with the following priority:

- RLC/MAC control blocks containing a Packet Cell Change Notification message;
- Other RLC/MAC control blocks, except Packet Uplink Dummy Control Blocks;
- RLC data blocks;
- RLC/MAC control blocks containing Packet Uplink Dummy Control Blocks.

[3GPP TS 44.060, 8.1.2.2]

Whenever the mobile station receives an RLC data block addressed to itself and with a valid RRBP field in the RLC data block header (i.e., is polled), the mobile station shall transmit a PACKET DOWNLINK ACK/NACK message in the uplink radio block specified by the RRBP field whatever the BSN value of the received RLC data block, unless another RLC/MAC control message is waiting to be transmitted, in which case the other RLC/MAC control message shall be sent. Among the other RLC/MAC control blocks the PACKET CELL CHANGE NOTIFICATION message shall be sent with highest priority. However, the mobile station shall transmit an RLC/MAC control message other than a PACKET DOWNLINK ACK/NACK message at most every second time it is polled. Furthermore the mobile station shall not transmit an RLC/MAC control message other than a PACKET DOWNLINK ACK/NACK message if the PACKET DOWNLINK ACK/NACK message would contain a Final Ack Indicator or Channel Request Description IE. The mobile station shall not send a PACKET CONTROL ACKNOWLEDGEMENT message unless otherwise specified.

[44.060, 8.8.3]

After receiving a PACKET CELL CHANGE NOTIFICATION message from the mobile station the network can behave in different ways as described below.

1) The network responds with a PACKET CELL CHANGE CONTINUE message.

If a mobile station as response to a PACKET CELL CHANGE NOTIFICATION message receives a PACKET CELL CHANGE CONTINUE message without receiving any neighbour cell system information, the mobile station shall stop timer T3208, stop timer T3210 if still running, leave CCN mode and continue cell reselection in NC0/NC1 mode.

References

3GPP TS 44.060, subclause 8.1.1, 8.1.2.2 and 8.8.3

42.4.5.2.2 Test purpose

- 1) To verify that MS sends a PACKET CELL CHANGE NOTIFICATION when it enters CCN mode.
- 2) To verify that MS leaves CCN mode and continues cell reselection in NC0 mode when a PACKET CELL CHANGE CONTINUE is received when no PACKET NEIGHBOUR CELL DATA has been received.

42.4.5.2.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported, CCN Active, PCCCH not present.

GPRS ready timer T3314 = infinity

Cell A: RLA_C = -50 dBm

Cell B: RLA_C = -60 dBm

Mobile Station:

MS is in Packet Idle mode, GPRS attached with support of GERAN Feature Package 1 indicated in MS Radio Access Capabilities, and PDP context 2 established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

SS establishes a downlink TBF and sends 4 RLC data blocks, the last one containing FBI = 0 and a valid RRBP. The MS sends a PACKET DOWNLINK ACK/NACK. The signal strength of Cell A is lowered to -80 dBm. The downlink continues until MS sends PACKET CELL CHANGE NOTIFICATION. SS sends PACKET CELL CHANGE CONTINUE and verifies that the MS change to Cell B and does a Cell Update.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Downlink TBF establishment}	RLC mode: acknowledged, without starting time.
2	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=0 and a valid RRBP.
3	SS -> MS	DOWNLINK RLC DATA BLOCK	
4	SS -> MS	DOWNLINK RLC DATA BLOCK	
5	SS -> MS	DOWNLINK RLC DATA BLOCK	
6	MS -> SS	PACKET DOWNLINK ACK/NACK	
7			Received on the specified RRBP of downlink PACCH. Lower signal strength of Cell A to -80 dBm.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=0 and a valid RRBP.
9	SS -> MS	DOWNLINK RLC DATA BLOCK	
10	SS -> MS	DOWNLINK RLC DATA BLOCK	
11	SS -> MS	DOWNLINK RLC DATA BLOCK	
12	MS -> SS	PACKET DOWNLINK ACK/NACK Or PACKET CELL CHANGE NOTIFICATION	
13			Step 8 to 12 are repeated until a PACKET CELL CHANGE NOTIFICATION is received in step 12, but no longer than 15 sec. The test has failed if no PACKET CELL CHANGE NOTIFICATION is received in Cell A within 15 sec from Step 7.
14	SS -> MS	PACKET CELL CHANGE CONTINUE	
			The following messages are to be sent and received in Cell B.
15		{Uplink dynamic allocation one phase access}	USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
16		{Completion of uplink RLC data block transfer}	MS performs a Cell Update.

Specific message contents

PACKET CELL CHANGE CONTINUE in Step 14

Information element	Value/remark
< PAGE_MODE : bit (2) >	00
0	0
< GLOBAL_TFI : Global TFI IE >	1 <5 bit Downlink TFI>
0 1	1
< ARFCN : bit (10) >	ARFCN of Cell B.
< BSIC : bit (6) >	BSIC of Cell B.
< CONTAINER_ID : bit (2) >	00

42.4.5.3 Void

42.4.5.4 Network Assisted Cell Change / Packet Neighbour Cell Data and Packet Cell Change Order

42.4.5.4.1 Conformance requirements

[3GPP TS 44.060, 5.5.1.4.3]

A mobile station supporting the Network Assisted Cell Change procedures shall implement the request for acquisition of system information (see clause 5.5.1.1a).

The PACKET PSI STATUS (respectively PACKET SI STATUS) message shall indicate the present status of PSI (respectively SI) messages stored in or requested but not received by the mobile station. The mobile station shall include as many PSI (respectively SI) message types that fit into the *Received PSI Message List* (respectively *Received SI Message List*) construction in the PACKET PSI STATUS (respectively PACKET SI STATUS) message and that meet the following criteria: The PACKET PSI STATUS (respectively PACKET SI STATUS) message is sent on PACCH when the mobile station is in packet transfer mode. The first sending of this message during the acquisition of PBCCH (respectively BCCH) information shall take place at the first suitable opportunity after the acquisition is initiated:

- The PSI (respectively SI) message type is relevant for the mobile station, based on the features the mobile station supports (e.g. non-GSM and multi-RAT capabilities); and
- In case of optional PSI (respectively SI) messages types, the PSI (respectively SI) message type shall be indicated by the network as present on PBCCH (respectively BCCH).

If the presence of an optional PSI (respectively SI) message type cannot be determined, based on the information received, the mobile station shall assume that the optional PSI (respectively SI) message type is present.

NOTE 1: On PBCCH, the presence of optional PSI messages is indicated in PSI1 and PSI2.

NOTE 2: On BCCH, SI2, SI3, SI4 and, if present, SI9 indicate the presence of optional SI messages, except SI1. The presence of SI1 can be determined by reading the BCCH Norm block at TC = 0.

The message type value for these PSI (respectively SI) messages shall be included in the *Received PSI Message List* (respectively *Received SI Message List*) in the PACKET PSI STATUS (respectively PACKET SI STATUS) message. The network may use this information to determine which PSI (respectively SI) message types the mobile station is able to receive and the present status of the PSI (respectively SI) messages stored in the mobile station.

[3GPP TS 44.060, 8.8.3]

After receiving a PACKET CELL CHANGE NOTIFICATION message from the mobile station the network can behave in different ways as described below.

- 3) The network sends first necessary system information for the cell proposed in the PACKET CELL CHANGE NOTIFICATION message, or for any other cell, in one or more instances of the PACKET NEIGHBOUR CELL DATA message and sends then a PACKET CELL CHANGE ORDER message. The mobile station shall store the received system information as specified in clause 8.8.1. When the first instance of the PACKET NEIGHBOUR CELL DATA message is received, the mobile station shall stop timer T3210 if still running. When the PACKET CELL CHANGE ORDER message is received, the mobile station shall stop timer T3208, leave CCN mode and follow the procedures as specified for the Packet Cell Change Order (clause 8.4) and in clause 8.8.1.

References

3GPP TS 44.060, subclause 5.5.1.4.3 and 8.8.3

42.4.5.4.2 Test purpose

1. To verify that the MS applies CCN when CCN is indicated in SI13 of the serving cell by sending a PACKET CELL CHANGE NOTIFICATION when deciding to make a cell reselection.
2. To verify that MS leaves CCN mode when it receives a PACKET CELL CHANGE ORDER and follows the procedures as specified in the PACKET CELL CHANGE ORDER.
3. To verify that MS uses the System Information received in PACKET NEIGHBOUR CELL DATA when accessing the new cell.
4. To verify that MS requests remaining System Information messages when having accessed the new cell by sending PACKET SI STATUS.

42.4.5.4.3 Method of test

Initial conditions

System Simulator:

3 cells, GPRS supported, CCN Active in SI13, PCCCH not present.

GPRS ready timer T3314 = infinity

Cell A: The indication of Cell C is removed in SI2. RLA_C = -50 dBm

Cell B: Supports PACKET SI STATUS. No System Information is broadcast on the BCCH, except SI3. This is only made to make it possible to verify that the MS uses the information in Packet Neighbour Cell Data. RLA_C = -60 dBm

Cell C: The cell is not active at the start of the test.

Mobile Station:

MS is in Packet Idle mode, GPRS attached with support of GERAN Feature Package 1 indicated in MS Radio Access Capabilities, and PDP context 2 established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The MS is triggered to initiate packet uplink transfer. SS assigns resources to the MS and it starts to send uplink data that the SS acknowledges. During the uplink the signal strength of cell A is lowered to – 80 dBm. The MS enters CCN mode and sends PACKET CELL CHANGE NOTIFICATION. The MS then continues to send uplink data. SS sends a complete set of PACKET NEIGHBOUR CELL DATA with SI1, SI3 and SI13 of Cell B to the MS. The SS then sends a PACKET CELL CHANGE ORDER that orders the MS to change to Cell B.

The MS requests resources for an uplink in the Cell B and continues the uplink. The MS then requests the remaining SI messages by sending PACKET SI STATUS (Note: During the acquisition of BCCH information the MS may send up to three extra PACKET SI STATUS messages). SS verifies that the MS indicates that it has received the SI sent in PACKET NEIGHBOUR CELL DATA. SS sends the missing SI to the MS in PACKET SERVING CELL DATA messages during the uplink.

To ensure that the MS has received the requested SI, Cell A is deactivated and Cell C is activated with signal strength set to – 50 dBm. The signal strength of cell B is lowered to – 80 dBm. The MS enters CCN mode and sends PACKET CELL CHANGE NOTIFICATION. The SS then sends PACKET CELL CHANGE ORDER and the MS changes to Cell C. The MS requests resources for an uplink in the new cell and re-establishes and completes the uplink transfer in the new cell.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation one phase access or two phase access }	n = 10000 octets. USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
3	MS -> SS	RLC DATA BLOCK	
4	SS -> MS	PACKET UPLINK ACK/NACK	
5	SS		Lower signal strength of Cell A to -80 dBm.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
7	MS -> SS	RLC DATA BLOCK Or PACKET CELL CHANGE NOTIFICATION	
8	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS
9			Steps 7 and 8 are repeated until a PACKET CELL CHANGE NOTIFICATION is received in step 7, but no longer than 15 sec. The test has failed if no PACKET CELL CHANGE NOTIFICATION is received in Cell A within 15 sec from Step 5.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
11	MS -> SS	RLC DATA BLOCK	
12	SS -> MS	PACKET NEIGHBOUR CELL DATA	See specific message contents
13			Step 10 to 12 are repeated until all instances of PACKET NEIGHBOUR CELL DATA are sent.
14	SS -> MS	PACKET CELL CHANGE ORDER	See specific message contents
			The following messages are to be sent and received in Cell B.
15		{Uplink dynamic allocation one phase access or two phase access }	USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
16	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS

17	MS -> SS	RLC DATA BLOCK Or PACKET SI STATUS Or PACKET RESOURCE REQUEST	<p>Step 18 is performed only if a PACKET RESOURCE REQUEST is received in Step 17.</p> <p>Repeats the PDTCH assignment given in Step 15.</p> <p>Send PACKET DOWNLINK DUMMY CONTROL BLOCK with USF assigned to the MS and continue with step 17</p> <p>USF assigned to the MS</p> <p>Steps 17 to 19 are repeated until both a PACKET SI STATUS and an RLC Data Block are received in step 17.</p> <p>The Packet SI Status shall be sent within 10 sec of accessing the cell. Verify that the MS not requests SI that was sent in step 12.</p> <p>Note: During the acquisition of BCCH information the MS may send up to three extra PACKET SI STATUS messages</p> <p>If the RLC DATA BLOCK with BSN = 0 received in Step 17 contains an empty LLC PDU as the first LLC PDU, Steps 17 to 19 are further repeated until a PACKET RESOURCE REQUEST is received in Step 17.</p> <p>NOTE: The empty LLC PDU may be accompanied by another low priority RLC data block (with Packet Resource Request and Packet Uplink Assignment or Packet Timeslot Reconfigure as required), in order to ensure that the radio resources are used efficiently.</p> <p>See specific message contents</p> <p>Step 21 is repeated until all instances of PACKET SERVING CELL DATA are sent.</p> <p>Cell A is deactivated and Cell C is activated and set to - 50 dBm.</p> <p>Lower signal strength of Cell B to -80 dBm.</p> <p>USF assigned to the MS</p>
18	SS -> MS	PACKET UPLINK ASSIGNMENT	
19	SS -> MS	PACKET UPLINK ACK/NACK	
20			
21	SS -> MS	PACKET SERVING CELL DATA	
22			
23	SS		
24	SS		
25	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	

26	MS -> SS	RLC DATA BLOCK Or PACKET CELL CHANGE NOTIFICATION Or PACKET SI STATUS	
27 28	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS Steps 26 and 27 are repeated until a PACKET CELL CHANGE NOTIFICATION is received in step 26, but no longer than 15 sec. The test has failed if no PACKET CELL CHANGE NOTIFICATION is received in Cell B within 15 sec from Step 24.
29	SS -> MS	PACKET CELL CHANGE ORDER	See specific message contents
			The following messages are to be sent and received in Cell C.
30		{Uplink dynamic allocation one phase access or two phase access }	USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open- end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
31	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
32	MS -> SS	RLC DATA BLOCK Or PACKET RESOURCE REQUEST	
			Step 33 is performed only if a PACKET RESOURCE REQUEST is received in Step 32.
33	SS -> MS	PACKET UPLINK ASSIGNMENT	Repeats the PDTCH assignment given in Step 30. Send PACKET DOWNLINK DUMMY CONTROL BLOCK with USF assigned to the MS and continue with step 32.
34	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS
35			If the RLC DATA BLOCK with BSN = 0 received in Step 32 contains an empty LLC PDU as the first LLC PDU, Steps 32 to 34 are repeated until a PACKET RESOURCE REQUEST is received in Step 32. NOTE: The empty LLC PDU may be accompanied by another low priority RLC data block (with Packet Resource Request and Packet Uplink Assignment or Packet Timeslot Reconfigure as required), in order to ensure that the radio resources are used efficiently.
36		Completion of {Uplink dynamic allocation}	

Specific message contents

PACKET NEIGHBOUR CELL DATA in Step 12

The message contains the default SI1, SI3 and SI13 for Cell B.

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
< GLOBAL_TFI : Global TFI IE >	0 <5 bit Uplink TFI>
< CONTAINER_ID : bit (2) >	01 for SI belonging to Cell B
< SPARE :bit(1)>	0
< CONTAINER INDEX :bit (5)>	00000 to the index needed to send all SI messages
0 1	0 No ARFCN or BSIC
Container repetition struct	
< PD : bit(3)>	000, BCCH (LAPDm)

PACKET CELL CHANGE ORDER in Step 14

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 10	0
< GLOBAL_TFI : Global TFI IE >	<5 bit Uplink TFI>
0 1	0
< IMMEDIATE_REL >	1 (Immediate abort of operation in the old cell is required)
< ARFCN >	ARFCN of Cell B
< BSIC >	BSIC of Cell B
< NETWORK_CONTROL_ORDER : bit(2) >	00 (NC0)
0 1	0
0 1 < NC_FREQUENCY_LIST >	0
Null 0 1	1 Additions in R98
Null 0 1	0 LSA Parameters not included
Null 0 1	1 Additions in R99
< ENH Measurement parameters >	
{ 0 < BA_IND : bit > < 3G_BA_IND : bit > 1	000
< PSI3_CHANGE_MARK : bit(2) > }	
< PMO_IND : bit >	0
< REPORT_TYPE : bit >	1
< REPORTING_RATE : bit >	0
< INVALID_BSIC_REPORTING : bit >	0
0 1 < 3G Neighbour Cell Description >	0 (not present)
0 1 < GPRS REP PRIORITY Description >	0 (not present)
0 1 < GPRS MEASUREMENT Parameters Description >	0 (not present)
0 1 < GPRS 3G MEASUREMENT Parameters Description >	0 (not present)
Null 0 1	1 Additions in Rel4
< CCN_ACTIVE : bit (1) >	1
0 1 < CONTAINER_ID : bit (2) >	1
< CONTAINER_ID : bit (2) >	01(The same as PACKET NEIGHBOUR CELL DATA in Step 12)
0 1 < CCN Support Description >	0
< padding bits >	

PACKET SERVING CELL DATA in Step 21

The message contains the default SI2, SI2bis (when indicated in SI2) and SI4 for Cell B.

Information element	Value/remark
< MESSAGE_TYPE : bit (6) >	001101
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 < GLOBAL_TFI : Global TFI IE >	0 <5 bit Uplink TFI>
< spare : bit (4) >	0000
< CONTAINER INDEX :bit (5)>	00000 to the index needed to send all SI messages
Container repetition struct	
< PD : bit(3)>	000, BCCH (LAPDm)

PACKET CELL CHANGE ORDER in Step 29

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 10	0
< GLOBAL_TFI : Global TFI IE >	<5 bit Uplink TFI>
0 1	0
< IMMEDIATE_REL >	1 (Immediate abort of operation in the old cell is required)
< ARFCN >	ARFCN of Cell C
< BSIC >	BSIC of Cell C
< NETWORK_CONTROL_ORDER : bit(2) >	00 (NC0)
0 1	0
0 1 < NC_FREQUENCY_LIST >	0
Null 0 1	1 Additions in R98
Null 0 1	0 LSA Parameters not included
Null 0 1	1 Additions in R99
< ENH Measurement parameters >	
{ 0 < BA_IND : bit > < 3G_BA_IND : bit > 1	000
< PSI3_CHANGE_MARK : bit(2) > }	
< PMO_IND : bit >	0
< REPORT_TYPE : bit >	1
< REPORTING_RATE : bit >	0
< INVALID_BSIC_REPORTING : bit >	0
0 1 < 3G Neighbour Cell Description >	0 (not present)
0 1 < GPRS REP PRIORITY Description >	0 (not present)
0 1 < GPRS MEASUREMENT Parameters Description >	0 (not present)
0 1 < GPRS 3G MEASUREMENT Parameters Description >	0 (not present)
Null 0 1	1 Additions in Rel4
< CCN_ACTIVE : bit (1) >	1
0 1 < CONTAINER_ID : bit (2) >	0
0 1 < CCN Support Description >	0
< padding bits >	

42.4.5.5 Network Assisted Cell Change / Expiry of T3208 and T3210

42.4.5.5.2 Conformance requirements

[3GPP TS 44.060, 8.8.3]

After receiving a PACKET CELL CHANGE NOTIFICATION message from the mobile station the network can behave in different ways as described below.

5) No network response

When timer T3210 expires, the mobile station shall retransmit once the PACKET CELL CHANGE NOTIFICATION message at the first possible opportunity.

When timer T3208 expires, the mobile station shall leave CCN mode and continue cell reselection in NC0/NC1 mode as described in clause 5.5.1.1 and in [15].

References

3GPP TS 44.060, subclause 8.8.3

42.4.5.5.2 Test purpose

1. To verify that the MS retransmits the PACKET CELL CHANGE NOTIFICATION when T3210 expires 300 ms after no reception of any PACKET NEIGHBOUR CELL DATA, PACKET CELL CHANGE CONTINUE, PACKET MEASUREMENT ORDER or PACKET CELL CHANGE ORDER.
2. To verify that MS leaves CCN mode when T3208 expires and continues cell reselection in NC0 mode.

42.4.5.5.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported, CCN Active in SI13, PCCCH not present.

Cell A: RLA_C = -50 dBm

Cell B: RLA_C = -60 dBm

Mobile Station:

MS is in Packet Idle mode, GPRS attached with support of GERAN Feature Package 1 indicated in MS Radio Access Capabilities, and PDP context 2 established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The MS is triggered to initiate packet uplink transfer. SS assigns resources to the MS and it starts to send uplink data that the SS acknowledge. During the uplink the signal strength of Cell A is lowered to – 80 dBm. The MS enters CCN mode and sends PACKET CELL CHANGE NOTIFICATION and starts timer T3208 and T3210. The MS then continues to send uplink data. When timer T3210 expires, the MS retransmits PACKET CELL CHANGE NOTIFICATION once. When timer T3208 expires, the MS leaves CCN mode and performs cell reselection in NC0 mode. The MS change to Cell B and complete the upload.

Maximum duration of the test

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Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation one phase access or two-phase access}	n = 5000 octets. USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
3	MS -> SS	RLC DATA BLOCK	
4	SS -> MS	PACKET UPLINK ACK/NACK	USF NOT assigned to the MS
5	SS		Lower signal strength of Cell A to -80 dBm.
6	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
7	MS -> SS	RLC DATA BLOCK Or PACKET CELL CHANGE NOTIFICATION	
8	SS -> MS	PACKET UPLINK ACK/NACK	PCCN Sending = 0 (First sending) USF assigned to the MS
9			Step 7 and 8 are repeated until the first PACKET CELL CHANGE NOTIFICATION is received in step 7, but no longer than 15 sec. The test has failed if no PACKET CELL CHANGE NOTIFICATION is received in Cell A within 15 sec from Step 5.
10	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
11	MS -> SS	RLC DATA BLOCK Or PACKET CELL CHANGE NOTIFICATION	Sent at expiry of T3210. PCCN Sending = 1 (Second sending) SS shall schedule USF often enough so T3210 timer requirement can be met.
12	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS
13			Step 11 and 12 are repeated until a PACKET CELL CHANGE NOTIFICATION is received in step 11. It is verify that the PACKET CELL CHANGE NOTIFICATION was sent after expiry of T3210 - 10% from the previous PCCN received in Step 7.
14	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
15	MS -> SS	RLC DATA BLOCK	
16	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS
17			Steps 15 and 16 are repeated for at least T3208 (0.96 sec) from the first PCCN sending (in step 7) but no more than 5 sec.
18	SS		SS verifies that no more RLC DATA BLOCKS are received from the MS.
			The following messages are to be sent and received in Cell B.
19		{Uplink dynamic allocation one phase or two-phase access}	USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
20	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
21	MS -> SS	RLC DATA BLOCK Or PACKET RESOURCE REQUEST	
			Step 22 is performed only if a PACKET RESOURCE REQUEST is received in Step

			21.
22	SS -> MS	PACKET UPLINK ASSIGNMENT	Repeats the PDTCH assignment given in Step 19. Send PACKET DOWNLINK DUMMY CONTROL BLOCK with USF assigned to the MS and continue with step 21.
23	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS
24			If the RLC DATA BLOCK with BSN = 0 received in Step 21 contains an empty LLC PDU as the first LLC PDU, Steps 21 to 23 are repeated until a PACKET RESOURCE REQUEST is received in Step 21. NOTE: The empty LLC PDU may be accompanied by another low priority RLC data block (with Packet Resource Request and Packet Uplink Assignment or Packet Timeslot Reconfigure as required), in order to ensure that the radio resources are used efficiently.
25		{Completion of uplink RLC data block transfer}	

Specific message contents

None.

42.4.5.6 Network Assisted Cell Change / Entering packet idle mode

42.4.5.6.1 Conformance requirements

[3GPP TS 44.060, 8.8.3]

The CCN mode is only valid in Packet Transfer Mode. If the mobile station is in CCN mode when entering packet idle mode, the mobile station shall stop the timers T3206 and T3208, stop timer T3210 if still running, leave CCN mode and continue the cell reselection procedure according to the NC0/NC1 procedures. If PACKET NEIGHBOUR CELL DATA messages are received on the PACCH before entering packet idle mode and the cell identity parameters are included, this information may then be used at the next cell change.

References

3GPP TS 44.060, subclause 8.8.3

42.4.5.6.2 Test purpose

To verify that the MS continues according to the normal packet idle mode cell reselection procedures when leaving CCN mode and entering packet idle mode.

42.4.5.6.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported, CCN Active in SI13, PCCCH not present.

GPRS ready timer T3314 = infinity

T3192 = 0 ms

Mobile Station:

MS is in Packet Idle mode, GPRS attached with support of GERAN Feature Package 1 indicated in MS Radio Access Capabilities, and PDP context 2 established.

Cell A: RLA_C = -50 dBm

Cell B: RLA_C = -60 dBm

Specific PICS Statements

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PIXIT Statements

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Test procedure

SS establishes a downlink TBF and sends 4 RLC data blocks, the last one containing FBI = 0 and a valid RRBP. The MS sends a PACKET DOWNLINK ACK/NACK. The signal strength of Cell A is lowered to -80 dBm. The downlink continues until MS sends PACKET CELL CHANGE NOTIFICATION. SS sends a RLC block that contains FBI = 1 and a valid RRBP. The MS sends a PACKET DOWNLINK ACK/NACK containing FINAL_ACK_INDICATION = 1. The MS leaves CCN mode and enters packet idle mode and performs cell reselection in NC0 mode. The MS performs a Cell update in the new cell.

Maximum duration of the test

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Expected sequence

Step	Direction	Message	Comments
1		{Downlink TBF establishment}	RLC mode: acknowledged, without starting time.
2	SS -> MS	DOWNLINK RLC DATA BLOCK	
3	SS -> MS	DOWNLINK RLC DATA BLOCK	
4	SS -> MS	DOWNLINK RLC DATA BLOCK	
5	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=0 and a valid RRBP.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP of downlink PACCH.
7			Lower signal strength of Cell A to -80 dBm.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	
9	SS -> MS	DOWNLINK RLC DATA BLOCK	
10	SS -> MS	DOWNLINK RLC DATA BLOCK	
11	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=0 and a valid RRBP.
12	MS -> SS	PACKET DOWNLINK ACK/NACK Or PACKET CELL CHANGE NOTIFICATION	
13			Steps 8 to 12 are repeated until a PACKET CELL CHANGE NOTIFICATION is received in step 12, but no longer than 15 sec. The test has failed if no PACKET CELL CHANGE NOTIFICATION is received in Cell A within 15 sec from Step 7.
14	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=1 and a valid RRBP.
15	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP of downlink PACCH and contains FINAL_ACK_INDICATION = 1.
			The following messages are to be sent and received in Cell B.
16		{Uplink dynamic allocation one phase access}	USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
17		{Completion of uplink RLC data block transfer}	MS performs a Cell Update.

Specific message contents

None.

42.4.5.7 Network Assisted Cell Change / CCN not supported towards target cell

42.4.5.7.1 Conformance requirements

The SI2quarter message may also contain information, the CCN Support description, to be used when CCN is enabled in the serving cell, see 3GPP TS 44.060. This CCN Support description is associated with the Neighbour Cell list (see 3.4.1.2.1.3) having the same BA_IND value and 3G_BA_IND value. Each CCN_SUPPORTED bit of this field relates to indices of the Neighbour Cell list, starting with index 0. The CCN Support description may be received before the corresponding Neighbour Cell list.

Indices exceeding the value 95 or the number of cells in the Neighbour Cell List shall be ignored. If there are fewer indices than the number of cells in the Neighbour Cell List, the value 0 shall be assumed for the missing bits.

When this information is not present but CCN is enabled in the serving cell, the mobile station shall assume that CCN is enabled towards all neighbour cells.

References

3GPP TS 44.018, subclause 3.4.1.2.1.8

42.4.5.7.2 Test purpose

To verify that the MS does not apply CCN on a target cell when the CCN support description not is set for that cell.

42.4.5.7.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present.

Cell A: CCN Active. SI3 indicates SI2quater broad cast on BCCH norm. SI2quater contains a CCN Support Description indicating that CCN not is supported towards Cell B. RLA_C = -50 dBm

Cell B: CCN Active. RLA_C = -60 dBm

Mobile Station:

MS is in Packet Idle mode, GPRS attached with support of GERAN Feature Package 1 indicated in MS Radio Access Capabilities, and PDP context 2 established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The MS is given time to read all SI including SI2quater in idle mode.

The MS is triggered to initiate packet uplink transfer. SS assigns resources to the MS and it starts to send uplink data that the SS acknowledge. During the uplink the signal strength of Cell A is lowered to – 80 dBm. The MS enters CCN mode but does not send any PACKET CELL CHANGE NOTIFICATION. The MS continues to send uplink data. After w while, the MS selects cell B. The MS requests resources for an uplink in cell B and completes the uplink transfer.

Maximum duration of the test

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Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation one phase access or two phase access}	n = 5000 octets. USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
2	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS.
3	MS -> SS	RLC DATA BLOCK	
4	SS -> MS	PACKET UPLINK ACK/NACK	
5	SS		Lower signal strength of Cell A to -80 dBm.
6	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS.
7	MS -> SS	RLC DATA BLOCK	
8	SS -> MS	PACKET UPLINK ACK/NACK	
9			USF assigned to the MS . Step 7 and 8 are repeated until the MS access Cell B, but no longer than 18 sec. The test has failed if the MS sends data after 18 sec from Step 5. The test has failed if a PACKET CELL CHANGE NOTIFICATION is received in Cell A or if the MS has not accessed Cell B within 20 sec from Step 5.
			The following messages are to be sent and received in Cell B.
10		{Uplink dynamic allocation one phase access or two phase access}	USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
12	MS -> SS	RLC DATA BLOCK Or PACKET RESOURCE REQUEST	
			Step 13 is performed only if a PACKET RESOURCE REQUEST is received in Step 12.
13	SS -> MS	PACKET UPLINK ASSIGNMENT	Repeats the PDTCH assignment given in Step 10. Send PACKET DOWNLINK DUMMY CONTROL BLOCK with USF assigned to the MS and continue with step 12.
14	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS
15			If the RLC DATA BLOCK with BSN = 0 received in Step 12 contains an empty LLC PDU as the first LLC PDU, Steps 12 to 14 are repeated until a PACKET RESOURCE REQUEST is received in Step 12. NOTE: The empty LLC PDU may be accompanied by another low priority RLC data block (with Packet Resource Request and Packet Uplink Assignment or Packet Timeslot Reconfigure as required), in order to ensure that the radio resources are used efficiently.
16		Completion of {Uplink dynamic allocation}	

Specific message contents

SYSTEM INFORMATION TYPE 2QUATER with a CCN support description based on the BA list in SI2

Information Element	Value/remark
< RR management Protocol Discriminator bit (4) >	'0110'B
< Skip Indicator : bit (4) >	'0000'B
< Message type : bit (8) >	'0000 0111'B
< SI2 quarter Rest Octets >	
< BA_IND : bit >	Same BA_IND as for SI2
< 3G_BA_IND : bit >	0
< MP_CHANGE_MARK : bit >	0
< SI2quarter_INDEX : bit (4) >	'0000'B
< SI2quarter_COUNT : bit (4) >	'0000'B
0 1 < Measurement_Parameters Description >	0
0 1 < GPRS_Real Time Difference Description >	0
0 1 < GPRS_BSIC Description >	0
0 1 < GPRS_REPORT PRIORITY Description >	0
0 1 < GPRS_Measurement_Parameters Description >	0
0 1 < NC Measurement Parameters >	0
0 1 < extension length : bit (8) >	1 '0000 1111'B (extension length 15)
< SI2q Extension Information >	
0 1 < CCN Support Description >	1
< Number_Cells : bit (7) >	'000 1000'B (8 neighbours)
{ CCN_SUPPORTED : bit } * (val(Number_Cells)) ;	'1000 0000'B Bitmap will all index but the index corresponding to Cell 2 set to 1 (indicating CCN not supported)
0 1 < 3G Neighbour Cell Description >	0
0 1 < 3G Measurement_Parameters Description >	0
0 1 < GPRS_3G_MEASUREMENT Parameters Description >	0

42.4.5.8 Network Assisted Cell Change / NC mode change

42.4.5.8.1 Conformance requirements

[3GPP TS 44.060, 8.8.3 & 4)]

The network orders the mobile station into NC2 mode.

A mobile station may in response to a PACKET CELL CHANGE NOTIFICATION message sent to the network receive a PACKET MEASUREMENT ORDER message indicating NC2 mode. When the mobile station receives the NC2 order it shall leave CCN mode, stop timer T3208, stop timer T3210 if still running, and go into NC2 mode.

References

3GPP TS 44.060, subclause 8.8.3

42.4.5.8.2 Test purpose

To verify that the MS leaves the CCN mode and enters NC2 mode on receipt of Packet Measurement Order and the NC2 parameters.

42.4.5.8.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported, CCN Active, RXLEV_ACCESS_MIN = -90dBm.

GPRS ready timer T3314 = infinity

Cell A: RLA_C = -50 dBm

Cell B: RLA_C = -60 dBm

Mobile Station:

MS is in Packet Idle mode, GPRS attached with support of GERAN Feature Package 1 indicated in MS Radio Access Capabilities, and PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Test procedure

SS establishes a downlink TBF and sends 4 RLC data blocks, the last one containing FBI = 0 and a valid RRBP. The MS sends a PACKET DOWNLINK ACK/NACK. The signal strength of Cell A is lowered to - 80 dBm. The downlink continues until MS sends PACKET CELL CHANGE NOTIFICATION. SS sends PACKET MEASUREMENT ORDER setting NC2 and then sends RLC data blocks, regularly polling the MS with a valid RRBP, and verifies that the MS has entered NC2 mode: the MS leaves CCN mode, starts reporting measurements and does not perform any cell reselection on its own as required in NC2.

Expected sequence

Step	Direction	Message	Comments
1		{Downlink TBF establishment}	RLC mode: acknowledged, without starting time.
2	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=0 and a valid RRBP.
3	SS -> MS	DOWNLINK RLC DATA BLOCK	
4	SS -> MS	DOWNLINK RLC DATA BLOCK	
5	SS -> MS	DOWNLINK RLC DATA BLOCK	
6	MS -> SS	PACKET DOWNLINK ACK/NACK	
7			Lower signal strength of Cell A to -80 dBm.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=0 and a valid RRBP.
9	SS -> MS	DOWNLINK RLC DATA BLOCK	
10	SS -> MS	DOWNLINK RLC DATA BLOCK	
11	SS -> MS	DOWNLINK RLC DATA BLOCK	
12	MS -> SS	PACKET DOWNLINK ACK/NACK Or PACKET CELL CHANGE NOTIFICATION	
13			Step 8 to 12 are repeated until a PACKET CELL CHANGE NOTIFICATION is received in step 12, but no longer than 10 sec. The test has failed if no PACKET CELL CHANGE NOTIFICATION is received in Cell A within 10 sec from Step 7.
14	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T See specific message contents
15	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
16	MS -> SS	PACKET DOWNLINK ACK/NACK Or PACKET MEASUREMENT REPORT	Sent on PACCH. PACKET MEASUREMENT REPORT Contains the "NC measurement report struct" on PACCH
17			Repeat steps 15 to 16 until two PMRs are received.
18	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
19	MS -> SS	PACKET DOWNLINK ACK/NACK Or PACKET MEASUREMENT REPORT	Sent on PACCH. PACKET MEASUREMENT REPORT Contains the "NC measurement report struct" on PACCH
20			Repeat steps 18 to 19 during 10s.
21	SS -> MS	DOWNLINK RLC DATA BLOCK	FBI bit set to '1' and valid RRBP field
22	MS -> SS	PACKET DOWNLINK ACK/NACK	In the uplink block specified by the RRBP field. Final Ack Indicator bit set to '1'

Specific message contents

PACKET MEASUREMENT ORDER in step 14:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_T	10 (NC2) 001 (0,96 s)
---	--------------------------

42.4.5.9 Network Assisted Cell Change / NC mode change / Packet Neighbour Cell Data

42.4.5.9.1 Conformance requirements

[3GPP TS 44.060, 8.8.3 & 4]

The network orders the mobile station into NC2 mode.

A mobile station may in response to a PACKET CELL CHANGE NOTIFICATION message sent to the network receive a PACKET MEASUREMENT ORDER message indicating NC2 mode. When the mobile station receives the NC2 order it shall leave CCN mode, stop timer T3208, stop timer T3210 if still running, and go into NC2 mode.

When the NC2 mode has been ordered, the network may send PACKET NEIGHBOUR CELL DATA messages on the PACCH before sending the PACKET CELL CHANGE ORDER to the mobile station.

42.4.5.9.2 References

3GPP TS 44.060, subclause 5.5.1.4.3 and 8.8.3

42.4.5.9.3 Test purpose

1. To verify that MS leaves CCN mode when it receives a PACKET MEASUREMENT ORDER activating NC2 and follows the NC2 procedures.
2. To verify that MS uses the System Information received in PACKET NEIGHBOUR CELL DATA when accessing the new cell.
3. To verify that MS requests remaining System Information messages when having accessed the new cell by sending PACKET SI STATUS.

42.4.5.9.4 Method of test

42.4.5.9.4.1 Initial conditions

System Simulator:

3 cells, GPRS supported, CCN Active in SI13, PCCCH not present.

GPRS ready timer T3314 = infinity

Cell A: The indication of Cell C is removed in SI2. RLA_C = -50 dBm

Cell B: Supports PACKET SI STATUS. No System Information is broadcast on the BCCH, except SI3. This is only made to make it possible to verify that the MS uses the information in Packet Neighbour Cell Data. RLA_C = -60 dBm. PSI13 shall be transmitted during transfer mode on cell B to prevent any TBF suspension.

Cell C: The cell is not active at the start of the test.

Mobile Station:

MS is in Packet Idle mode, GPRS attached with support of GERAN Feature Package 1 indicated in MS Radio Access Capabilities, and PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

42.4.5.9.4.2 Void

42.4.5.9.4.3 Test procedure

The MS is triggered to initiate packet uplink transfer. SS assigns resources to the MS and the MS starts to send uplink data that the SS acknowledges. During the uplink transfer, the signal strength of cell A is lowered to -80 dBm. The MS enters CCN mode and sends PACKET CELL CHANGE NOTIFICATION. The MS then continues to send uplink data.

SS sends a Packet Measurement Order providing the MS with NC2 parameters. MS starts sending Packet Measurement Reports. SS then sends a complete set of PACKET NEIGHBOUR CELL DATA with SI1, SI3 and SI13 of Cell B to the MS. SS then sends a PACKET CELL CHANGE ORDER that orders the MS to change to Cell B.

The MS requests resources for an uplink transfer in Cell B and continues the uplink transfer. The MS then requests the remaining SI messages by sending PACKET SI STATUS (Note: During the acquisition of BCCH information the MS may send up to three extra PACKET SI STATUS messages). SS verifies that the MS indicates that it has received the SI sent in PACKET NEIGHBOUR CELL DATA. SS sends the missing SI to the MS in PACKET SERVING CELL DATA messages during the uplink transfer.

To ensure that the MS has received the requested SI, Cell A is deactivated and Cell C is activated with signal strength set to -60 dBm. The signal strength of cell B is lowered to -80 dBm. The MS enters CCN mode and sends PACKET CELL CHANGE NOTIFICATION. The SS then sends PACKET CELL CHANGE ORDER and the MS changes to Cell C. The MS requests resources for an uplink transfer in the new cell and re-establishes and completes the uplink transfer in the new cell.

Expected sequence

Step	Direction	Message	Comments
1		{uplink dynamic allocation one phase access} or {uplink dynamic allocation two phase access}	n = 10000 octets. USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS.
3	MS -> SS	RLC DATA BLOCK	
4	SS -> MS	PACKET UPLINK ACK/NACK	
5	SS		Lower signal strength of Cell A to -80 dBm.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS.
7	MS -> SS	RLC DATA BLOCK Or PACKET CELL CHANGE NOTIFICATION	
8	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS.
9			Steps 7 and 8 are repeated until a PACKET CELL CHANGE NOTIFICATION is received in step 7, but no longer than 15 sec. The test has failed if no PACKET CELL CHANGE NOTIFICATION is received in Cell A within 15 sec from Step 5.
10	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T See specific message contents
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS.
12	MS -> SS	RLC data block OR PACKET MEASUREMENT REPORT	MS sends data Or PACKET MEASUREMENT REPORT - Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
13			Repeat steps 11 to 12 during T3158+2s
14	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS.
15	MS -> SS	RLC data block or PACKET MEASUREMENT REPORT	MS sends data or a PACKET MEASUREMENT REPORT
16	SS -> MS	PACKET NEIGHBOUR CELL DATA	See specific message contents
17			Step 14 to 16 are repeated until all instances of PACKET NEIGHBOUR CELL DATA are sent.
18	SS -> MS	PACKET CELL CHANGE ORDER	See specific message contents
			The following messages are to be sent and received in Cell B.
19		{uplink dynamic allocation one phase access} or {uplink dynamic allocation two phase access}	USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present.
20	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS.

21	MS -> SS	RLC DATA BLOCK Or PACKET SI STATUS Or PACKET RESOURCE REQUEST	<p>Step 22 is performed only if a PACKET RESOURCE REQUEST is received in Step 21.</p> <p>Repeats the PDTCH assignment given in Step 19.</p> <p>Send PACKET DOWNLINK DUMMY CONTROL BLOCK with USF assigned to the MS and continue with step 21.</p> <p>USF assigned to the MS</p> <p>Steps 21 to 23 are repeated until both a PACKET SI STATUS and an RLC Data Block are received in step 21.</p> <p>The Packet SI Status shall be sent within 10 sec of accessing the cell. Verify that the MS not requests SI that was sent in step 16.</p> <p>Note: During the acquisition of BCCH information the MS may send up to three extra PACKET SI STATUS messages.</p> <p>If the RLC DATA BLOCK with BSN = 0 received in Step 21 contains an empty LLC PDU as the first LLC PDU, Steps 21 to 23 are further repeated until a PACKET RESOURCE REQUEST is received in Step 21.</p> <p>NOTE: The empty LLC PDU may be accompanied by another low priority RLC data block (with Packet Resource Request and Packet Uplink Assignment or Packet Timeslot Reconfigure as required), in order to ensure that the radio resources are used efficiently.</p> <p>See specific message contents</p> <p>Step 25 is repeated until all instances of PACKET SERVING CELL DATA are sent.</p> <p>Cell A is deactivated and Cell C is activated and set to -60 dBm.</p> <p>Lower signal strength of Cell B to -80 dBm.</p> <p>USF assigned to the MS.</p> <p>USF assigned to the MS.</p> <p>Steps 30 and 31 are repeated until a PACKET CELL CHANGE NOTIFICATION is received in step 30, but no longer than 15 sec.</p> <p>The test has failed if no PACKET CELL CHANGE NOTIFICATION is received in Cell B within 15 sec from Step 28.</p> <p>See specific message contents</p> <p>The following messages are to be sent and received in Cell C.</p>	
22	SS -> MS	PACKET UPLINK ASSIGNMENT		
23	SS -> MS	PACKET UPLINK ACK/NACK		
24				
25	SS -> MS	PACKET SERVING CELL DATA		
26				
27	SS			
28	SS			
29	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
30	MS -> SS	RLC DATA BLOCK Or PACKET CELL CHANGE NOTIFICATION Or PACKET SI STATUS		
31	SS -> MS	PACKET UPLINK ACK/NACK		
32				
33	SS -> MS	PACKET CELL CHANGE ORDER		

34		{uplink dynamic allocation one phase access} or {uplink dynamic allocation two phase access}	USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-1 No starting time present. USF assigned to the MS
35	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	
36	MS -> SS	RLC DATA BLOCK Or PACKET RESOURCE REQUEST	
			Step 37 is performed only if a PACKET RESOURCE REQUEST is received in Step 36.
37	SS -> MS	PACKET UPLINK ASSIGNMENT	Repeats the PDTCH assignment given in Step 34. Send PACKET DOWNLINK DUMMY CONTROL BLOCK with USF assigned to the MS and continue with step 36..
38	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS
39			If the RLC DATA BLOCK with BSN = 0 received in Step 36 contains an empty LLC PDU as the first LLC PDU, Steps 36 to 38 are repeated until a PACKET RESOURCE REQUEST is received in Step 36. NOTE: The empty LLC PDU may be accompanied by another low priority RLC data block (with Packet Resource Request and Packet Uplink Assignment or Packet Timeslot Reconfigure as required), in order to ensure that the radio resources are used efficiently.
40		Completion of {Uplink dynamic allocation}	

Specific message contents

PACKET MEASUREMENT ORDER in step 10:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_T	000 (0,48 s)
0 1 < EXT Measurement Parameters >	0
Null 0 1	1 Additions in R98
Null 0 1	0 LSA Parameters not included
Null 0 1	1 Additions in R99
< ENH Measurement parameters >	
{ 0 < BA_IND : bit > < 3G_BA_IND : bit > 1 < PSI3_CHANGE_MARK : bit(2) > }	000
< PMO_IND : bit >	0
< REPORT_TYPE : bit >	1
< REPORTING_RATE : bit >	0
< INVALID_BSIC_REPORTING : bit >	0
0 1 < 3G Neighbour Cell Description >	0 (not present)
0 1 < GPRS REP PRIORITY Description >	0 (not present)
0 1 < GPRS MEASUREMENT Parameters Description >	0 (not present)
0 1 < GPRS 3G MEASUREMENT Parameters Description >	0 (not present)
Null 0 1	1 Additions in Rel-4
< CCN_ACTIVE : bit (1) >	1
0 1 < CCN Support Description >	0
< padding bits >	

PACKET NEIGHBOUR CELL DATA in Step 16:

The message contains the default SI1, SI3 and SI13 for Cell B.

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
< GLOBAL_TFI : Global TFI IE >	0 <5 bit Uplink TFI>
< CONTAINER_ID : bit (2) >	01 for SI belonging to Cell B
< SPARE :bit(1)>	0
< CONTAINER INDEX :bit (5)>	00000 to the index needed to send all SI messages
0 1	0 No ARFCN or BSIC
Container repetition struct	
< PD : bit(3)>	000, BCCH (LAPDm)

PACKET CELL CHANGE ORDER in Step 18

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 10	0
< GLOBAL_TFI : Global TFI IE >	<5 bit Uplink TFI>
0 1	0
< IMMEDIATE_REL >	1 (Immediate abort of operation in the old cell is required)
< ARFCN >	ARFCN of Cell B
< BSIC >	BSIC of Cell B
< NETWORK_CONTROL_ORDER : bit(2) >	00 (NC0)
0 1	0
0 1 < NC_FREQUENCY_LIST >	0
Null 0 1	1 Additions in R98
Null 0 1	0 LSA Parameters not included
Null 0 1	1 Additions in R99
< ENH Measurement parameters >	
{ 0 < BA_IND : bit > < 3G_BA_IND : bit > 1	000
< PSI3_CHANGE_MARK : bit(2) > }	
< PMO_IND : bit >	0
< REPORT_TYPE : bit >	1
< REPORTING_RATE : bit >	0
< INVALID_BSIC_REPORTING : bit >	0
0 1 < 3G Neighbour Cell Description >	0 (not present)
0 1 < GPRS REP PRIORITY Description >	0 (not present)
0 1 < GPRS MEASUREMENT Parameters Description >	0 (not present)
0 1 < GPRS 3G MEASUREMENT Parameters Description >	0 (not present)
Null 0 1	1 Additions in Rel-4
< CCN_ACTIVE : bit (1) >	1
0 1 < CONTAINER_ID : bit (2) >	1
CONTAINER_ID : bit (2)	01(The same as Packet Neighbour Cell Data in step 16)
0 1 < CCN Support Description >	0
< padding bits >	

PACKET SERVING CELL DATA in Step 25

The message contains the default SI2, SI2bis (when indicated in SI2) and SI4 for Cell B.

Information element	Value/remark
< MESSAGE_TYPE : bit (6) >	001101
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 < GLOBAL_TFI : Global TFI IE >	0 <5 bit Uplink TFI>
< spare : bit (4) >	0000
< CONTAINER INDEX :bit (5)>	00000 to the index needed to send all SI messages
Container repetition struct	
< PD : bit(3)>	000, BCCH (LAPDm)

Note: the System Information provides with the Cell C description.

PACKET CELL CHANGE ORDER in Step 33

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 10	0
< GLOBAL_TFI : Global TFI IE >	<5 bit Uplink TFI>
0 1	0
< IMMEDIATE_REL >	1 (Immediate abort of operation in the old cell is required)
< ARFCN >	ARFCN of Cell C
< BSIC >	BSIC of Cell C
< NETWORK_CONTROL_ORDER : bit(2) >	00 (NC0)
0 1	0
0 1 < NC_FREQUENCY_LIST >	0
Null 0 1	1 Additions in R98
Null 0 1	0 LSA Parameters not included
Null 0 1	1 Additions in R99
< ENH Measurement parameters >	
{ 0 < BA_IND : bit > < 3G_BA_IND : bit > 1	000
< PSI3_CHANGE_MARK : bit(2) > }	
< PMO_IND : bit >	0
< REPORT_TYPE : bit >	1
< REPORTING_RATE : bit >	0
< INVALID_BSIC_REPORTING : bit >	0
0 1 < 3G Neighbour Cell Description >	0 (not present)
0 1 < GPRS REP PRIORITY Description >	0 (not present)
0 1 < GPRS MEASUREMENT Parameters Description >	0 (not present)
0 1 < GPRS 3G MEASUREMENT Parameters Description >	0 (not present)
Null 0 1	1 Additions in Rel-4
< CCN_ACTIVE : bit (1) >	1
0 1 < CONTAINER_ID : bit (2) >	0
0 1 < CCN Support Description >	0
< padding bits >	

42.4.6 Packet Enhanced Measurement Report (PEMR)

42.4.6.1 Network Control PEMR – Activation with SI Messages

42.4.6.1.1 Conformance requirement

- 1 The behaviour of the mobile station is controlled by the parameter **NETWORK_CONTROL_ORDER** broadcast in the **PSI5** message on **PBCCH**, in the **SI13** and **SI2quarter** messages on the **BCCH** and in the **PSI13** message on **PACCH**.

When in mode **NC1** or **NC2**, the mobile station shall perform the **NC** measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the **NC_REPORTING_PERIOD_I** and **NC_REPORTING_PERIOD_T** field of the **PSI5**, the **SI2quarter**, the **PACKET CELL CHANGE ORDER** or the **PACKET MEASUREMENT ORDER** message

On expiry of timer **T3158**, the mobile station shall restart timer **T3158** with the indicated reporting period, perform the measurements and send either the **PACKET MEASUREMENT REPORT** message or the **PACKET ENHANCED MEASUREMENT REPORT** to the network. The condition for sending the **PACKET ENHANCED MEASUREMENT REPORT** message instead of the **PACKET MEASUREMENT REPORT** message is based on the **REPORT_TYPE** parameter and if the MS has received **BSIC** information for all cells.

- 2 In packet idle mode, the reporting period is **NC_REPORTING_PERIOD_I** rounded off to the nearest smaller integer multiple of **DRX** period if **NC_REPORTING_PERIOD_I** is greater than **DRX** period, else, the reporting period is **DRX** period

Reference:

3GPP TS 04.60 / 3GPP TS 44.060 subclause 5.6.1

3GPP TS 05.08 / 3GPP TS 45.008 subclause 10.1.4.1

42.4.6.1.2 Test purpose

To verify that the MS sends PEMR following the report type and according to the indicated reporting periods covering GSM neighbour list specified in SI2quater.

42.4.6.1.3 Method of test

Initial conditions

Transmitter	RF Signal Level (dBm)	NCC	BCC	Cell Identity
Serving, S1	-60	1	3	0001H
Neighbour, N1	-70	1	5	0002H

The ARFCN of the serving and neighbouring cell is selected from the default defined in section 40.

System simulator:

2 GPRS cells configured as GPRS cells with SI2 quater giving all adjacent cell configuration and GPRS PEMR parameters. SI13 and SI2quater indicate that Network Control Order is NC2. BCCH allocation sequence number(BA_IND) = 1

Mobile Station:

MS is Idle Updated

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is idle updated

Test procedure

MS is powered on and Attach procedure is completed. The negotiated Ready Timer value in ATTACH ACCEPT indicates the ready timer function is active for 60 seconds. When the measurement reporting time becomes valid, the MS sends a CHANNEL REQUEST message indicating 'Single block packet access' on RACH. The network shall then respond with an IMMEDIATE ASSIGNMENT message granting a 'single block access' on a PDCH. The mobile station shall then send the PACKET ENHANCED MEASUREMENT REPORT message in the allocated radio block on the assigned PDCH as indicated in the Measurement Parameters struct.

Maximum duration of the test

3 minutes

Expected Sequence

Step	Direction	Message	Comments
1		{Attach procedure}	-MS is GPRS attached with PTMSI allocated -Ready timer is set to 60 seconds
2	MS->SS	CHANNEL REQUEST	-Sent on RACH. -Cause 'Single block packet access'
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4A (optional)	MS -> SS	PACKET MEASUREMENT REPORT	Optionally sent once after Attach procedure
4B	MS -> SS	PACKET ENHANCED MEASUREMENT REPORT	Sent on the allocated PDCH
5			Repeat steps 2, 3 and 4B until expiry of the Ready timer. The SS verifies that the interval between two subsequent PEMR messages corresponds to the reporting period +/- 10%. The reporting period is calculated from NC_REPORTING_PERIOD_I rounded off to the nearest smaller integer multiple of DRX period if NC_REPORTING_PERIOD_I is greater than DRX period, else, the reporting period is DRX period.
6	SS		Verify that the mobile stops sending PEMR after Ready timer expiry.

Specific Message Contents

System Information 3 Rest Octets

SI2quarter_POSITION	0 (message is sent on BCCH Nom)
---------------------	---------------------------------

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PERIOD_I and NC_REPORTING_PERIOD_T field of the PSI5, the SI2quater, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message

On expiry of timer T3158, the mobile station shall restart timer T3158 with the indicated reporting period, perform the measurements and send either the PACKET MEASUREMENT REPORT message or the PACKET ENHANCED MEASUREMENT REPORT to the network. The condition for sending the PACKET ENHANCED MEASUREMENT REPORT message instead of the PACKET MEASUREMENT REPORT message is based on the REPORT_TYPE parameter and if the MS has received BSIC information for all cells.

- 2 In packet idle mode, the reporting period is NC_REPORTING_PERIOD_I rounded off to the nearest smaller integer multiple of DRX period if NC_REPORTING_PERIOD_I is greater than DRX period, else, the reporting period is DRX period

Reference:

3GPP TS 04.60 / 3GPP TS 44.060 subclause 5.6.1

3GPP TS 05.08 / 3GPP TS 45.008 subclause 10.1.4.1

42.4.6.3.2 Test purpose

To verify that the MS sends PEMR following the report type and according to the indicated reporting period specified in Packet Measurement Order.

42.4.6.3.3 Method of test

Initial conditions

Transmitter	RF Signal Level (dBm)	NCC	BCC	Cell Identity
Serving, S1	-60	1	3	0001H
Neighbour, N1	-70	1	5	0002H

The ARFCN of the serving and neighbouring cell is selected from the default defined in section 40.

System simulator:

- 2 GPRS cells configured as GPRS cells with SI2 quater giving adjacent cell configuration.

Mobile Station:

MS is Idle Updated

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is idle updated

Test procedure

MS is powered on and Attach procedure is completed. The negotiated Ready Timer value in ATTACH ACCEPT indicates the ready timer function is active for 32 seconds. A Packet Measurement Order is sent to the MS changing the scale order parameter as well as measurement reporting period. When the measurement reporting time becomes valid, the MS sends a CHANNEL REQUEST message indicating 'Single block without TBF establishment' on RACH. The network shall then respond with either a IMMEDIATE ASSIGNMENT message granting a 'Single block without TBF establishment' on a PDCH. The mobile station shall then send the PACKET ENHANCED MEASUREMENT REPORT message in the allocated radio block on the assigned PDCH as indicated in the Measurement Information struct.

Maximum duration of the test

3 minutes

Expected Sequence

Step	Direction	Message	Comments
1		{Attach procedure}	-MS is GPRS attached with PTMSI allocated
2	SS -> MS	IMMEDIATE ASSIGNMENT	-Ready timer is set to 32 seconds
3	SS->MS	PACKET MEASUREMENT ORDER	Sent on PCH -Scale Order changed to 1 -Measurement Reporting time changed to 7.68 secs
4	MS->SS	CHANNEL REQUEST	Sent on PACCH -Cause 'Single block without TBF establishment'
5	SS -> MS	IMMEDIATE ASSIGNMENT	
6	MS -> SS	PACKET ENHANCED MEASUREMENT REPORT	Sent on the allocated PDCH Scale = 1
7			Repeat steps 4, 5 and 6 until expiry of the Ready timer. The SS verifies that the interval between two subsequent PEMR messages corresponds to the reporting period +/- 10%. The reporting period is calculated from NC_REPORTING_PERIOD_I rounded off to the nearest smaller integer multiple of DRX period if NC_REPORTING_PERIOD_I is greater than DRX period, else, the reporting period is DRX period.
8	SS		Verify that the mobile stops sending PEMR after Ready timer expiry.

Specific Message Contents

System Information 3 Rest Octets

SI2quarter_POSITION	0 (message is sent on BCCH Nom)
---------------------	---------------------------------

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	100 (7.68s)
Enhanced Measurement Parameter Struct	
Report_Type	0 Enhanced measurement report
GPRS REP Priority Description	0 (default)
GPRS Measurement Parameter Description Struct	
Multiband reporting	00
Serving band reporting	1
SCALE_ORD	1
900_REPORTING_OFFSET	0
900_REPORTING_THRESHOLD	0

42.4.6.4 Network Control PEMR – Uplink Data Transfer

42.4.6.4.1 Conformance requirement

The behaviour of the mobile station is controlled by the parameter NETWORK_CONTROL_ORDER broadcast in the PSI5 message on PBCCH, in the SI13 and SI2quater messages on the BCCH and in the PSI13 message on PACCH. Alternatively, the network may send the NETWORK_CONTROL_ORDER parameters in a PACKET MEASUREMENT ORDER or in a PACKET CELL CHANGE ORDER message on PCCCH or PACCH to a particular mobile station .

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PERIOD_I and NC_REPORTING_PERIOD_T field of the PSI5, the SI2quater, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message

The procedure for NC measurement report sending shall be initiated by the mobile station at expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the timer T3158, perform the measurements and send either the PACKET MEASUREMENT REPORT message containing the 'NC measurement report struct' or the PACKET ENHANCED MEASUREMENT REPORT on PACCH.

42.4.6.4.2 Test Purpose

To verify that the MS sends PEMR during uplink packet transfer according to the indicated reporting type and reporting periods specified in SI2quater.

To verify that the MS sends PEMR during uplink packet transfer according to the indicated reporting type and reporting period specified in Packet Measurement Order.

Reference

3GPP TS 04.60, subclauses 5.6.1, 8.3 and 8.5.

42.4.6.4.3 Method of test

Initial conditions

Transmitter	RF Signal Level (dBm)	NCC	BCC	Cell Identity
Serving, S1	-60	1	3	0001H
Neighbour, N1	-70	1	5	0002H

The ARFCN of the serving and neighbouring cell is selected from the default defined in section 40.

System simulator:

2 cells configured as GPRS cells with SI2 quater giving adjacent cell configuration and GPRS PEMR parameters. Network Control Order is NC2.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in transfer mode.

Test procedure

MS is brought into uplink packet transfer mode. MS sends data blocks until T3158 is expired and then sends PACKET ENHANCED MEASUREMENT REPORT. SS sends a PACKET MEASUREMENT ORDER message with new reporting parameters. MS sends continuously data blocks and PACKET ENHANCED MEASUREMENT REPORT messages according to the indicated reporting period in PACKET MEASUREMENT ORDER

The SS shall accept PACKET ENHANCED MEASUREMENT REPORT from the MS anytime during GPRS attach and PDP Context activation procedures.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation one phase access with contention resolution } or {Uplink dynamic allocation two phase access}	MS is brought into uplink packet transfer mode. Macro parameters: USF_GRANULARITY : 1 RLC_DATA_BLOCKS_GRANTED : absent (open-end) CHANNEL_CODING_COMMAND : CS-1 TLLI_BLOCK_CHANNEL_CODING : CS-1
2	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
3	MS -> SS	RLC data block	MS sends data
4	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF assigned to MS
5			Repeat steps 3 and 4 until PACKET ENHANCED MEASUREMENT REPORT is received.
6	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	Sent on PACCH.
7	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
8	MS -> SS	RLC data block	MS sends data
9	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF assigned to MS
10			Repeat steps 8 and 9 until PACKET ENHANCED MEASUREMENT REPORT is received.
11	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	- Sent on PACCH. SS verifies that the time interval between steps 6 and 11 corresponds to the reporting period T3158 (indicated in SI2quater) +/- 10%.
12	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
13	MS -> SS	RLC data block	MS sends data.
14	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF not assigned to MS
15	SS ->MS	PACKET MEASUREMENT ORDER	- Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T with new reporting period. See specific message contents
16	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
17	MS -> SS	RLC data block	MS sends data.
18	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF assigned to MS
19			Repeat steps 17 and 18 until PACKET ENHANCED MEASUREMENT REPORT is received.
20	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	- Sent on PACCH.
21	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
22	MS -> SS	RLC data block	MS sends data.
23	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF assigned to MS
24			Repeat steps 22 and 23 until PACKET ENHANCED MEASUREMENT REPORT is received.
25	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	- Sent on PACCH. SS verifies that the time interval between steps 20 and 25 corresponds to the new reporting period T3158 (indicated in PMO) +/- 10%.
26			Repeat steps 21 to 25 till completion of the uplink data transfer.

PACKET MEASUREMENT ORDER in step 15:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_T	001 (0.96 s)
Enhanced Measurement Parameter Struct	
Report_Type	0 Enhanced measurement report
GPRS REP Priority Description	0 (default)
GPRS Measurement Parameter Description Struct	
Multiband reporting	00
Serving band reporting	1
SCALE_ORD	1
900_REPORTING_OFFSET	0
900_REPORTING_THRESHOLD	0

42.4.6.5 Network Control PEMR – Downlink Data Transfer

42.4.6.5.1 Conformance requirement

The behaviour of the mobile station is controlled by the parameter NETWORK_CONTROL_ORDER broadcast in the PSI5 message on PBCCH, in the SI13 and SI2quater messages on the BCCH and in the PSI13 message on PACCH. Alternatively, the network may send the NETWORK_CONTROL_ORDER parameters in a PACKET MEASUREMENT ORDER or in a PACKET CELL CHANGE ORDER message on PCCCH or PACCH to a particular mobile station.

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PERIOD_I and NC_REPORTING_PERIOD_T field of the PSI5, the SI2quater, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message

The procedure for NC measurement report sending shall be initiated by the mobile station at expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the timer T3158, perform the measurements and send either the PACKET MEASUREMENT REPORT message containing the 'NC measurement report struct' or the PACKET ENHANCED MEASUREMENT REPORT on PACCH.

Following a downlink TBF establishment, the PACKET MEASUREMENT REPORT or PACKET ENHANCED MEASUREMENT REPORT message shall not be sent on the uplink PACCH associated with this TBF until two PACKET DOWNLINK ACK/NACK messages has been sent to the network.

Reference

3GPP TS 44.060, subclauses 5.6.1, 8.3 and 8.5.

42.4.6.5.2 Test Purpose

To verify that the MS sends PEMR during downlink packet transfer according to the indicated reporting type and reporting periods specified in SI2 quater.

To verify that the MS sends PEMR during downlink packet transfer according to the indicated reporting type and reporting period specified in Packet Measurement Order.

42.4.6.5.3 Method of test

Initial conditions

Transmitter	RF Signal Level (dBm)	NCC	BCC	Cell Identity
Serving, S1	-60	1	3	0001H
Neighbour, N1	-70	1	5	0002H

The ARFCN of the serving and neighbouring cell is selected from the default defined in section 40.

System simulator:

2 cells configured as GPRS cells with SI2 quater giving adjacent cell configuration and GPRS PEMR parameters. Network Control Order is NC2.

Mobile Station:

MS is in Packet Idle mode and GPRS attached, Ready timer deactivated.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in transfer mode.

Test procedure

MS is brought into downlink packet transfer mode. SS sends data blocks and MS answers with PACKET DOWNLINK ACK/NACK. When reporting period has expired and at least two PACKET DOWNLINK ACK/NACK messages have been sent, MS sends a PACKET ENHANCED MEASUREMENT REPORT message. SS sends data blocks continuously and MS sends PACKET ENHANCED MEASUREMENT REPORT messages when reporting period has expired and at least one PACKET DOWNLINK ACK/NACK message has been sent after the last PACKET ENHANCED MEASUREMENT REPORT message.

The SS shall accept PACKET ENHANCED MEASUREMENT REPORT from the MS anytime during GPRS attach and PDP Context activation procedures.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	IMMEDIATE ASSIGNMENT	Downlink assignment. Sent on the PCH.
2	SS		Wait for 0.5 seconds.
3	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
4	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
5	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
7	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
8	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	- Sent on PACCH.
9	SS		Wait for 0.5 seconds.
10	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
11	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
12	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
13	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	- Sent on PACCH.
14	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
15	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
16	SS->MS	PACKET MEASUREMENT ORDER	- Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T with new reporting period. See specific message contents
17	SS		Wait for 1 sec
18	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
19	MS -> SS	PACKET ENHANCED MEASUREMENT REPORT	Sent on PACCH.
20	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
21	MS->SS	PACKET DOWNLINK ACK/NACK	- Sent on PACCH.
22	SS		Wait for 1sec.
23	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
24	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	- Sent on PACCH.
25			Wait for 1 sec
26	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
27	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.

Specific message contents

System Information 3 Rest Octets

SI2quarter_POSITION	0 (message is sent on BCCH Nom)
---------------------	---------------------------------

PACKET MEASUREMENT ORDER in step 16:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_T	001 (0.96 s)
Enhanced Measurement Parameter Struct	
Report_Type	0 Enhanced measurement report
GPRS REP Priority Description	0 (default)
GPRS Measurement Parameter	
Description Struct	
Multiband reporting	00
Serving band reporting	1
SCALE_ORD	1
900_REPORTING_OFFSET	0
900_REPORTING_THRESHOLD	0

42.4.6.6 Network Control PEMR / Packet Cell Change Order

42.4.6.6.1 Conformance requirement

For (NC) measurement reporting, the Mobile Station shall use PACKET ENHANCED MEASUREMENT REPORT messages instead of PACKET MEASUREMENT REPORT messages if that is indicated by the parameter REPORT_TYPE and if at least one BSIC is allocated to each frequency in the BA (GPRS) list.

Reference:

3GPP TS 04.60 / 3GPP TS 44.060 5.6.1

42.4.6.6.2 Test purpose

To verify that the MS sends PEMR following the report type specified in Packet Cell Change Order.

42.4.6.6.3 Method of test

Initial conditions

Transmitter	RF Signal Level (dBm)	NCC	BCC	Cell Identity
Serving, S1	-60	1	3	0001H
Neighbour, N1	-70	1	5	0002H

The ARFCN of the serving and neighbouring cell is selected from the default defined in section 40.

System simulator:

2 GPRS cells A and B SI2quater includes GPRS MEASUREMENT PARAMETERS description. In both cells Network Control Order is NC2 and PMR shall be used.

Mobile Station:

MS is Idle Updated and GPRS attached. Ready timer set to 1min.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is idle updated

Test procedure

MS is brought into downlink transfer mode. SS sends data blocks and MS answers with PACKET DOWNLINK ACK/NACK until at least one PACKET MEASUREMENT REPORT has been received.

SS sends then a PACKET CELL CHANGE ORDER message to MS ordering the MS to select Cell-B and to use NC2 and PEMR.

The MS performs a cell update.

MS is brought into downlink transfer mode. SS sends data blocks and MS answers with PACKET DOWNLINK ACK/NACK until at least one PACKET ENHANCED MEASUREMENT REPORT has been received.

Maximum duration of the test

3 minutes

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF, Sent on the PCH.
2	SS		Wait for 0.5 seconds.
3	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
4	MS -> SS	PACKET DOWNLINK ACK/NACK	
5	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
6	MS -> SS	PACKET DOWNLINK ACK/NACK or PACKET MEASUREMENT REPORT	
7			Repeat steps 5 and 6 for max 4s until at least one PACKET MEASUREMENT REPORT has been received.
8	SS->MS	PACKET CELL CHANGE ORDER	Commanding the MS to select Cell-B: See specific message contents
9			The following messages are to be sent and received in Cell B.
10	MS ->SS	CHANNEL REQUEST	
11	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS.
13	MS ->SS	UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating Cell Update.
14	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge the received RLC data block(s), Final Ack Indicator = '1', a valid RRBP.
15	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	
16	SS		Wait for 0.5 seconds.
17	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF, Sent on the PCH.
18	SS		Wait for 0.5 seconds.
19	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
20	MS -> SS	PACKET DOWNLINK ACK/NACK	
21	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
22	MS -> SS	PACKET DOWNLINK ACK/NACK or PACKET ENHANCED MEASUREMENT REPORT	
23			Repeat steps 21 and 22 for max 1s until at least one PACKET ENHANCED MEASUREMENT REPORT has been received.

24	SS -> MS	RLC data block	Last data block with FBI bit set and a valid RRB P field.
25	MS -> SS	PACKET DOWNLINK ACK/NACK	Indicating correct reception of downlink data blocks.

Specific Message Contents

PACKET CELL CHANGE ORDER in step 8

TLLI	As assigned to the MS
IMMEDIATE_REL	1 (Immediate release of the on-going TBF.)
ARFCN, BSIC	as specified for cell B
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_NON_DRX_PERIOD	111
NC_REPORTING_PERIOD_I	100(7.68 s)
NC_REPORTING_PERIOD_T	000(0.48 s)
Enhanced Measurement Parameter Struct	
PMO_IND	0
REPORT_TYPE	0 Enhanced measurement report
REPORTING_RATE	0
INVALID_BSIC_REPORTING	0
3G Neighbour Cell Description	0
GPRS REP Priority Description	0
GPRS Measurement Parameter Description	0
GPRS 3G Measurement Parameter Description	0

42.4.6.7 Void

42.4.7 Inter-RAT (GPRS to UTRAN) Cell Change Order

42.4.7.1 Inter-RAT Cell Change Order (Known Cell) – Uplink Data Transfer

42.4.7.1.1 Conformance requirement

For a multi-RAT mobile station, the PACKET CELL CHANGE ORDER message may contain information on a 3G target cell, together with the IMMEDIATE_REL parameter; in the case of UTRAN establishment of UTRAN channel(s) and subsequent measurement reporting are defined in 3GPP TS 25.331.

Upon receipt of the PACKET CELL CHANGE ORDER message the mobile station shall start timer T3174 and apply the cell reselection procedure defined in subclause 5.5.1.1. with the additional rule that an immediate abort of operation in the old cell may be required by the network through the IMMEDIATE_REL field, except for the acknowledgement, by means of a PACKET CONTROL ACKNOWLEDGEMENT message, of a valid RRB P field possibly included in the PACKET CELL CHANGE ORDER message. The mobile station shall obey the PACKET CELL CHANGE ORDER message irrespective of whether or not the mobile station has any knowledge of the relative synchronisation of the target cell to the serving cell. A UTRAN capable mobile station shall obey the command irrespective of whether the cell is known or not known (see 3GPP TS 25.133 and 3GPP TS 25.123).

For a multi-RAT mobile station, the PACKET CELL CHANGE ORDER message may contain information on a 3G target cell, together with the IMMEDIATE_REL parameter; in the case of UTRAN establishment of UTRAN channel(s) and subsequent measurement reporting are defined in 3GPP TS 25.331.

- The UE shall:

- 1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell change order";

NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.

- 1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3.

For a UTRAN target cell, the mobile station regards the procedure as completed when it has received a successful response to its RRC Connection Request message, see 3GPP TS 25.331. It shall then stop timer T3174.

42.4.7.1.2 Test Purpose

To verify the when NC2 is commanded, the MS sends PACKET ENHANCED MEASUREMENT REPORT messages, in which both the serving and non-serving cells are reported.

To verify that when the cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message with the IMMEDIATE_REL value set to 1, the MS shall abort any TBF in progress and stop transmitting.

To verify that the MS switches to the commanded UTRAN cell.

Reference

3GPP TS 04.60, subclause 8.4.

3GPP TS 25.331 subclause 8.3.10

42.4.7.1.3 Method of test

Initial conditions

System simulator:

2 cells - Cell A is GPRS, Cell B is UTRAN (activated at power ON)

3GPP TS 34.108, subclause 6.1 shall be referenced for default parameters of Cell 2.

3GPP TS 34.123-3, subclause 8.3.2 shall be referenced for configuring channels on Cell 2.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in CELL_DCH state.

Test procedure

MS is brought into uplink packet transfer mode. SS commands MS to NC2 with PACKET MEASUREMENT ORDER. SS waits for a PACKET ENHANCED MEASUREMENT REPORT to contain measurement results for both cell A and cell B. SS sends a PACKET CELL CHANGE ORDER message. SS checks that there is no traffic on the old cell. MS switches to the UTRAN cell and re-establishes the data transfer.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1			MS is brought into uplink packet transfer mode. TBF is active from steps 1-6. In order to keep TBF active, sufficient data is to be injected to MS.
2	MS -> SS		MS sends Uplink data
3	SS ->MS	PACKET MEASUREMENT ORDER	- Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T See specific message contents
4a	MS -> SS		MS sends Uplink data.
4b	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
5			Repeat steps 4a/4b until the information on UTRAN cell is included in the PEMR.
6	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. IMMEDIATE_REL bit is set to "1" Contains -Details of cell B (UTRAN cell). See specific message contents
7	MS->SS	RRC CONNECTION REQUEST	Received on Cell B (UTRAN cell) CCCH. Establishment Cause = Inter-RAT cell change order
8	SS->MS	RRC CONNECTION SETUP	Sent on CCCH
9	MS->SS	RRC CONNECTION SETUP COMPLETE	Sent on DCCH (Mobile is in CELL_DCH state)

Specific message contents

PACKET MEASUREMENT ORDER in step 5:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_T	010 (1.92 s)
Enhanced Measurement Parameter Struct	
Report_Type	0 Enhanced measurement report
3G Neighbour Cell Description	1
UTRAN FDD Description	1
0 1 < Bandwidth_FDD	0 (use present FDD band width)
Repeated UTRAN FDD Neighbour Cells	
FDD-ARFCN	ref 34.108
FDD_Indic0	0
NR_OF_FDD_CELLS	1

PACKET CELL CHANGE ORDER in Step 9

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 10	0
< GLOBAL_TFI : Global TFI IE >	<5 bit Uplink TFI>
0 1	1
Message escape	00
< IMMEDIATE_REL >	1 (Immediate abort of operation in the old cell is required)
3G-target cell struct	
0 1	1
< FDD-ARFCN : bit (14) >	ref 34.108
< Diversity : bit >	0 (Diversity not applied in the cell)
0 1 < Bandwidth_FDD : bit (3) >	0 (use present FDD band width)
< SCRAMBLING_CODE : bit (9) >	Ref 34.108
< padding bits >	

42.4.7.2 Inter-RAT Cell Change Order (Unknown Cell) – Uplink Data Transfer

42.4.7.2.1 Conformance requirement

For a multi-RAT mobile station, the PACKET CELL CHANGE ORDER message may contain information on a 3G target cell, together with the IMMEDIATE_REL parameter; in the case of UTRAN establishment of UTRAN channel(s) and subsequent measurement reporting are defined in 3GPP TS 25.331.

Upon receipt of the PACKET CELL CHANGE ORDER message the mobile station shall start timer T3174 and apply the cell reselection procedure defined in subclause 5.5.1.1. with the additional rule that an immediate abort of operation in the old cell may be required by the network through the IMMEDIATE_REL field, except for the acknowledgement, by means of a PACKET CONTROL ACKNOWLEDGEMENT message, of a valid RRBP field possibly included in the PACKET CELL CHANGE ORDER message. The mobile station shall obey the PACKET CELL CHANGE ORDER message irrespective of whether or not the mobile station has any knowledge of the relative synchronisation of the target cell to the serving cell. A UTRAN capable mobile station shall obey the command irrespective of whether the cell is known or not known (see 3GPP TS 25.133 and 3GPP TS 25.123).

For a multi-RAT mobile station, the PACKET CELL CHANGE ORDER message may contain information on a 3G target cell, together with the IMMEDIATE_REL parameter; in the case of UTRAN establishment of UTRAN channel(s) and subsequent measurement reporting are defined in 3GPP TS 25.331.

- The UE shall:

- 1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell change order";

NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.

- 1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3.

For a UTRAN target cell, the mobile station regards the procedure as completed when it has received a successful response to its RRC Connection Request message, see 3GPP TS 25.331. It shall then stop timer T3174.

42.4.7.2.2 Test Purpose

To verify that when the cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message with the IMMEDIATE_REL value set to 1, the MS shall abort any TBF in progress and stop transmitting.

To verify that the MS switches to the commanded UTRAN cell.

Reference

3GPP TS 04.60, subclause 8.4.

3GPP TS 25.331 subclause 8.3.10

42.4.7.2.3 Method of test

Initial conditions

System simulator:

2 cells - Cell A is GPRS (NC2), Cell B is UTRAN (activated at power ON)

3GPP TS 34.108, subclause 6.1 shall be referenced for default parameters of Cell 2.

3GPP TS 34.123-3, subclause 8.3.2 shall be referenced for configuring channels on Cell 2.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in CELL_DCH state.

Test procedure

MS is brought into uplink packet transfer mode. SS sends a PACKET CELL CHANGE ORDER message. SS checks that there is no traffic on the old cell. MS switches to the UTRAN cell and re-establishes the data transfer.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1			MS is brought into uplink packet transfer mode. TBF is active from steps 1-3. In order to keep TBF active, sufficient data is to be injected to MS.
2	MS -> SS		MS sends Uplink data
3	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. IMMEDIATE_REL bit is set to "1" Contains -Details of cell B (UTRAN cell). See specific message contents
4	MS->SS	RRC CONNECTION REQUEST	Received on Cell B (UTRAN cell) CCCH. Establishment Cause = Inter-RAT cell change order
5	SS->MS	RRC CONNECTION SETUP	Sent on CCCH
6	MS->SS	RRC CONNECTION SETUP COMPLETE	Sent on DCCH (Mobile is in CELL_DCH state)

Specific message contents

PACKET CELL CHANGE ORDER in Step 5

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 10	0
< GLOBAL_TFI : Global TFI IE >	<5 bit Uplink TFI>
0 1	1
Message escape	00
< IMMEDIATE_REL >	1 (Immediate abort of operation in the old cell is required)
3G-target cell struct	
0 1	1
< FDD-ARFCN : bit (14) >	ref 34.108
< Diversity : bit >	0 (Diversity not applied in the cell)
0 1 < Bandwidth_FDD : bit (3) >	0 (use present FDD band width)
< SCRAMBLING_CODE : bit (9) >	Ref 34.108
< padding bits >	

42.4.7.3 Inter-RAT Cell Change Order (Known Cell) – Downlink Data Transfer

42.4.7.3.1 Conformance requirement

For a multi-RAT mobile station, the PACKET CELL CHANGE ORDER message may contain information on a 3G target cell, together with the IMMEDIATE_REL parameter; in the case of UTRAN establishment of UTRAN channel(s) and subsequent measurement reporting are defined in 3GPP TS 25.331.

Upon receipt of the PACKET CELL CHANGE ORDER message the mobile station shall start timer T3174 and apply the cell reselection procedure defined in subclause 5.5.1.1. with the additional rule that an immediate abort of operation in the old cell may be required by the network through the IMMEDIATE_REL field, except for the acknowledgement,

by means of a PACKET CONTROL ACKNOWLEDGEMENT message, of a valid RRBP field possibly included in the PACKET CELL CHANGE ORDER message. The mobile station shall obey the PACKET CELL CHANGE ORDER message irrespective of whether or not the mobile station has any knowledge of the relative synchronisation of the target cell to the serving cell. A UTRAN capable mobile station shall obey the command irrespective of whether the cell is known or not known (see 3GPP TS 25.133 and 3GPP TS 25.123).

For a multi-RAT mobile station, the PACKET CELL CHANGE ORDER message may contain information on a 3G target cell, together with the IMMEDIATE_REL parameter; in the case of UTRAN establishment of UTRAN channel(s) and subsequent measurement reporting are defined in 3GPP TS 25.331.

- The UE shall:

1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell change order";

NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.

1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3.

For a UTRAN target cell, the mobile station regards the procedure as completed when it has received a successful response to its RRC Connection Request message, see 3GPP TS 25.331. It shall then stop timer T3174.

42.4.7.3.2 Test Purpose

To verify that when the cell change order procedure is started when the MS receives PACKET CELL CHANGE ORDER message with the IMMEDIATE_REL value set to 1.

To verify that the MS switches to the commanded UTRAN cell.

Reference

3GPP TS 04.60, subclause 8.4.

3GPP TS 25.331 subclause 8.3.10

42.4.7.3.3 Method of test

Initial conditions

System simulator:

2 cells - Cell A is GPRS, Cell B is UTRAN (activated at power ON)

3GPP TS 34.108, subclause 6.1 shall be referenced for default parameters of Cell 2.

3GPP TS 34.123-3, subclause 8.3.2 shall be referenced for configuring channels on Cell 2.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in CELL_DCH state.

Test procedure

MS is brought into downlink packet transfer mode. SS commands MS to NC2 with PACKET MEASUREMENT ORDER. SS waits for a PACKET ENHANCED MEASUREMENT REPORT to contain measurement results for both

cell A and cell B. SS sends a PACKET CELL CHANGE ORDER message. MS switches to the UTRAN cell and completes the cell change order procedure.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PCCCH.
2	SS ->MS	PACKET MEASUREMENT ORDER	- Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T See specific message contents
3	SS->MS		SS sends downlink data,
4	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	Sent on PACCH.
5	SS		Repeat steps 3-4 until measurement results for cell B are included in the PACKET ENHANCED MEASUREMENT REPORT message The TBF is maintained during the procedure.
6	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. IMMEDIATE_REL bit is set to "1" Contains -Details of cell B (UTRAN cell). See specific message contents
7	MS->SS	RRC CONNECTION REQUEST	Received on Cell B (UTRAN cell) CCCH. Establishment Cause = Inter-RAT cell change order
8	SS->MS	RRC CONNECTION SETUP	Sent on CCCH
9	MS->SS	RRC CONNECTION SETUP COMPLETE	Sent on DCCH (Mobile is in CELL_DCH state)

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_T	010 (1.92 s)
Enhanced Measurement Parameter Struct	
Report_Type	0 Enhanced measurement report
3G Neighbour Cell Description	1
UTRAN FDD Description	1
0 1 < Bandwidth_FDD	0 (use present FDD band width)
Repeated UTRAN FDD Neighbour Cells	
FDD-ARFCN	ref 34.108
FDD_Indic0	0
NR_OF_FDD_CELLS	1

PACKET CELL CHANGE ORDER in Step 6

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 10	0
< GLOBAL_TFI : Global TFI IE >	<5 bit Uplink TFI>
0 1	1
Message escape	00
< IMMEDIATE_REL >	1 (Immediate abort of operation in the old cell is required)
3G-target cell struct	
0 1	1
< FDD-ARFCN : bit (14) >	ref 34.108
< Diversity : bit >	0 (Diversity not applied in the cell)
0 1 < Bandwidth_FDD : bit (3) >	0 (use present FDD band width)
< SCRAMBLING_CODE : bit (9) >	Ref 34.108
< padding bits >	

42.4.7.4 Inter-RAT Cell Change Order (Known Cell) – Simultaneous uplink and downlink transfer

42.4.7.4.1 Conformance requirement

For a multi-RAT mobile station, the PACKET CELL CHANGE ORDER message may contain information on a 3G target cell, together with the IMMEDIATE_REL parameter; in the case of UTRAN establishment of UTRAN channel(s) and subsequent measurement reporting are defined in 3GPP TS 25.331.

Upon receipt of the PACKET CELL CHANGE ORDER message the mobile station shall start timer T3174 and apply the cell reselection procedure defined in subclause 5.5.1.1. with the additional rule that an immediate abort of operation in the old cell may be required by the network through the IMMEDIATE_REL field, except for the acknowledgement, by means of a PACKET CONTROL ACKNOWLEDGEMENT message, of a valid RRB P field possibly included in the PACKET CELL CHANGE ORDER message. The mobile station shall obey the PACKET CELL CHANGE ORDER message irrespective of whether or not the mobile station has any knowledge of the relative synchronisation of the target cell to the serving cell. A UTRAN capable mobile station shall obey the command irrespective of whether the cell is known or not known (see 3GPP TS 25.133 and 3GPP TS 25.123).

For a multi-RAT mobile station, the PACKET CELL CHANGE ORDER message may contain information on a 3G target cell, together with the IMMEDIATE_REL parameter; in the case of UTRAN establishment of UTRAN channel(s) and subsequent measurement reporting are defined in 3GPP TS 25.331.

- The UE shall:

- 1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell change order";

NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.

- 1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3.

For a UTRAN target cell, the mobile station regards the procedure as completed when it has received a successful response to its RRC Connection Request message, see 3GPP TS 25.331. It shall then stop timer T3174.

42.4.7.4.2 Test Purpose

To verify that when the cell change order procedure is started by sending a PACKET CELL CHANGE ORDER message with the IMMEDIATE_REL value set to 1, the MS shall abort any TBF in progress and stop transmitting.

To verify that the MS switches to the commanded UTRAN cell.

Reference

3GPP TS 04.60, subclause 8.4.

3GPP TS 25.331 subclause 8.3.10

42.4.7.4.3 Method of test

Initial conditions

System simulator:

2 cells - Cell A is GPRS, Cell B is UTRAN (activated at power ON)

3GPP TS 34.108, subclause 6.1 shall be referenced for default parameters of Cell 2.

3GPP TS 34.123-3, subclause 8.3.2 shall be referenced for configuring channels on Cell 2.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

PDP context established.

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in CELL_DCH state.

Test procedure

MS is brought into simultaneous uplink and downlink packet transfer mode. SS commands MS to NC2 with PACKET MEASUREMENT ORDER. SS waits for a PACKET ENHANCED MEASUREMENT REPORT to contain measurement results for both cell A and cell B. SS sends a PACKET CELL CHANGE ORDER message with IMMEDIATE_REL value set to 1 to force the mobile to release all ongoing TBFs. MS switches to the UTRAN cell and completes the cell change order procedure.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1			MS is brought into uplink packet transfer mode. TBF is active from steps 1-6. In order to keep TBF active, sufficient data is to be injected to MS.
2	SS ->MS	PACKET MEASUREMENT ORDER	- Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T See specific message contents
3	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PACCH.
4a	MS -> SS		MS sends Uplink data.
4b	MS->SS	PACKET ENHANCED MEASUREMENT REPORT	
5	SS -> MS		SS sends downlink data,
6	SS		Repeat steps 4-5 until measurement results for cell B are included in the PACKET ENHANCED MEASUREMENT REPORT message
7	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. IMMEDIATE_REL bit is set to "1" Contains -Details of cell B (UTRAN cell). See specific message contents
8	MS->SS	RRC CONNECTION REQUEST	Received on Cell B (UTRAN cell) CCCH. Establishment Cause = Inter-RAT cell change order
9	SS->MS	RRC CONNECTION SETUP	Sent on CCCH
10	MS->SS	RRC CONNECTION SETUP COMPLETE	Sent on DCCH (Mobile is in CELL_DCH state)

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_T	010 (1.92 s)
Enhanced Measurement Parameter Struct	
Report_Type	0 Enhanced measurement report
3G_Neighbour_Cell_Description	1
UTRAN_FDD_Description	1
0 1 < Bandwidth_FDD	0 (use present FDD band width)
Repeated UTRAN FDD Neighbour Cells	
FDD-ARFCN	ref 34.108
FDD_Indic0	0
NR_OF_FDD_CELLS	1

PACKET CELL CHANGE ORDER in Step 11

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 10	0
< GLOBAL_TFI : Global TFI IE >	<5 bit Uplink TFI>
0 1	1
Message escape	00
< IMMEDIATE_REL >	1 (Immediate abort of operation in the old cell is required)
3G-target cell struct	
0 1	1
< FDD-ARFCN : bit (14) >	ref 34.108
< Diversity : bit >	0 (Diversity not applied in the cell)
0 1 < Bandwidth_FDD : bit (3) >	0 (use present FDD band width)
< SCRAMBLING_CODE : bit (9) >	Ref 34.108

< padding bits >

42.4.7.5 Inter-RAT (GPRS to UTRAN) Cell Change Order (Known cell) / Failure

42.4.7.5.1 Inter-RAT (GPRS to UTRAN) Cell Change Order (Known cell) / Failure / Uplink transfer / T3174 expiry

42.4.7.5.1.1 Conformance requirement

In the following cases, the mobile station shall determine that the network controlled cell reselection procedure has failed:

- The PACKET CELL CHANGE ORDER message commands the mobile station to a frequency in a frequency band not supported by the mobile station. *Cause*: “frequency not implemented”.
- The PACKET CELL CHANGE ORDER message is received while a circuit switched connection is on going. *Cause*: “on-going CS connection”.
- In *A/Gb mode*, the PACKET CELL CHANGE ORDER message is received and the GMM READY timer (see 3GPP TS 24.008) is not running (i.e., mobile station in GMM STAND-BY state). *Cause*, if the GMM READY timer has a negotiated value equal to zero: “Forced to the Standby State”. *Cause*, if the GMM READY timer has a negotiated value greater than zero: “MS in GMM Standby state”.
- Access is denied in the new cell (i.e., the mobile station receives an IMMEDIATE ASSIGNMENT REJECT, a PACKET ASSIGNMENT REJECT or, in a UTRAN cell, an RRC CONNECTION REJECT message). *Cause*: “Immediate Assign Reject or Packet Access Reject on target cell”.
- The mobile station is unable to synchronise to the new cell (see 3GPP TS 45.008) or the timer T3174 expires before a successful completion of the network controlled cell reselection procedure. *Cause*: “No response on target cell”.
- Due to any other reason (e.g. unknown or unsupported target cell information). In this case the MS shall set the ARFCN and BSIC fields to the value zero and set the cause to value “frequency not implemented”.

If the mobile station determines that the network controlled cell reselection procedure has failed, the mobile station shall stop timer T3174 (if it is still running) and start timer T3176. The mobile station shall return to the old cell, where it may trigger a cell update or other GMM specific procedure. In case the mobile station synchronised and attempted to access the new cell before returning to the old cell, the mobile station shall trigger a cell update or other GMM specific procedure, as appropriate according to the GMM requirements (see 3GPP TS 24.008).

The mobile station shall send a PACKET CELL CHANGE FAILURE message with the appropriate cause value to the network in the old cell and stop timer T3176. The PACKET CELL CHANGE FAILURE message may be sent on PACCH when the mobile station is in packet transfer mode, dual transfer mode or MAC-Shared state. Alternatively, the mobile station may initiate random access with access type “single block without TBF establishment” (PCCCH) / “single block packet access” (CCCH) and send the PACKET CELL CHANGE FAILURE message using an allocated single uplink block.

Reference

3GPP TS 044.060, subclause 8.4.2

42.4.7.5.1.2 Test Purpose

To verify that an MS in uplink packet transfer mode when commanded by a PACKET CELL CHANGE ORDER, reports a PACKET CELL CHANGE FAILURE on the old GPRS cell due to the expiry of T3174 before receiving response to RRC CONNECTION REQUEST on target UTRAN cell.

42.4.7.5.1.3 Method of test

Initial conditions

System Simulator:

- 2 cells, Cell A, GPRS Supported without PBCCH, NC2.

- Cell B is a UTRAN cell. UTRAN cell is the better cell of the two cells. It is activated after MS is GPRS attached to Cell A. 3GPP TS 34.108, subclause 6.1 shall be referenced for default parameters of Cell B except that T300 and N300 are to be set to the maximum values (8000 milliseconds for T300 and 7 for N300). 3GPP TS 34.123-3, subclause 8.3.2 shall be referenced for configuring channels on Cell B.
- 3G Neighbour Cell Description of Cell A refers to the UTRAN Cell B. XXX_MUTIRAT_REPORTING is set to 1. REPORT_TYPE is set to indicate the usage of Packet Enhanced Measurement Report.

Mobile Station:

- MS is in Packet Idle mode and GPRS attached on Cell A.
- PDP context 2 established

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in Packet transfer mode in the GPRS cell.

Test procedure

MS is brought into uplink packet transfer mode. MS sends PEMR with UTRAN cell information. SS sends the PACKET CELL CHANGE ORDER message giving a UTRAN cell description to the MS. MS sends RRC Connection Request on the UTRAN cell. The SS does not respond to the request and timer T3174 expires. MS returns to the old cell, sends a PACKET CELL CHANGE FAILURE message to the SS and continues data transfer on the old cell.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS	{Uplink dynamic allocation one phase access}	Initiate uplink transfer of 1500 octets. The TBF is active at steps 2-3 and 7-9.
2a	MS -> SS	Uplink data	MS sends uplink data.
2b	MS -> SS	PACKET ENHANCED MEASUREMENT REPORT	Sent on PACCH. Contains NC Measurement Report struct.
3			Repeat steps 2a and 2b until UTRAN cell information is sent in PEMR.
4	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains Description of the UTRAN cell. See specific message contents.
5	MS -> SS	RRC CONNECTION REQUEST	To the UTRAN cell.
6	SS		SS does not respond to the request until timer T3174 has expired. During this period MS will retransmit RRC CONNECTION REQUEST after the expiry of T300.
7	MS -> SS	CHANNEL REQUEST	After the expiry of T3174, to the old cell within 15 sec.
8	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH, Dynamic allocation
9	MS -> SS	PACKET CELL CHANGE FAILURE	Sent when USF is allocated to the MS. Error cause: " No response on target cell "
11			See specific message contents (MS may perform ROUTING AREA UPDATE procedure)

Note: MS will send Packet Enhanced Measurement Report at the expiry of T3158 during the entire test case.

Specific message contents

PACKET CELL CHANGE ORDER in Step 3

Information element	Value/remark
< PAGE_MODE : bit (2) > 0 10	00 (Normal Paging) 0
< GLOBAL_TFI : Global TFI IE > 0 1	< Uplink TFI> 1
Message escape	00
< IMMEDIATE_REL > 3G-target cell struct	1 (Immediate abort of operation in the old cell is required)
0 1	1
< FDD-ARFCN : bit (14) >	ref 34.108
< Diversity : bit >	0 (Diversity not applied in the cell)
0 1 < Bandwidth_FDD : bit (3) >	0 (use present FDD band width)
< SCRAMBLING_CODE : bit (9) >	Ref 34.108
< padding bits >	

PACKET CELL CHANGE FAILURE in step 9:

Packet Cell Change Failure message content: CAUSE	0001 (No response on target cell)
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42.4.7.5.2 Inter-RAT (GPRS to UTRAN) Cell Change Order (Known cell) / Failure / Downlink transfer / REJECT from target UTRAN cell with Inter-RAT info set to GSM.

42.4.7.5.2.1 Conformance requirement

In the following cases, the mobile station shall determine that the network controlled cell reselection procedure has failed:

- The PACKET CELL CHANGE ORDER message commands the mobile station to a frequency in a frequency band not supported by the mobile station. *Cause*: “frequency not implemented”.
- The PACKET CELL CHANGE ORDER message is received while a circuit switched connection is on going. *Cause*: “on-going CS connection”.
- In *A/Gb mode*, the PACKET CELL CHANGE ORDER message is received and the GMM READY timer (see 3GPP TS 24.008) is not running (i.e., mobile station in GMM STAND-BY state). *Cause*, if the GMM READY timer has a negotiated value equal to zero: “Forced to the Standby State”. *Cause*, if the GMM READY timer has a negotiated value greater than zero: “MS in GMM Standby state”.
- Access is denied in the new cell (i.e., the mobile station receives an IMMEDIATE ASSIGNMENT REJECT, a PACKET ASSIGNMENT REJECT or, in a UTRAN cell, an RRC CONNECTION REJECT message). *Cause*: “Immediate Assign Reject or Packet Access Reject on target cell”.
- The mobile station is unable to synchronise to the new cell (see 3GPP TS 45.008) or the timer T3174 expires before a successful completion of the network controlled cell reselection procedure. *Cause*: “No response on target cell”.
- Due to any other reason (e.g. unknown or unsupported target cell information). In this case the MS shall set the ARFCN and BSIC fields to the value zero and set the cause to value “frequency not implemented”.

If the mobile station determines that the network controlled cell reselection procedure has failed, the mobile station shall stop timer T3174 (if it is still running) and start timer T3176. The mobile station shall return to the old cell, where it may trigger a cell update or other GMM specific procedure. In case the mobile station synchronised and attempted to access the new cell before returning to the old cell, the mobile station shall trigger a cell update or other GMM specific procedure, as appropriate according to the GMM requirements (see 3GPP TS 24.008).

The mobile station shall send a PACKET CELL CHANGE FAILURE message with the appropriate cause value to the network in the old cell and stop timer T3176. The PACKET CELL CHANGE FAILURE message may be sent on PACCH when the mobile station is in packet transfer mode, dual transfer mode or MAC-Shared state. Alternatively, the mobile station may initiate random access with access type “single block without TBF establishment” (PCCCH) / “single block packet access” (CCCH) and send the PACKET CELL CHANGE FAILURE message using an allocated single uplink block.

Reference

3GPP TS 04.60, Chapter 8.4.2

42.4.7.5.2.2 Test Purpose

To verify that an MS in downlink packet transfer mode when commanded by a PACKET CELL CHANGE ORDER, reports PACKET CELL CHANGE FAILURE on the old GPRS cell if an RRC CONNECTION REJECT with Inter-RAT info set to GSM is received on the target UTRAN cell.

42.4.7.5.2.3 Method of test

Initial conditions

System Simulator:

- 2 cells, Cell A, GPRS Supported without PBCCH, NC2. Cell B is a UTRAN cell. Cell Selection conditions favour Cell A. 3G Neighbour Cell Description of Cell A refers to UTRAN Cell B. XXX_MUTIRAT_REPORTING is set to 1. REPORT_TYPE is set to indicate the usage of Packet Enhanced Measurement Report.
- 3GPP TS 34.108, subclause 6.1 shall be referenced for default parameters of Cell B.
- 3GPP TS 34.123-3, subclause 8.3.2 shall be referenced for configuring channels on Cell B.

Mobile Station:

- MS is in Packet Idle mode and GPRS attached on cell A.
- PDP context 2 established

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS idle in GPRS cell

Test procedure

MS is brought into downlink packet transfer mode. MS sends PEMR with UTRAN cell information. SS sends the PACKET CELL CHANGE ORDER message to the MS. MS tries to establish RRC connection with UTRAN cell. SS sends the RRC Connection Reject including Inter-RAT info set to “GSM”. MS returns to the old cell and sends PACKET CELL CHANGE FAILURE message to the network. It is verified that the MS can continue downlink transfer on the old cell once a downlink TBF is established.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on PCH.
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	
2a	SS -> MS	Downlink data	SS sends downlink data.
2b	MS -> SS	PACKET ENHANCED MEASUREMENT REPORT	Sent on PACCH when USF is assigned to the MS. Contains NC Measurement Report struct.
3			Repeat steps 2a and 2b until UTRAN cell information is sent in PEMR.
4	SS -> MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains description of UTRAN cell. See specific message contents.
5	MS -> SS	RRC CONNECTION REQUEST	On the target UTRAN cell.
6	SS -> MS	RRC CONNECTION REJECT	Received from the Target UTRAN cell, including a Inter-RAT info set to GSM
7	MS -> SS	CHANNEL REQUEST	To the old cell within 15 sec from message sent in step 6.
8	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH
9	MS -> SS	PACKET CELL CHANGE FAILURE	Error cause:" Packet Access Reject on target cell " See specific message content
10			(MS may perform ROUTING AREA UPDATE procedure)
11a	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on PCH.
11b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	
12	SS -> MS	Downlink data	SS sends downlink data.

NOTE: MS will send Packet Enhanced Measurement Report at the expiry of T3158 during the entire test case.

Specific message contents

PACKET CELL CHANGE ORDER in Step 3

Information element	Value/remark
< PAGE_MODE : bit (2) >	00 (Normal Paging)
0 10	0
< GLOBAL_TFI : Global TFI IE >	< Uplink TFI>
0 1	1
Message escape	00
< IMMEDIATE_REL >	1 (Immediate abort of operation in the old cell is required)
3G-target cell struct	
0 1	1
< FDD-ARFCN : bit (14) >	ref 34.108
< Diversity : bit >	0 (Diversity not applied in the cell)
0 1 < Bandwidth_FDD : bit (3) >	0 (use present FDD band width)
< SCRAMBLING_CODE : bit (9) >	Ref 34.108
< padding bits >	

RRC CONNECTION REJECT in step 5:

Redirectioninfo InterRATInfo	GSM
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PACKET CELL CHANGE FAILURE in step 8:

Packet Cell Change Failure message content: CAUSE	0010 (Packet Access Reject on target cell)
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42.4.8 NC2 Procedures

42.4.8.1 NC2 and DRX

42.4.8.1.1 NC2 and DRX / NC_NON_DRX_PERIOD / Respect of NC2 non-DRX mode period

42.4.8.1.1.1 Conformance requirement

There are four cases when the mobile station shall enter a non-DRX mode period.

- 1) At the transition from the packet transfer mode to the packet idle mode, the mobile station shall enter the Transfer non-DRX mode period.
- 2) At the transition from the dual transfer mode to the dedicated mode or packet idle mode, the mobile station shall enter the Transfer non-DRX mode period.

In both cases, the duration of the Transfer non-DRX mode period is determined by value of the NON_DRX_TIMER parameter, requested in the *GPRS attach procedure*, and the value of the DRX_TIMER_MAX parameter broadcast in the cell. The mobile station may use the minimum value of these two parameters.

If the mobile station receives a new value of the DRX_TIMER_MAX parameter during the Transfer non-DRX mode period, the mobile station may wait to apply the new value until the next time the Transfer non-DRX mode period is entered.

- 3) A mobile station operating in NC2 mode shall enter the NC2 non-DRX mode period when it sends an NC measurement report. The duration of this period is defined by the NC_NON_DRX_PERIOD parameter.
- 4) When initiating the MM procedures for *GPRS attach* and *routing area update* defined in 3GPP TS 04.08, the mobile station shall enter the MM non-DRX mode period. This period ends when either of the messages GPRS ATTACH ACCEPT, GPRS ATTACH REJECT, ROUTING AREA UPDATE ACCEPT or ROUTING AREA UPDATE REJECT is received by the mobile station. This period also ends after timeout when waiting for any of these messages.

The non-DRX mode periods defined above run independent of each other and may overlap. The non-DRX mode periods have effect only in packet idle mode. In packet idle mode, the mobile station shall be in non-DRX mode during any of the non-DRX mode periods. Otherwise, the mobile station in packet idle mode may be in DRX mode.

42.4.8.1.1.2 Test Purpose

To verify that an MS in Idle mode enters and remains in the non-drx mode only for the duration of NC2 non-DRX mode period which is equal to NC_NON_DRX_PERIOD parameter, when it sends a NC measurement report

Reference

3GPP TS 44.060, sub-clause 5.5.1.5.

42.4.8.1.1.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

MS is in Packet Idle mode and GPRS attached.

Test PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Test procedure

SS sends a PACKET MEASUREMENT ORDER message to MS. NETWORK_CONTROL_ORDER is commanded to be NC2. NC_NON_DRX_PERIOD is commanded to be 1.92 Sec.

At the end of reporting period, MS sends a PACKET MEASUREMENT REPORT to the SS. After receiving the PACKET MEASUREMENT REPORT message, SS waits for $0.8 * NC_NON_DRX_PERIOD$ and sends a PAGING REQUEST message addressing the MS, in a Paging sub-channel not belonging to MS paging subgroup.

SS verifies that MS responds to the Paging.

SS waits for $1.1 * NC_NON_DRX_PERIOD$ and sends a PAGING REQUEST message addressing the MS, in a Paging sub-channel not belonging to MS paging subgroup.

SS verifies that MS does not respond to the Paging.

Maximum duration of the test

5 min

Expected sequence

Step	Direction	Message	Comments
1a	SS->MS	IMMEDIATE ASSIGNMENT	Sent on a PCH block corresponding to the MS's paging group, including a packet downlink assignment. Triggers the MS to monitor the assigned PDCH.
1b	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH.
2	MS ->SS	CHANNEL REQUEST	See specific message contents Establishment cause = 'Single block packet access'
3	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Allocating a single block to the MS to transmit Packet Measurement Report message.
4	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH.
5	SS		Wait for $0.8 \cdot NC_NON_DRX_PERIOD$
6	SS->MS	PAGING REQUEST	Sent on a PCH not belonging to the MS paging subgroup.
7	MS ->SS	CHANNEL REQUEST	Received on RACH Establishment Cause = 'One phase packet access'
8	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Sent on AGCH. Packet request reference = pertaining to the message received in step 7.
9	MS ->SS	CHANNEL REQUEST	Establishment cause = 'Single block packet access'
10	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Allocating a single block to the MS to transmit Packet Measurement Report message.
11	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH.
12	SS		Wait until $1.1 \cdot NC_NON_DRX_PERIOD$ after Step 11.
13	SS->MS	PAGING REQUEST	Sent on a PCH not belonging to the MS paging subgroup.
14	SS		SS verifies that MS does not respond to the paging in Step 13

Specific message contents

PACKET MEASUREMENT ORDER in step 1b:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	100 (7.68 sec)
NC_NON_DRX_PERIOD	111 (1.92 sec)
NC_FREQUENCY_LIST	0 (not present)

42.4.8.1.2 NC2 and DRX / NC_NON_DRX_PERIOD / NC2 non-DRX mode period ordered in Packet Cell Change Order

42.4.8.1.2.1 Conformance requirement

A mobile station operating in NC2 mode shall enter the NC2 non-DRX mode period when it sends an NC measurement report. The duration of this period is defined by the NC_NON_DRX_PERIOD parameter.

The non-DRX mode periods have effect only in packet idle mode. In packet idle mode, the mobile station shall be in non-DRX mode during any of the non-DRX mode periods. Otherwise, the mobile station in packet idle mode may be in DRX mode.

The behaviour of the mobile station is controlled by the parameter NETWORK_CONTROL_ORDER broadcast in the PSI5 message on PBCCH, in the SI13 and SI2quater messages on the BCCH and in the PSI13 message on PACCH. Alternatively, the network may send the NETWORK_CONTROL_ORDER parameters in a PACKET MEASUREMENT ORDER or in a PACKET CELL CHANGE ORDER message on PCCCH or PACCH to a particular mobile station. The parameter NETWORK_CONTROL_ORDER may have one of the values NC0, NC1, NC2 or RESET.

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PERIOD_I and NC_REPORTING_PERIOD_T field of the PSI5, the SI2quater, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message. If NC_NON_DRX_PERIOD, NC_REPORTING_PERIOD_I or NC_REPORTING_PERIOD_T have not been received by the mobile station the default values shall be used. The mobile station shall apply to the timer T3158 either the NC_REPORTING_PERIOD_I when in packet idle mode or the NC_REPORTING_PERIOD_T when in packet transfer mode.

A mobile station in packet idle mode shall take into account the page mode information in any message received in a radio block on PCCCH corresponding to its paging group. The mobile station shall not take into account the page mode information in a message received in any other radio block than those corresponding to its paging group. The requirements yielded by the page mode information are as follows:

- *normal paging*: no additional requirements;

[...]

- *paging reorganization*: The mobile station shall receive all messages on the PCCCH regardless of the BS_PAG_BLK_RES setting. It is required to receive all PBCCH messages. When the mobile station receives the next message to its (possibly new) paging group, subsequent action is defined by the page mode information in that message;

Reference

3GPP TS 44.060, sub-clauses 5.5.1.5, 5.5.1.6, 5.6.1

42.4.8.1.2.2 Test Purpose

To verify that when an MS selects a new cell as ordered using a PACKET CELL CHANGE ORDER message, the MS takes into consideration and respects the NC_NON_DRX_PERIOD parameter sent in a PACKET CELL CHANGE ORDER message in the new cell.

42.4.8.1.2.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported.

Mobile Station:

MS is GPRS attached in Cell-A and is in Packet Idle mode. Ready Timer set to 5 min.

Test PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Test procedure

SS sends a PACKET MEASUREMENT ORDER message to MS ordering the MS to send measurement, the MS starts sending measurements. SS continues receiving measurements until measurement results of cell B are included. SS sends then a PACKET CELL CHANGE ORDER message to MS ordering the MS to select Cell-B. NETWORK_CONTROL_ORDER is commanded to be NC2. NC_NON_DRX_PERIOD for Cell-B is commanded to be 1.2 Sec.

MS selects Cell-B.

At the end of reporting period, MS sends a PACKET MEASUREMENT REPORT to the SS on Cell-B, this is done twice. After receiving the second PACKET MEASUREMENT REPORT message, the SS waits for $0.8 * NC_NON_DRX_PERIOD$ and sends a PAGING REQUEST message addressing the MS, in a Paging sub-channel not belonging to MS paging subgroup.

SS verifies that MS responds to the Paging.

At the end of next reporting period, MS sends a PACKET MEASUREMENT REPORT to the SS on Cell-B. After receiving the PACKET MEASUREMENT REPORT message, the SS waits for $1.1 * NC_NON_DRX_PERIOD$ and sends a PAGING REQUEST message addressing the MS, in a Paging sub-channel not belonging to MS paging subgroup.

SS verifies that MS does not respond to the Paging.

Maximum duration of the test

5 min

Expected sequence

Step	Direction	Message	Comments
1a	SS->MS	IMMEDIATE ASSIGNMENT	Sent on a PCH block corresponding to the MS's paging group, including a packet downlink assignment. Triggers the MS to monitor the assigned PDCH.
1b	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH. See specific message contents
2	MS ->SS	CHANNEL REQUEST	-Cause 'Single block packet access'
3	SS->MS	IMMEDIATE ASSIGNMENT	
4	MS ->SS	PACKET MEASUREMENT REPORT	
5			Repeat steps 2-4 until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message.
6a	SS->MS	IMMEDIATE ASSIGNMENT	Sent on a PCH block corresponding to the MS's paging group, including a packet downlink assignment. Triggers the MS to monitor the assigned PDCH.
6b	SS->MS	PACKET CELL CHANGE ORDER	-Sent on PACCH. - Commanding the MS to select Cell-B See specific message contents
			The following messages are to be sent and received in Cell B.
7	MS ->SS	CHANNEL REQUEST	Received on RACH. Establishment cause = 'One phase packet access'
8	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Open-ended Dynamic Allocation.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS.
10	MS ->SS	UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating Cell Update
11	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge the received RLC data block(s), Final Ack Indicator = '1', a valid RRBP. Sent on PACCH.
12	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on PACCH.
13	MS ->SS	CHANNEL REQUEST	Establishment cause = 'Single block packet access'
14	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Allocating a single block to the MS to transmit Packet Measurement Report message.
15	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH
15bis			Step 13-16 are repeated once.
16	SS		Wait for 0.8*NC_NON_DRX_PERIOD
17	SS->MS	PAGING REQUEST	Sent on a PCH not belonging to the MS paging subgroup.
18	MS ->SS	CHANNEL REQUEST	Received on RACH Establishment Cause = 'One phase packet access'
19	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Sent on AGCH. Packet request reference = pertaining to the message received in step 18. Without WAIT_INDICATION IE

20	MS ->SS	CHANNEL REQUEST	Establishment cause = 'Single block packet access' SS verifies that CHANNEL REQUEST arrives at the end of correct reporting period.
21	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Allocating a single block to the MS to transmit Packet Measurement Report message.
22	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH
23	SS		Wait for 1.1*NC_NON_DRX_PERIOD
24	SS->MS	PAGING REQUEST	Sent on a PCH not belonging to the MS paging subgroup.
25	SS		SS verifies that MS does not respond to Paging in Step 24.

Specific message contents

PACKET MEASUREMENT ORDER in step 1b:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_I	10 (NC2) 100 (7.68s)
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PACKET CELL CHANGE ORDER in step 6b

TLLI	As assigned to the MS
IMMEDIATE_REL	1
ARFCN, BSIC	as specified for cell B
NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_I	10 (NC2) 101 (15.36 s)
NC_NON_DRX_PERIOD	101 (1.2 sec)
NC_FREQUENCY_LIST	0 (not present)

42.4.8.1.3 Void

42.4.8.1.4 NC2 and DRX / NC_NON_DRX_PERIOD / NC2 non-DRX mode period broadcast in SI2Quater

42.4.8.1.4.1 Conformance requirement

A mobile station operating in NC2 mode shall enter the NC2 non-DRX mode period when it sends an NC measurement report. The duration of this period is defined by the NC_NON_DRX_PERIOD parameter.

The non-DRX mode periods have effect only in packet idle mode. In packet idle mode, the mobile station shall be in non-DRX mode during any of the non-DRX mode periods. Otherwise, the mobile station in packet idle mode may be in DRX mode.

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PERIOD_I and NC_REPORTING_PERIOD_T field of the PSI5, the SI2quater, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message. If NC_NON_DRX_PERIOD, NC_REPORTING_PERIOD_I or NC_REPORTING_PERIOD_T have not been received by the mobile station the default values shall be used. The mobile station shall apply to the timer T3158 either the NC_REPORTING_PERIOD_I when in packet idle mode or the NC_REPORTING_PERIOD_T when in packet transfer mode.

If no parameters have been brought from the old cell, and until individual measurement parameters are received in the new cell, the mobile station shall use the broadcast measurement parameters from PSI5 if a PBCCH is allocated in the cell or SI2quater if a PBCCH is not allocated in the cell or use the default parameter values.

The mobile station in idle mode is required to receive and analyse the paging messages and immediate assignment messages sent on the paging subchannel corresponding to its paging subgroup, as specified in 3GPP TS 05.02.

[...]

This implies that a given mobile station shall take into account the page mode information element of any message sent on its own paging subchannel whatever the nature of this message (paging messages or immediate assignment messages). This further implies that the mobile station does not take into account page mode information element of messages sent on paging subchannels other than its own paging subchannel. The requirements yielded by the page mode information element are as follows:

- normal paging: no additional requirements;

[...]

- paging reorganization: The mobile station shall receive all messages on the CCCH regardless of the BS-AG-BLKS-RES setting. It is required to receive all BCCH messages. When the mobile station receives the next message to its (possibly new) paging subgroup the subsequent action is defined in the page mode information element in that message.

Reference

3GPP TS 44.060, sub-clauses 5.5.1.5, 5.6.1

3GPP TS 24.008, sub-clauses 3.3.2.1.1

42.4.8.1.4.2 Test Purpose

To verify that when an MS selects a new cell and if no parameters have been brought from the old cell, the MS uses the broadcast measurement parameter NC_NON_DRX_PERIOD from SI2quater if PBCCH is not allocated in the new cell.

42.4.8.1.4.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported

SI2quater transmitted (Rest Octet as described in the Specific Message Contents).

Mobile Station:

MS is GPRS attached in Cell-A and is in Packet Idle mode. Ready Timer set to 5 min.

Test PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Test procedure

SS sends a PACKET MEASUREMENT ORDER message to MS ordering the MS to send measurement, the MS starts sending measurements. SS continues receiving measurements until measurement results of cell B are included. SS sends then a PACKET CELL CHANGE ORDER message to MS ordering the MS to select Cell-B. NETWORK_CONTROL_ORDER is commanded to be NC2. Measurement parameters are omitted from the message.

MS selects Cell-B.

At the end of reporting period as specified in SI2quarter message broadcast in Cell-B, MS sends a PACKET MEASUREMENT REPORT to the SS on Cell-B, this is done twice. After receiving the second PACKET MEASUREMENT REPORT message, the SS waits for $0.8 * NC_NON_DRX_PERIOD$ period as specified in SI2quarter message broadcast in Cell-B and sends a PAGING REQUEST TYPE 1 message addressing the MS, in a Paging sub-channel not belonging to MS paging subgroup.

SS verifies that MS responds to the Paging.

At the end of next reporting period, MS sends a PACKET MEASUREMENT REPORT to the SS on Cell-B. After receiving the PACKET MEASUREMENT REPORT message, the SS waits for $1.1 * NC_NON_DRX_PERIOD$ and sends a PAGING REQUEST TYPE 1 message addressing the MS, in a Paging sub-channel not belonging to MS paging subgroup.

SS verifies that MS does not respond to the Paging.

Maximum duration of the test

5 min

Expected sequence

Step	Direction	Message	Comments
1a	SS->MS	IMMEDIATE ASSIGNMENT	Sent on a PCH block corresponding to the MS's paging group, including a packet downlink assignment. Triggers the MS to monitor the assigned PDCH.
1b	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. See specific message contents
2	MS ->SS	CHANNEL REQUEST	-Cause 'Single block packet access'
3	SS->MS	IMMEDIATE ASSIGNMENT	
4	MS ->SS	PACKET MEASUREMENT REPORT	
5			Repeat steps 2-4 until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message.
6a	SS->MS	IMMEDIATE ASSIGNMENT	Sent on a PCH block corresponding to the MS's paging group, including a packet downlink assignment. Triggers the MS to monitor the assigned PDCH.
6b	SS->MS	PACKET CELL CHANGE ORDER	-Sent on PACCH. - Commanding the MS to select Cell-B See specific message contents
			The following messages are to be sent and received in Cell B.
7	MS ->SS	CHANNEL REQUEST	Establishment cause = 'one phase packet access'. Received on RACH. Sent on AGCH. Open-ended Dynamic Allocation. Sent on PACCH containing USF assigned to the MS. LLC PDU implicitly indicating Cell Update Acknowledge the received RLC data block(s), Final Ack Indicator = '1', a valid RRBP. Sent on PACCH. Received on PACCH.
8	SS -> MS	IMMEDIATE ASSIGNMENT	
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	
10	MS ->SS	UPLINK RLC DATA BLOCK	
11	SS -> MS	PACKET UPLINK ACK/NACK	
12	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	
13	MS ->SS	CHANNEL REQUEST	
14	SS -> MS	IMMEDIATE ASSIGNMENT	
15	MS ->SS	PACKET MEASUREMENT REPORT	
15bis			
16	SS		
17	SS->MS	PAGING REQUEST TYPE 1	Sent on PCH not belonging to the MS paging subgroup. 1 st Mobility Identity contains P-TMSI of the MS, 2 nd Mobility Identity not present. Page Mode = 'Normal Paging'. Packet Page Indication indicates a packet paging procedure.
18	MS-> SS	CHANNEL REQUEST	Establishment Cause = 'one phase packet access'. Received on RACH.
19	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Random Reference = pertaining to the message received in step 18, Sent on AGCH.
20	MS ->SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access' SS verifies that the CHANNEL REQUEST arrives at the end of correct reporting period.
21	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Single block Allocation.
22	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH

23	SS		Wait for 1.1*NC_NON_DRX_PERIOD broadcast in SI2quarter
24	SS->MS	PAGING REQUEST TYPE 1	Sent on a PCH not belonging to the MS paging subgroup. 1 st Mobility Identity contains P-TMSI of the MS, 2 nd Mobility Identity not present. Page Mode = 'Normal Paging'. Packet Page Indication indicates a packet paging procedure. SS verifies that MS does not respond to Paging in Step 24.
25	SS		

Specific message contents

-

System Information Type 2quarter (Cell-B)

BA_IND	0
3G_BA_IND	0
MP_CHANGE_MARK	0
SI2quarter_INDEX	0
SI2quarter_COUNT	0
Measurement_Parameters Description	0 (Not present)
GPRS_Real Time Difference Description	0 (Not present)
GPRS_BSIC Description	0 (Not present)
GPRS_MEASUREMENT_Parameters Description	1 (Present)
REPORT_TYPE	1 (Normal)
REPORTING_RATE	0 (Normal)
INVALID_BSIC_REPORTING	0 (No)
MULTIBAND_REPORTING	00
SERVING_BAND_REPORTING	00
SCALE_ORD	00
	00000 (No reporting Threshold or Reporting Offset)
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_NON_DRX_PERIOD	101 (1.2 sec)
NC_REPORTING_PERIOD_I	101 (15.36 sec)
extension length	0 (Not present)
3G Neighbour Cell Description	0 (Not present)
3G Measurement Parameters Description	0 (Not present)
GPRS_3G_MEASUREMENT Parameters Description	0 (Not present)

System Information Type 13 (Cell-B)

NETWORK_CONTROL_ORDER	10 (NC2)
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PACKET MEASUREMENT ORDER in step 1:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	100 (7.68s)

PACKET CELL CHANGE ORDER in step 6b

TLLI	As assigned to the MS
IMMEDIATE_REL	1
ARFCN, BSIC	as specified for cell B
NC Measurement parameters	
NETWORK_CONTROL_ORDER	11 (RESET)
	0 (Measurement parameters not present)
NC_FREQUENCY_LIST	0 (Not present)

42.4.8.1.5 Void

42.4.8.1.6 NC2 and DRX / NC_NON_DRX_PERIOD / NC2 non-DRX mode period / PBCCH absent / Default Value

42.4.8.1.6.1 Conformance requirement

A mobile station operating in NC2 mode shall enter the NC2 non-DRX mode period when it sends an NC measurement report. The duration of this period is defined by the NC_NON_DRX_PERIOD parameter.

The non-DRX mode periods have effect only in packet idle mode. In packet idle mode, the mobile station shall be in non-DRX mode during any of the non-DRX mode periods. Otherwise, the mobile station in packet idle mode may be in DRX mode.

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PERIOD_I and NC_REPORTING_PERIOD_T field of the PSI5, the SI2quater, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message. If NC_NON_DRX_PERIOD, NC_REPORTING_PERIOD_I or NC_REPORTING_PERIOD_T have not been received by the mobile station the default values shall be used. The mobile station shall apply to the timer T3158 either the NC_REPORTING_PERIOD_I when in packet idle mode or the NC_REPORTING_PERIOD_T when in packet transfer mode.

If no parameters have been brought from the old cell, and until individual measurement parameters are received in the new cell, the mobile station shall use the broadcast measurement parameters from PSI5 if a PBCCH is allocated in the cell or SI2quater if a PBCCH is not allocated in the cell or use the default parameter values.

The mobile station in idle mode is required to receive and analyse the paging messages and immediate assignment messages sent on the paging subchannel corresponding to its paging subgroup, as specified in 3GPP TS 05.02.

[...]

This implies that a given mobile station shall take into account the page mode information element of any message sent on its own paging subchannel whatever the nature of this message (paging messages or immediate assignment messages). This further implies that the mobile station does not take into account page mode information element of messages sent on paging subchannels other than its own paging subchannel. The requirements yielded by the page mode information element are as follows:

- normal paging: no additional requirements;

[...]

- paging reorganization: The mobile station shall receive all messages on the CCCH regardless of the BS-AG-BLKS-RES setting. It is required to receive all BCCH messages. When the mobile station receives the next message to its (possibly new) paging subgroup the subsequent action is defined in the page mode information element in that message.

Reference

3GPP TS 44.060, sub-clauses 5.5.1.5, 5.6.1

3GPP TS 24.008, sub-clauses 3.3.2.1.1

42.4.8.1.6.2 Test Purpose

To verify that when an MS selects a new cell and if no parameters have been brought from the old cell, the MS uses the default value of NC_NON_DRX_PERIOD parameter if NC Measurement Parameters are not included in the SI2quarter broadcast in the new cell.

42.4.8.1.6.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported

SI2quarter transmitted (Rest Octet as described in the Specific Message Contents).

Mobile Station:

MS is GPRS attached in Cell-A and is in Packet Idle mode. Ready timer set to 5 min.

Test PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Test procedure

SS sends a PACKET MEASUREMENT ORDER message to MS ordering the MS to send measurement, the MS starts sending measurements. SS continues receiving measurements until measurement results of cell B are included. SS sends then a PACKET CELL CHANGE ORDER message to MS ordering the MS to select Cell-B. NETWORK_CONTROL_ORDER is commanded to be NC2. Measurement parameters are omitted from the message.

MS selects Cell-B.

At the end of reporting period as specified in SI2quarter message broadcast in Cell-B, MS sends a PACKET MEASUREMENT REPORT to the SS on Cell-B. After receiving the PACKET MEASUREMENT REPORT message, the SS waits for $0.8 \cdot \text{NC_NON_DRX_PERIOD}$ period as specified in SI2quarter message broadcast in Cell-B and sends a PAGING REQUEST TYPE 1 message addressing the MS, in a Paging sub-channel not belonging to MS paging subgroup.

SS verifies that MS responds to the Paging.

At the end of next reporting period, MS sends a PACKET MEASUREMENT REPORT to the SS on Cell-B. After receiving the PACKET MEASUREMENT REPORT message, the SS waits for $1.1 \cdot \text{NC_NON_DRX_PERIOD}$ and sends a PAGING REQUEST TYPE 1 message addressing the MS, in a Paging sub-channel not belonging to MS paging subgroup.

SS verifies that MS does not respond to the Paging.

Maximum duration of the test

5 min

Expected sequence

Step	Direction	Message	Comments
1a	SS->MS	IMMEDIATE ASSIGNMENT	Sent on a PCH block corresponding to the MS's paging group, including a packet downlink assignment. Triggers the MS to monitor the assigned PDCH.
1	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. See specific message contents
2	MS ->SS	CHANNEL REQUEST	-Cause 'Single block packet access'
3	SS->MS	IMMEDIATE ASSIGNMENT	
4	MS ->SS	PACKET MEASUREMENT REPORT	
5			Repeat steps 2-4 until measurement results for cell B are included in the PACKET MEASUREMENT REPORT message.
6a	SS->MS	IMMEDIATE ASSIGNMENT	Sent on a PCH block corresponding to the MS's paging group, including a packet downlink assignment. Triggers the MS to monitor the assigned PDCH.
6b	SS->MS	PACKET CELL CHANGE ORDER	-Sent on PACCH. - Commanding the MS to select Cell-B See specific message contents
			The following messages are to be sent and received in Cell B.
7	MS ->SS	CHANNEL REQUEST	ACCESS TYPE = 'one phase access'. Received on RACH.
8	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Open-ended Dynamic Allocation.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS.
10	MS ->SS	UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating Cell Update
11	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge the received RLC data block(s), Final Ack Indicator = '1', a valid RRBP. Sent on PACCH.
12	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on PACCH.
13	MS ->SS	CHANNEL REQUEST	. Establishment Cause = 'Single block packet access'
14	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Single block Allocation.
15	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH
16	SS		Wait for 0.8*(NC_NON_DRX_PERIOD default value = 0.48 sec)
17	SS->MS	PAGING REQUEST TYPE 1	Sent on PCH not belonging to the MS paging subgroup. 1 st Mobility Identity contains P-TMSI of the MS, 2 nd Mobility Identity not present. Page Mode = 'Normal Paging'. Packet Page Indication indicates a packet paging procedure.

18	MS-> SS	CHANNEL REQUEST	Establishment Cause = 'one phase packet access'. Received on RACH.
19	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Random Reference = pertaining to the message received in step 18, Sent on AGCH.
20	MS ->SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access' SS verifies that the CHANNEL REQUEST arrives at the end of correct reporting period.
21	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Single block Allocation.
22	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH
23	SS		Wait for 1.1*(NC_NON_DRX_PERIOD default value = 0.48 sec)
24	SS->MS	PAGING REQUEST TYPE 1	Sent on a PCH not belonging to the MS paging subgroup. 1 st Mobility Identity contains P-TMSI of the MS, 2 nd Mobility Identity not present. Page Mode = "Normal Paging". Packet Page Indication indicates a packet paging procedure.
25	SS		SS verifies that MS does not respond to Paging in Step 24.

Specific message contents

System Information Type 2quarter (Cell-B)

BA_IND	0
3G_BA_IND	0
MP_CHANGE_MARK	0
SI2quarter_INDEX	0
SI2quarter_COUNT	0
Measurement_Parameters Description	0 (Not present)
GPRS_Real Time Difference Description	0 (Not present)
GPRS_BSIC Description	0 (Not present)
GPRS_MEASUREMENT_Parameters Description	1 (Present)
REPORT_TYPE	1 (Normal)
REPORTING_RATE	0 (Normal)
INVALID_BSIC_REPORTING	0 (No)
MULTIBAND_REPORTING	00
SERVING_BAND_REPORTING	00
SCALE_ORD	00
	00000 (No reporting Threshold or Reporting Offset)
NC Measurement Parameters	0 (Not present)
extension length	0 (Not present)
3G Neighbour Cell Description	0 (Not present)
3G Measurement Parameters Description	0 (Not present)
GPRS_3G_MEASUREMENT Parameters Description	0 (Not present)

System Information Type 13 (Cell-B)

NETWORK_CONTROL_ORDER	10 (NC2)
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PACKET MEASUREMENT ORDER in step 1b:

NC Measurement parameters NETWORK_CONTROL_ORDER	10 (NC2) 0 (Measurement parameters not present)
NC_FREQUENCY_LIST	0 (Not present)

PACKET CELL CHANGE ORDER in step 6b

TLLI	As assigned to the MS
IMMEDIATE_REL	1
ARFCN, BSIC	as specified for cell B
NC Measurement parameters NETWORK_CONTROL_ORDER	10 (NC2) 0 (Measurement parameters not present)
NC_FREQUENCY_LIST	0 (Not present)

42.4.8.2 User Data vs Measurement Report Sending / Conflict situation

42.4.8.2.1 Void

42.4.8.2.2 User Data vs Measurement Report Sending / Conflict situation / Expiry of T3192 and T3158

42.4.8.2.2.1 Conformance requirement

The mobile station shall apply to the timer T3158 either the NC_REPORTING_PERIOD_I when in packet idle mode or the NC_REPORTING_PERIOD_T when in packet transfer mode.

On expiry of timer T3158, the mobile station shall restart timer T3158 with the indicated reporting period, perform the measurements and send either the PACKET MEASUREMENT REPORT message or the PACKET ENHANCED MEASUREMENT REPORT to the network.

A mobile station in mode NC1 or NC2 may receive a new indicated reporting period or change packet mode while timer T3158 is active. If the new indicated reporting period is less than the time to expiry of timer T3158, the mobile station shall immediately restart timer T3158 with the new indicated reporting period. Otherwise, the timer T3158 shall continue to run.

42.4.8.2.2.2 Test Purpose

To verify that if T3158 expires before the MS leaves Downlink Packet Transfer mode, the MS waits till T3192 expires before it initiate a Packet Access procedure to send PACKET MEASUREMENT REPORT message.

Reference

3GPP TS 04.60, sub-clauses 5.6.1, 9.3.2.6

42.4.8.2.2.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported.

T3192 set to 1500 msec in GPRS_CELL_OPTIONS

Mobile Station:

MS is GPRS attached and is in Packet Idle mode. Ready Timer set to 5 min.

Test PDP context 2 established.

Specific PICS Statements

-

PIXIT Statements

-

Test procedure

SS establishes a downlink TBF.

While the TBF is active SS sends a PACKET MEASUREMENT ORDER message to MS. NETWORK_CONTROL_ORDER is commanded to be NC2. . At the end of reporting period MS sends a PACKET MEASUREMENT REPORT.

SS sends a Downlink RLC Data block with FBI set to '1' after $0.8 * NC_REPORTING_PERIOD_T$ with a valid RRBp. SS verifies that MS sends a PACKET DOWNLINK ACK/NACK with FAI set to '1'.

SS waits till T3158 expire at the MS and sends Downlink RLC Data block with FBI set to '1' with a valid RRBp. SS verifies that MS again sends a PACKET DOWNLINK ACK/NACK with FAI set to '1'.

SS verifies that MS initiate a Packet Access procedure to send PACKET MEASUREMENT REPORT, immediately after the expiry of T3192.

Maximum duration of the test

5 min

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	IMMEDIATE ASSIGNMENT	Sent on PCH. Addressing the MS using TLLI. Allocating downlink TBF.
2	SS->MS	DOWNLINK RLC DATA BLOCK	Addressing the MS. With a valid RRBp.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the PACCH block allocated in Step 2.
4	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. See specific message contents
5	SS->MS	DOWNLINK RLC DATA BLOCK	Addressing the MS. With a valid RRBp.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the PACCH block allocated in Step 5.

7			Repeat Step 5 and Step 6 until PACKET MEASUREMENT REPORT is received instead of PACKET DOWNLINK ACK/NACK in Step 6.
8	SS		SS waits for 0.8*NC_REPORTING_PERIOD_T after receiving PACKET MEASUREMENT REPORT in Step 7
9	SS->MS	DOWNLINK RLC DATA BLOCK	With FBI set to '1' With a valid RRBP.
10	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the PACCH block allocated in Step 9. SS verifies that FAI is set to '1'.
11	SS		SS waits until 1.1*NC_REPORTING_PERIOD_T after receiving PACKET MEASUREMENT REPORT in Step 7 is elapsed.
12	SS->MS	DOWNLINK RLC DATA BLOCK	With FBI set to '1' With a valid RRBP N+13.
13	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the PACCH block allocated in Step 12. SS verifies that FAI is set to '1'.
14	MS -> SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access' SS verifies that CHANNEL REQUEST arrives later than T3192 msec from Step 13.
15	SS->MS	IMMEDIATE ASSIGNMENT REJECT	Sent on AGCH. Packet request reference = pertaining to the message received in step 14

Specific message contents

PACKET MEASUREMENT ORDER in step 4:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_T	010 (1.92 sec)
NC_REPORTING_PERIOD_I	011 (3.84 sec)
NC_NON_DRX_PERIOD	010 (0.48 sec) (default value)
NC_FREQUENCY_LIST	0 (not present)

42.4.8.2.3 User Data vs Measurement Report Sending / Conflict situation / Expiry of T3182 and T3158

42.4.8.2.3.1 Conformance requirement

The mobile station shall apply to the timer T3158 either the NC_REPORTING_PERIOD_I when in packet idle mode or the NC_REPORTING_PERIOD_T when in packet transfer mode.

On expiry of timer T3158, the mobile station shall restart timer T3158 with the indicated reporting period, perform the measurements and send either the PACKET MEASUREMENT REPORT message or the PACKET ENHANCED MEASUREMENT REPORT to the network.

A mobile station in mode NC1 or NC2 may receive a new indicated reporting period or change packet mode while timer T3158 is active. If the new indicated reporting period is less than the time to expiry of timer T3158, the mobile station shall immediately restart timer T3158 with the new indicated reporting period. Otherwise, the timer T3158 shall continue to run.

The mobile station shall transmit RLC/MAC blocks with the following priority:

- RLC/MAC control blocks, except Packet Uplink Dummy Control Blocks
- RLC data blocks
 - RLC/MAC control blocks containing Packet Uplink Dummy Control Blocks

42.4.8.2.3.2 Test Purpose

To verify that if T3158 expires before the MS leaves Uplink Packet Transfer mode and after MS has started T3182

- 1 the MS will send a PACKET MEASUREMENT REPORT to the SS if uplink resource is allocated before the expiry of T3182.
- 2 the MS will initiate a Access procedure after T3182 is stopped, if no uplink resource is allocated to the MS while T3182 is running.

Reference

3GPP TS 04.60, sub-clauses 5.6.1, 8.1.1, 9.3.2.6

42.4.8.2.3.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

MS is GPRS attached and is in Packet Idle mode. Ready Timer set to 5 min.

Test PDP context2 established.

Specific PICS Statements

-

PIXIT Statements

-

Test procedure

An uplink TBF is established.

While the TBF is active SS sends a PACKET MEASUREMENT ORDER message to MS.

NETWORK_CONTROL_ORDER is commanded to be NC2. NC_REPORTING_PERIOD_T is chosen to be less than T3182.

The USF allocation is controlled by the SS so that T3158 is running when MS sends RLC Data block with CV=0

At the end of reporting period MS sends a PACKET MEASUREMENT REPORT.

SS sends a PACKET DOWNLINK DUMMY CONTROL BLOCK after the expiry of T3158 and while T3182 is running. SS verifies that MS sends a PACKET MEASUREMENT REPORT in the allocated radio block.

SS waits till T3158 expires while T3182 is still running. SS sends a PACKET UPLINK ACK/NACK with FAI set to '1'.

SS verifies that MS sends a PACKET CONTROL ACK and releases the TBF.

SS verifies that MS initiates an Access procedure to send PACKET MEASUREMENT REPORT after releasing the TBF.

Maximum duration of the test

5 min

Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	Macro parameters: N=400 octets USF_GRANULARITY: 1 RLC_DATA_BLOCKS_GRANTED: absent (open-end) CHANNEL_CODING_COMMAND: CS-1 TLLI_BLOCK_CHANNEL_CODING: CS-1
2	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
3	MS -> SS	Uplink RLC Data block	Received on the assigned PDCH.
4	SS->MS	PACKET MEASUREMENT ORDER	Sent on PACCH. USF not assigned to MS See specific message contents
5	SS		Wait for 3 block periods
6	SS->MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF assigned to MS
7	MS -> SS	Uplink RLC Data block	Received on the assigned PDCH.
8			Repeat Steps 5 to 7 until a PACKET MEASUREMENT REPORT is received instead of Uplink RLC Data block in Step 7 Note: Each execution of Steps 5 to 7 takes about 100 msec.
9	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, USF assigned to MS
10	MS -> SS	Uplink RLC Data block	Received on the assigned PDCH.
11			Repeat Steps 9 and 10 until the data block with CV=0 is received. SS should allow the MS the send one PACKET MEASUREMENT REPORT instead of an Uplink RLC Data block in step 10
12	SS		Wait until 1.1* NC_REPORTING_PERIOD_T after last PACKET MEASUREMENT REPORT was received (step 7 or 10).
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH, USF assigned to MS
14	MS ->SS	PACKET MEASUREMENT REPORT	Received on the assigned PDCH.
15	SS		Wait until 1.1* NC_REPORTING_PERIOD_T after last PACKET MEASUREMENT REPORT was received (step 14).
16	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH, FAI set to '1', with a valid RRBP.
17	MS ->SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the allocated PACCH block.
18	MS -> SS	CHANNEL REQUEST	Access Type = 'Single block packet access'
19	SS->MS	IMMEDIATE ASSIGNMENT REJECT	Sent onAGCH. Access request reference = pertaining to the message received in step 18

Specific message contents

PACKET MEASUREMENT ORDER in step 4:

NC Measurement parameters	
NC_REPORTING_PERIOD_T	001 (0.96 sec)
NC_REPORTING_PERIOD_I	011 (3.84 sec)
NC_FREQUENCY_LIST	0 (not present)

42.4.8.2.4 User Data vs Measurement Report Sending / Conflict situation / Random Access procedure for PMR sending and User Data transmission

42.4.8.2.4.1 Conformance requirement

The behaviour of the mobile station is controlled by the parameter NETWORK_CONTROL_ORDER broadcast in the PSI5 message on PBCCH, in the SI13 and SI2quater messages on the BCCH and in the PSI13 message on PACCH. Alternatively, the network may send the NETWORK_CONTROL_ORDER parameters in a PACKET MEASUREMENT ORDER or in a PACKET CELL CHANGE ORDER message on PCCCH or PACCH to a particular mobile station. The parameter NETWORK_CONTROL_ORDER may have one of the values NC0, NC1, NC2 or RESET

On expiry of timer T3158, the mobile station shall restart timer T3158 with the indicated reporting period, perform the measurements and send either the PACKET MEASUREMENT REPORT message or the PACKET ENHANCED MEASUREMENT REPORT to the network.

The sending of an RLC/MAC control message other than the PACKET RESOURCE REQUEST message from a mobile station in packet idle mode to the network may be initiated by the RR entity on the mobile station side using the packet access procedure. If access to the network is allowed, the packet access is done using the single block packet access option.

Further action depends on the RLC/MAC control message sent by the mobile station. Unless otherwise indicated by the RLC/MAC control message, the mobile station remains in packet idle mode.

42.4.8.2.4.2 Test Purpose

To verify that if the MS is triggered to send user data while random access procedure is ongoing to send a PACKET MEASUREMENT REPORT message, the MS will continue the random access procedure, send the PACKET MEASUREMENT REPORT message, will return to Idle mode and then will initiate a random access procedure to send user data.

Reference

3GPP TS 04.60, sub-clause 5.6.1

3GPP TS 04.18, sub-clause 3.5.2.2

42.4.8.2.4.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported, PCCCH absent.

CCCH combined with SDCCH. Max Retrans = 7, TX-INTEGGER = 32

SI2quater present

SI2quater transmitted (Rest Octets as described in the Specific Message Contents)

Mobile Station:

MS is GPRS attached and is in Packet Idle mode.

Test PDP context3 established.

Specific PICS Statements

-

PIXIT Statements

-

Test procedure

At the end of reporting period MS initiates a random access procedure to send PACKET MEASUREMENT REPORT. After receiving the first CHANNEL REQUEST message, the MS is triggered to send User data.

SS verifies that MS continues sending CHANNEL REQUEST messages for sending PACKET MEASUREMENT REPORT. SS allocates uplink resource to the MS to send PACKET MEASUREMENT REPORT. SS verifies that after sending the PACKET MEASUREMENT REPORT message, the MS initiates a random access procedure to send the user data triggered.

Maximum duration of the test

5 min

Expected sequence

Step	Direction	Message	Comments
1	MS -> SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access'
2	MS		Trigger the MS to send 500 octets data within 6 seconds
3	MS -> SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access'
4	MS -> SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access'
5	MS -> SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access'
6	MS -> SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access'
7	MS -> SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access'
8	MS -> SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access'
9	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Request reference = pertaining to the message received in step 8. Single block Allocation.
10	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH
11	MS -> SS	CHANNEL REQUEST	Establishment Cause = 'Single block packet access'
12	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Single block Allocation.
13	MS ->SS	PACKET RESOURCE REQUEST	Received on the allocated PDCH
14	SS -> MS	PACKET ACCESS REJECT	Sent on the PACCH of the allocated PDCH. Addressing the MS using TLLI.

Specific message contents

SI2quarter Rest Octets

BA_IND	0
3G_BA_IND	0
MP_CHANGE_MARK	0
SI2quarter_INDEX	0
SI2quarter_COUNT	0
Measurement_Parameters Description	0 (Not present)
GPRS_Real Time Difference Description	0 (Not present)
GPRS_BSIC Description	0 (Not present)
GPRS_MEASUREMENT_Parameters Description	1 (Present)
REPORT_TYPE	1 (Normal)
REPORTING_RATE	0 (Normal)
INVALID_BSIC_REPORTING	0 (No)
MULTIBAND_REPORTING	00
SERVING_BAND_REPORTING	00
SCALE_ORD	00
	00000 (No reporting Threshold or Reporting Offset)
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_NON_DRX_PERIOD	101 (1.2 sec)
NC_REPORTING_PERIOD_I	100 (7.68 sec)
NC_REPORTING_PERIOD_T	100 (7.68 sec)
extension length	0 (Not present)
3G Neighbour Cell Description	0 (Not present)
3G Measurement Parameters Description	0 (Not present)
GPRS_3G_MEASUREMENT Parameters Description	0 (Not present)

System Information Type 13

NETWORK_CONTROL_ORDER	10 (NC2)
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42.4.8.3 Network Control measurement reporting and Dedicated connection

42.4.8.3.1 Network Control measurement reporting / Dedicated connection / Timer Ready expiry

42.4.8.3.1.1 Conformance requirement

42.4.8.3.1.1.1 Conformance requirement for R97 and R98 MS

When the mobile station leaves the MM Ready state, the timer T3158 shall be stopped and no more measurement reports shall be sent to the network.

Reference

3GPP TS 04.60, subclauses 5.6.1

42.4.8.3.1.1.2 Conformance requirement for R99 and later MS

The parameter values NC1 and NC2 only apply in Ready state. In Standby state, the MS shall always use normal MS control independent of the ordered NC mode.

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it

overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to the MS or there is a downlink signalling failure or the MS goes to the Standby state or the MS enters dedicated mode.

Reference

3GPP TS 05.08, subclause 10.1.4

42.4.8.3.1.2 Test Purpose

To verify that some R97 or R98 MS involved in NC measurement reporting, stops its reporting if the Ready Timer expires within a dedicated connection.

For some R97 or R98 MS and for R99 or later MS, the NC measurement reporting is stopped when entering a dedicated connection.

42.4.8.3.1.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported. PBCCH not supported. Default Ready Timer (44s)

Mobile Station:

The MS is in packet idle mode, with a TMSI, P-TMSI allocated

Specific PICS Statements

- Release of GPRS Supported (TSPC_MS_GPRS_RELEASE)
- Support of Immediate Connect (TSPC_AddInfo_ImmConn)

PIXIT Statements

-

Foreseen final state of the MS

- MS is in standby state

Test procedure

MS is in packet idle mode, SS sends a PACKET MEASUREMENT ORDER message to change NC reporting parameters. The MS sends measurement reports according to the new NC parameters. The MS is then paged on its paging channel. Upon receipt of the PAGING REQUEST TYPE 1 message, the MS initiates the establishment of CS connection. The call lasts for 1 minute, thus the Ready Timer expires during the dedicated connection. At the end of the call, no more measurement should be sent by the MS.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	SS establishes a single block downlink TBF.
2	SS -> MS	PACKET MEASUREMENT ORDER	Sent on the blocks assigned in step 1. PMO message contains Network Control Order 2 (See the specific message content)
3	MS -> SS	CHANNEL REQUEST	With establishment cause 'single block access'.
4	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 1seconds.
5	MS -> SS	PACKET MEASUREMENT REPORT	Received on the assigned block.
6		{MT Call while GPRS Attach}	Macro parameters: T : 60 seconds R : 1, Resumption GPRS done Ready Timer expires before the end of the CS call
7	MS		Stand-by state
8	SS		Verify that no more PMR are sent by the MS.

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_I	10 (NC2) 110 (30,72 s)
---	---------------------------

42.4.8.3.2 Network Control measurement reporting / Dedicated connection / Different NC parameters / No T3158 expiry

42.4.8.3.2.1 Conformance requirement

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PERIOD_I and NC_REPORTING_PERIOD_T field of the PSI5, the SI2quater, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message. If NC_NON_DRX_PERIOD, NC_REPORTING_PERIOD_I or NC_REPORTING_PERIOD_T have not been received by the mobile station the default values shall be used.

The measurement results shall be sent to the network using the procedures specified in sub-clause 7.3 for packet idle mode, and in sub-clause 8.3 for packet transfer mode.

On expiry of timer T3158, the mobile station shall restart timer T3158 with the indicated reporting period, perform the measurements and send either the PACKET MEASUREMENT REPORT message or the PACKET ENHANCED MEASUREMENT REPORT to the network

Reference

3GPP TS 04.60/44.060, subclause 5.6.1

42.4.8.3.2.1.1 Conformance requirement specific for R99 or later MS

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to the MS or there is a downlink signalling failure or the MS goes to the Standby state or the MS enters dedicated mode.

Reference

3GPP TS 05.08, subclause 10.1.4

42.4.8.3.2.2 Test Purpose

To verify that a MS involved in NC measurement reporting on a NC2 cell, continue its measurement reporting after a dedicated call, with the same NC parameters for some R97 or R98 MS, and with the broadcasted parameters for other R97 or R98 MS and for R99 and later MS.

42.4.8.3.2.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported, NC2, Ready Timer set to 5 minutes

Mobile Station:

The MS is in packet idle mode, with a TMSI, P-TMSI allocated

Specific PICS Statements

- Release of GPRS Supported (TSPC_MS_GPRS_RELEASE)
- Support of Immediate Connect (TSPC_AddInfo_ImmConn)

PIXIT Statements

-

Foreseen final state of the MS

- MS is in packet idle mode

Test procedure

MS is in packet idle mode, on a NC2 Cell, and receive a PACKET MEASUREMENT ORDER to override the NC parameters broadcasted in SI2 quater. The MS sends PACKET MEASUREMENT REPORT based on T3158 calculation done on the NC parameters of the PACKET MEASUREMENT ORDER. The MS is then paged on its paging channel. Upon receipt of the PACKET PAGING REQUEST message, the MS initiate the establishment of CS connection. SS stops the call after 5 seconds in order to avoid T3158 expiry during the dedicated connection (for R97 MS).

R97 MS should either continue to send PACKET MEASUREMENT REPORT every T3158, calculated with the NC parameters sent in the PACKET MEASUREMENT ORDER, or , like R99 and later release MS, restart the NC measurement reporting but with T3158 based on the broadcasted parameters sent in the PACKET SYSTEM INFORMATION 5.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	SS establishes a single block downlink TBF.
1b	SS->MS	PACKET MEASUREMENT ORDER	-Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_I See specific message contents
2	MS ->SS	CHANNEL REQUEST	'Single block packet access.'
3	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
4	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
5	MS ->SS	CHANNEL REQUEST	'Single block packet access.'
6	SS		Verify that RACH in step 5 is sent T3158 +/- 10% after step 2. T3158 calculated using NC parameters sent in the PMO in step 1.
7	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
8	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
9		{MT Call while GPRS Attach}	Macro parameters: T : 5 seconds R : 1, Resumption GPRS done No T3158 expiry (for R97 MS) during CS call
10	MS		MS in packet idle mode
11	MS ->SS	CHANNEL REQUEST	'Single block packet access.'
12A	SS		For R97, verify that RACH in step 11 is sent T3158 after step 5. T3158 calculated using NC parameters sent in the PMO in step 1.
12B	SS		For R99 MS and later release, no timing check.
13	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
14	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
15	MS ->SS	CHANNEL REQUEST	'Single block packet access.'
16	SS		Verify that RACH in step 15 is sent T3158 +/- 10% after step 11. For some R97 MS: T3158 calculated using NC parameters sent in the PMO in step 1. For all other MS: T3158 calculated using NC parameters sent in SI2Qtr. See specific SI2Qtr message contents
17	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
18	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
Note: In step 12x, the test procedure follows same branch, either the 'a' branch or the 'b' branch.			

Specific message contents

PACKET MEASUREMENT ORDER in step 1:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_I	10 (NC2) 110(30.72secs)
---	----------------------------

SI2quarter Rest Octets:

NC Measurement parameter struct Network Control Order NC_NON_DRX_PERIOD NC_REPORTING_PERIOD_I NC_REPORTING_PERIOD_T	10 (NC2) 111 101 (15,36 s) 100 (7,68 s)
---	--

42.4.8.3.3 Network Control measurement reporting / Dedicated connection / Handover / No T3158 expiry

42.4.8.3.3.1 Conformance requirement

The behaviour of the mobile station is controlled by the parameter NETWORK_CONTROL_ORDER broadcast in the PSI5 message on PBCCH, in the SI13 message on the BCCH and in the PSI13 message on PACCH. Alternatively, the network may send the NETWORK_CONTROL_ORDER parameters in a PACKET MEASUREMENT ORDER or in a PACKET CELL CHANGE ORDER message on PCCCH or PACCH to a particular mobile station. The parameter NETWORK_CONTROL_ORDER may have one of the values NC0, NC1, NC2 or RESET, see 3GPP TS 05.08.

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PARAMETER_I and NC_REPORTING_PARAMETER_T field of the PSI5, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message. If no PBCCH is allocated in the cell or if no individual order has been received by the mobile station, the default values of the parameters NC_NON_DRX_PERIOD, NC_REPORTING_PARAMETER_I and NC_REPORTING_PARAMETER_T shall be used. The mobile station shall apply to the timer T3158 either the NC_REPORTING_PARAMETER_I when in packet idle mode or the NC_REPORTING_PARAMETER_T when in packet transfer mode. The measurement results shall be sent to the network using the procedures specified in subclause 7.3 for packet idle mode, and in subclause 8.3 for packet transfer mode.

A mobile station may reselect a new cell or may be ordered to reselect a new cell with mode NC1 or NC2 while timer T3158 is active. If time to expiry of timer T3158 is greater than the indicated reporting period for the new cell, the mobile station shall immediately restart timer T3158 with the indicated reporting period for the new cell. Otherwise, the timer T3158 shall continue to run.

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to the MS or there is a downlink signalling failure or the MS goes to the Standby state.

Reference

3GPP TS 04.60/44.060, subclause 5.6.1

3GPP TS 05.08, subclause 10.1.4

42.4.8.3.3.1.1 Conformance requirement specific for R99 or later MS

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to the MS or there is a downlink signalling failure or the MS goes to the Standby state or the MS enters dedicated mode.

Reference

3GPP TS 05.08, subclause 10.1.4

42.4.8.3.3.2 Test Purpose

To verify that a MS involved in NC measurement reporting and making a handover to a new NC2 cell, uses the broadcasted NC reporting parameters of its new serving cell for its NC measurement reporting.

42.4.8.3.3.3 Method of test

Initial conditions

System Simulator:

2 cells (cell A and cell B), GPRS supported, NC2, Ready Timer set to 5 minutes

Mobile Station:

The MS is in packet idle mode, with a TMSI, P-TMSI allocated

Specific PICS Statements

- Release of GPRS Supported (TSPC_MS_GPRS_RELEASE)
- Support of Immediate Connect (TSPC_AddInfo_ImmConn)

PIXIT Statements

-

Foreseen final state of the MS

- MS is in packet idle mode

Test procedure

MS is in packet idle mode, on a NC2 cell A, and sends PACKET MEASUREMENT REPORT based on T3158 calculation done on the broadcasted parameters. The MS is then paged on its paging channel. Upon receipt of the PAGING REQUEST message, the MS initiate the establishment of CS connection. During the call, SS triggers the MS to do a handover to cell B. SS stops the call after 15 second in order to avoid T3158 expiry during the dedicated connection (for R97 MS).

As cell B has a NETWORK CONTROL ORDER set to NC2, all MS shall then restart measurement reporting by sending PACKET MEASUREMENT REPORT every T3158. The reporting timer is calculated with the NC parameters broadcasted in the second cell on SI2 quater.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	MS ->SS	CHANNEL REQUEST	'Single block packet access'
2	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
3	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
4	MS ->SS	CHANNEL REQUEST	'Single block packet access'
5	SS		Verify that RACH in step 4 is sent T3158 +/- 10% after step 1. T3158 calculated using NC parameters broadcasted in cell A See specific SI2 quarter message content
6	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
7	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
8		{MT Call while GPRS Attach with handover}	Macro parameters: T : 15 seconds Target Cell : Cell B R : 1, Resumption GPRS done No T3158 expiry (for R97 MS) during CS call
9	MS->SS	CHANNEL REQUEST	Sent on cell B 'One Phase Packet Access'
10	SS->MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
11	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS at least 3 Blocks after step 10.
12	MS->SS	RLC data block	Sent on the PDCH. The RLC data also serves as cell update.
13	SS->MS	PACKET UPLINK ACK/NACK	Sent on the PACCH with valid RRBP.
14	MS->SS	PACKET CONTROL ACK	
15	MS		MS in packet idle mode on cell B All following messages should be sent on cell B
16	MS ->SS	CHANNEL REQUEST	'Single block packet access'
17	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
18	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
19	MS ->SS	CHANNEL REQUEST	'Single block packet access'
20	SS		Verify that RACH in step 19 is sent T3158 +/- 10% after step 16. T3158 calculated using NC parameters broadcasted in cell B See specific SI2 quarter message content
21	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
22	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.

Specific message contents

SI2quarter Rest Octets for Cell A

NC Measurement parameter struct	
Network Control Order	10 (NC2)
NC_NON_DRX_PERIOD	111
NC_REPORTING_PERIOD_I	110 (30,72 s)
NC_REPORTING_PERIOD_T	100 (7,68 s)

SI2quarter Rest Octets for Cell B

NC Measurement parameter struct	
Network Control Order	10 (NC2)
NC_NON_DRX_PERIOD	111
NC_REPORTING_PERIOD_I	101 (15,36 s)

42.4.8.3.4 Network Control measurement reporting / Dedicated connection / Different NC parameters / T3158 expiry

42.4.8.3.4.1 Conformance requirement

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PERIOD_I and NC_REPORTING_PERIOD_T field of the PSI5, the SI2quater, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message. If NC_NON_DRX_PERIOD, NC_REPORTING_PERIOD_I or NC_REPORTING_PERIOD_T have not been received by the mobile station the default values shall be used.

The measurement results shall be sent to the network using the procedures specified in sub-clause 7.3 for packet idle mode, and in sub-clause 8.3 for packet transfer mode.

On expiry of timer T3158, the mobile station shall restart timer T3158 with the indicated reporting period, perform the measurements and send either the PACKET MEASUREMENT REPORT message or the PACKET ENHANCED MEASUREMENT REPORT to the network.

After each reporting period, the MS shall send a measurement report to BSS (see 3GPP TS 04.60). The MS shall then discard any previous measurement report, which it has not been able to send.

Reference

3GPP TS 04.60/44.060, subclause 5.6.1

3GPP TS 05.08, subclause 10.1.4.1

42.4.8.3.4.1.1 Conformance requirement specific for R99 or later MS

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to the MS or there is a downlink signalling failure or the MS goes to the Standby state or the MS enters dedicated mode.

Reference

3GPP TS 05.08, subclause 10.1.4

42.4.8.3.4.2 Test Purpose

To verify that some R97 or R98 MS involved in NC measurement reporting, sends only its latest PACKET MEASUREMENT REPORT when many reporting periods had expired during a CS call on the same cell.

To verify that some other R97 or R98 MS and R99 and later releases MS stop their measurement reporting with the dedicated call and do not restart it if the broadcasted parameters give a NETWORK CONTROL ORDER set to NC0.

42.4.8.3.4.3 Method of test

Initial conditions

System Simulator:

2 cells, GPRS supported, NC0, Ready Timer set to 5 minutes

Mobile Station:

The MS is in packet idle mode, with a TMSI, P-TMSI allocated

Specific PICS Statements

- Release of GPRS Supported (TSPC_MS_GPRS_RELEASE)
- Support of Immediate Connect (TSPC_AddInfo_ImmConn)

PIXIT Statements

-

Foreseen final state of the MS

- MS is in packet idle mode

Test procedure

MS is in packet idle mode, on a NC0 Cell, and receive a PACKET MEASUREMENT ORDER changing the Network Control Order to NC2. The MS sends PACKET MEASUREMENT REPORT based on T3158 calculation done on the NC parameters of the PACKET MEASUREMENT ORDER, including measurement done on its neighbour, cell B. 15 seconds after the second PACKET MEASUREMENT ORDER the MS is paged on its paging channel. Upon receipt of the PAGING REQUEST TYPE 1 message, the MS initiate the establishment of CS connection. After 30 seconds the cell B transmission is cut and the call lasts for 55 seconds more.

Some R97 or R98 MS and the R99 and later release MS should then be back on CCCH parameters and not trigger any PACKET MEASUREMENT REPORT anymore.

Other R97 or R98 MS should continue to send PACKET MEASUREMENT REPORT every T3158, calculated with the NC parameters sent in the PACKET MEASUREMENT ORDER. As the T3158 timer has expired 3 times during the dedicated connection (once before Cell B has been cut, twice after), and that the MS shall send only its latest PACKET MEASUREMENT REPORT, the first one sent after the dedicated call should not contain any Cell B measurement.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	for single block downlink assignment on PCH corresponding to MS.
2	SS -> MS	PACKET MEASUREMENT ORDER	Sent on the block assigned in step 1 Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_I See specific message contents
3	MS -> SS	CHANNEL REQUEST	with establishment cause 'single block access'.
4	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 2 seconds.
5	MS -> SS	PACKET MEASUREMENT REPORT	Shall be sent in the assigned block.
6	MS -> SS	CHANNEL REQUEST	With establishment cause 'single block access'.
7	SS		Verify that the RACH in step 6 is sent T3158 +/-10% after step 3 T3158 calculated using NC parameters sent in step 1
8	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 2 seconds.
9	MS -> SS	PACKET MEASUREMENT REPORT	Shall be sent in the assigned block.
10	SS		Wait for 15 sec.
11		{MT Call while GPRS Attach}	Macro parameters: T : 85 seconds R : 1, Resumption GPRS done 3 times T3158 expiry (for R97 MS) during CS call After 30 second stop Cell B transmission.
12	MS		MS in packet idle mode Some R97 or R98 MS and the R99 and later releases MS should follow 'A' branch Other R97 or R98 MS should follow 'B' branch
13A	SS		No messages should be sent by MS.
13B	MS -> SS	CHANNEL REQUEST	with establishment cause 'single block access'.
14B	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 2 seconds.
15B	MS -> SS	PACKET MEASUREMENT REPORT	Shall be sent in the assigned block.
16B	SS		PMR in step 15B should be sent when MS recover GPRS. Verify that Cell B measurements are not sent.
17B	MS -> SS	CHANNEL REQUEST	with establishment cause 'single block access'.
18B	SS		RACH in step 17B should be sent 4*T3158 +/-10% after step 6 T3158 calculated using NC parameters sent in step 2
19B	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 2 seconds.
20B	MS -> SS	PACKET MEASUREMENT REPORT	Shall be sent in the assigned block.
Note: In step 13x, the test procedure follows either the 'a' branch or the 'b' branch.			

PACKET MEASUREMENT ORDER in step 1:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	110(30.72secs)

42.4.8.3.5 Network Control measurement reporting / Dedicated connection / Handover / T3158 expiry

42.4.8.3.5.1 Conformance requirement

42.4.8.3.5.1.1 Conformance requirement for R97 and R98 MS

The behaviour of the mobile station is controlled by the parameter NETWORK_CONTROL_ORDER broadcast in the PSI5 message on PBCCH, in the SI13 message on the BCCH and in the PSI13 message on PACCH. Alternatively, the network may send the NETWORK_CONTROL_ORDER parameters in a PACKET MEASUREMENT ORDER or in a PACKET CELL CHANGE ORDER message on PCCCH or PACCH to a particular mobile station. The parameter NETWORK_CONTROL_ORDER may have one of the values NC0, NC1, NC2 or RESET, see 3GPP TS 05.08.

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PARAMETER_I and NC_REPORTING_PARAMETER_T field of the PSI5, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message. If no PBCCH is allocated in the cell or if no individual order has been received by the mobile station, the default values of the parameters NC_NON_DRX_PERIOD, NC_REPORTING_PARAMETER_I and NC_REPORTING_PARAMETER_T shall be used. The mobile station shall apply to the timer T3158 either the NC_REPORTING_PARAMETER_I when in packet idle mode or the NC_REPORTING_PARAMETER_T when in packet transfer mode. The measurement results shall be sent to the network using the procedures specified in subclause 7.3 for packet idle mode, and in subclause 8.3 for packet transfer mode.

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to the MS or there is a downlink signalling failure or the MS goes to the Standby state.

After each reporting period, the MS shall send a measurement report to BSS (see 3GPP TS 04.60). The MS shall then discard any previous measurement report, which it has not been able to send.

Reference

3GPP TS 04.60/44.060, subclause 5.6.1

3GPP TS 05.08, subclauses 10.1.4 and 10.1.4.1

42.4.8.3.5.1.2 Conformance requirement for R99 and later MS

A set of measurement reporting parameters (NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD(s)) is broadcast on PBCCH. The parameters may also be sent individually to an MS on PCCCH or PACCH, in which case it overrides the broadcast parameters. The individual parameters are valid until the RESET command is sent to the MS or there is a downlink signalling failure or the MS goes to the Standby state or the MS enters dedicated mode.

Reference

3GPP TS 05.08, subclauses 10.1.4

42.4.8.3.5.2 Test Purpose

To verify that some R97 MS involved in NC measurement reporting, and making a handover during a dedicated connection do not send any buffered PACKET MEASUREMENT REPORT when many reporting periods had expired during a CS call on the first cell. They shall restart their measurement reporting on the new serving cell only if the broadcasted parameters allow it.

For other R97 MS and for R99 or later MS, the NC measurement reporting is stopped when entering a dedicated connection. At the end of the CS call, after a handover, it shall restart its measurement reporting on the new serving cell only if the broadcasted parameters allow it.

42.4.8.3.5.3 Method of test

Initial conditions

System Simulator:

1 cell (Cell A), GPRS supported, NC2, Ready Timer set to 5 minutes

1 cell (Cell B), GPRS supported, NC0, Ready Timer set to 5 minutes

Mobile Station:

The MS is in packet idle mode, with a TMSI, P-TMSI allocated

Specific PICS Statements

- Release of GPRS Supported (TSPC_MS_GPRS_RELEASE)
- Support of Immediate Connect (TSPC_AddInfo_ImmConn)

PIXIT Statements

-

Foreseen final state of the MS

- MS is in packet idle mode

Test procedure

MS is in packet idle mode, on a NC2 Cell, and receive a PACKET MEASUREMENT ORDER. The MS then sends PACKET MEASUREMENT REPORT based on T3158 calculation done with the NC parameters in the PACKET MEASUREMENT ORDER. The MS is then paged on its paging channel. Upon receipt of the PAGING REQUEST message, the MS initiate the establishment of CS connection. During the call, after 30 seconds in order to have T3158 expiry during the dedicated connection (for some R97 MS), SS triggers the MS to do a handover to the second cell. SS stops the call after 30 seconds on the new serving cell, cell B.

As cell B has a NETWORK CONTROL ORDER set to NC0, no MS should send any measurement reporting, even if some PACKET MEASUREMENT REPORT were not sent when the MS was camped on cell A (before the handover during the dedicated connection)

After 1 minute, a PACKET MEASUREMENT ORDER is then sent to the MS camped on cell B. The SS verifies that the PACKET MEASUREMENT REPORT sent by the MS is including cell A measurements and is not a previous PACKET MEASUREMENT REPORT not sent in cell A.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	SS establishes a single block downlink TBF.
1b	SS->MS	PACKET MEASUREMENT ORDER	-Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_I See specific message contents
2	MS -> SS	CHANNEL REQUEST	'Single block packet access'
3	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
4	MS -> SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
5	MS -> SS	CHANNEL REQUEST	'Single block packet access'
6	SS		Verify that RACH in step 5 is sent T3158 +/- 10% after step 2. T3158 calculated using NC parameters received in the PMO in step 1
7	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
8	MS -> SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
9		{MT Call while GPRS Attach with handover}	Macro parameters: T : 60 seconds Target Cell : Cell B R : 1, Resumption GPRS done After the completion of the Handover procedure, cell A power is reduced to - 80 dBm
10	MS->SS	CHANNEL REQUEST	Sent on cell B 'One Phase Packet Access'
11	SS->MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
12	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS at least 3 Blocks after step 11.
13	MS->SS	RLC data block	Sent on the PDCH. The RLC data also serves as cell update.
14	SS->MS	PACKET UPLINK ACK/NACK	Sent on the PACCH with valid RRBp.
15	MS->SS	PACKET CONTROL ACK	
16	MS		MS in packet idle mode on cell B
17	SS		No action done for 1 minute
18a	SS -> MS	IMMEDIATE ASSIGNMENT	SS establishes a single block downlink TBF.
18b	SS -> MS	PACKET MEASUREMENT ORDER	-Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_I See specific message contents
19	MS -> SS	CHANNEL REQUEST	'Single block packet access'
20	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
21	MS -> SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
22	SS		Verify that PMR in step 21 includes Cell A measurement.

Specific message contents

PACKET MEASUREMENT ORDER in step 1:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	101(15.36secs)

PACKET MEASUREMENT ORDER in step 18:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	110(30.72secs)

SI2quater Rest Octets for Cell A

NC Measurement parameter struct	
Network Control Order	10 (NC2)
NC_REPORTING_PERIOD_T	100 (7,68 s)

42.4.8.3.6 Network Control measurement reporting / Dedicated connection / Assignment Reject/

42.4.8.3.6.1 Conformance requirement

When in mode NC1 or NC2, the mobile station shall perform the NC measurements as defined in 3GPP TS 05.08. The reporting periods are indicated in the NC_REPORTING_PERIOD_I and NC_REPORTING_PERIOD_T field of the PSI5, the SI2quater, the PACKET CELL CHANGE ORDER or the PACKET MEASUREMENT ORDER message. If NC_NON_DRX_PERIOD, NC_REPORTING_PERIOD_I or NC_REPORTING_PERIOD_T have not been received by the mobile station the default values shall be used.

The measurement results shall be sent to the network using the procedures specified in sub-clause 7.3 for packet idle mode, and in sub-clause 8.3 for packet transfer mode.

On expiry of timer T3158, the mobile station shall restart timer T3158 with the indicated reporting period, perform the measurements and send either the PACKET MEASUREMENT REPORT message or the PACKET ENHANCED MEASUREMENT REPORT to the network

On receipt of an IMMEDIATE ASSIGNMENT REJECT message corresponding to one of its 3 last CHANNEL REQUEST messages, the mobile station, stops sending CHANNEL REQUEST messages, starts timer T3122 with the indicated value, ("wait indication" information element), starts T3126 if it has not already been started, and listens to the downlink CCCH until T3126 expires.

The Wait Indication IE (i.e. T3122) relates to the cell from which it was received.

The mobile station in packet idle mode (only applicable to mobile station supporting GPRS) may initiate packet access in the same cell before T3122 has expired, see 3GPP TS 04.60 and sub-clause 3.5.2.1.3.4.

After T3122 expiry, no CHANNEL REQUEST message shall be sent as a response to a page until a PAGING REQUEST message for the mobile station is received.

Reference

3GPP TS 04.60/44.060, subclause 5.6.1

3GPP TS 04.08/44.018, subclause 3.3.1.1.3.2

42.4.8.3.6.2 Test Purpose

To verify that if a MS involved in NC measurement reporting is paged for CS connection but receives an IMMEDIATE ASSIGNMENT REJECT to its CHANNEL REQUEST sent in response to the paging, the MS continues its NC measurement reporting.

42.4.8.3.6.3 Method of test

Initial conditions

System Simulator:

1 cell, GPRS supported, NC0, Ready Timer set to 5 minutes

Mobile Station:

The MS is in packet idle mode, with a TMSI, P-TMSI allocated

Specific PICS Statements

-

PIXIT Statements

-

Foreseen final state of the MS

- MS is in packet idle mode

Test procedure

MS is in packet idle mode, on a NCO Cell, and receive a PACKET MEASUREMENT ORDER to override the NC parameters broadcasted. The MS sends PACKET MEASUREMENT REPORT based on T3158 calculation done on the NC parameters of the PACKET MEASUREMENT ORDER. The MS is then paged on its paging channel. Upon receipt of the PAGING REQUEST message, the MS sends a CHANNEL REQUEST but the SS denies the dedicated connection by sending an IMMEDIATE ASSIGNMENT REJECT with a wait indication (T3122) of 20 seconds.

The MS does not enter any dedicated connection and should so continue its NC reporting measurement, even if T3122 is not expired at T3158 expiry.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	IMMEDIATE ASSIGNMENT	SS establishes a single block down link
2	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_I See specific message contents
3	MS ->SS	CHANNEL REQUEST	'Single block packet access'
4	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
5	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
6	MS ->SS	CHANNEL REQUEST	'Single block packet access'
7	SS		Verify that RACH in step 6 is sent T3158 +/- 10% after step 3. T3158 calculated using NC parameters sent in the PMO in step 2.
8	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
9	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
10	SS -> MS	PAGING REQUEST	1 st Repeated Page info contains TMSI of the MS, PAGE_MODE = " same as before ", sent on downlink PCH
11	MS -> SS	CHANNEL REQUEST	Response to paging
12	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Request Reference = pertaining to the message received in step 11. Wait indication 20 seconds Sent on AGCH.
13	MS ->SS	CHANNEL REQUEST	'Single block packet access'
14	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH.
15	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.

PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	101 (15.36secs)

42.4.8.4 Network Control measurement reporting / NC_FREQUENCY_LIST

42.4.8.4.1 Network Control measurement reporting / NC_FREQUENCY_LIST / NC_FREQUENCY_LIST in Packet measurement order.

42.4.8.4.1.1 Conformance requirement

The GSM Neighbour Cell list may be modified by "NC Frequency List" in a PACKET CELL CHANGE ORDER message (in which case the reference list is given on the new cell) or one or more instances of the PACKET MEASUREMENT ORDER message with the same BA_IND value or PSI3_CHANGE_MARK value.

The "NC Frequency List" may add cells to the GSM Neighbour Cell list (see sub-clause 11.2.4 and 11.2.9b, "PACKET CELL CHANGE ORDER" and "PACKET MEASUREMENT ORDER"). These cells shall be added at the end of the

GSM Neighbour Cell list and indexed in the order of occurrence within the PACKET CELL CHANGE ORDER message or ascending instances of the PACKET MEASUREMENT ORDER message. The list of added cells may contain GPRS cell re-selection parameters.

The "NC Frequency List" may delete frequencies from the BA(GPRS) list (see 11.2.9b). The frequencies to be removed are identified by their indices in the BA(GPRS). In this case all cells associated with the removed frequencies shall be removed from the GSM Neighbour Cell list. Removed cells/frequencies shall keep their indices but no measurements or reporting shall be performed. If the index points to a cell that does not exist, this shall not be considered as an error.

When ordered to send measurement reports, the MS shall continuously monitor all carriers in BA(GPRS) or as indicated by the parameter NC_FREQUENCY_LIST and the BCCH carrier of the serving cell. The measurement requirements are defined in subclause 10.1.1 for the actual packet mode.

Reference

3GPP TS 04.60, subclause 5.6.1.

3GPP TS 05.08, subclause 10.1.4

42.4.8.4.1.2 Test Purpose

To verify that if the NC_FREQUENCY_LIST is included in the PACKET MEASUREMENT ORDER, MS updates the neighbour cell list and uses the updated list for the measurement reporting and reselection.

42.4.8.4.1.3 Method of test

Initial conditions

System Simulator:

3 cells, GPRS supported.

Cell A (in case of GSM900 only): BS_PA_MFRMS = 2 (4 multi frames)

Initial conditions

Parameter	Cell A	Cell B	Cell C
	Carrier 1	Carrier 2	Carrier 3
Channel Type Carried	BCCH	BCCH	BCCH
RF Signal Level (dBm)	-60	-75	-75
Serving Cell Parameters			
NETWORK_CONTROL_ORDER	NC0	NC0	NC0

NOTE 1: All cells support GPRS. None of the cells support PBCCH.

NOTE 2: Cell C is not a part of BA(GPRS) on cell A. Cell B is part of BA(GPRS) on cell A.

Mobile Station:

MS is in Packet Idle mode and GPRS attached, Ready Timer Deactivated.

Specific PICS Statements

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PIXIT Statements

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Test procedure

SS sends a PACKET MEASUREMENT ORDER to MS, changing the NC mode to NC2. SS receives few measurement reports. SS checks that the measurements of cell B are included in the measurement report while that of the Cell C are not included in it. SS transmits a PACKET MEASUREMENT ORDER including

NC_FREQUENCY_LIST, adding Cell C while removing cell B. SS receives few measurement reports and checks that MS now includes cell C in the PACKET MEASUREMENT REPORT, while the measurements of the cell B are not included in it. SS reduces the signal strength of cell A to -85dBm . The signal strengths of cells B and C are increased to -50dBm and -60dBm respectively, making cell B better than cell C for cell reselection. SS changes the NC mode to NC0 by sending a PACKET MEASUREMENT ORDER. SS checks that the MS has done the reselection to cell C even though the cell B was better as the cell B is not a part of the measurement list.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	IMMEDIATE ASSIGNMENT	for single block downlink assignment on PCH corresponding to MS.
2	SS->MS	PACKET MEASUREMENT ORDER	-Sent on blocks assigned in step 1 NETWORK_CONTROL_ORDER is set to NC2. NC_REPORTING_PERIOD_T and NC_REPORTING_PERIOD_I are specified.
3	MS ->SS	CHANNEL REQUEST	See specific message contents with establishment cause 'single block access'. Received on RACH.
4	SS->MS	IMMEDIATE ASSIGNMENT	for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 2 seconds.
5	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH.
6			Steps 3-5 are repeated twice. SS Verifies that the measurement results for cells A, B are included in the PACKET MEASUREMENT REPORT, while the measurements of cell C is not included in it as the cell C is not a part of BA(GPRS) on cell A.
7	SS->MS	IMMEDIATE ASSIGNMENT	for single block downlink assignment on PCH corresponding to MS.
8	SS->MS	PACKET MEASUREMENT ORDER	Sent on block assigned in step 7. NETWORK_CONTROL_ORDER is set to NC2. NC_REPORTING_PERIOD_T and NC_REPORTING_PERIOD_I are specified. NC_FREQUENCY_LIST is included. This list adds cell C while deletes cell B from the measurement list.
9	MS ->SS	CHANNEL REQUEST	See specific message contents with establishment cause 'single block access'. Received on RACH.
10	SS->MS	IMMEDIATE ASSIGNMENT	for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 2 seconds.
11	MS ->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH.
12			Steps 9-11 are repeated twice. SS Verifies that the measurement results for cells A, C are included in, at least, the last PACKET MEASUREMENT REPORT, while the measurements of cell B is not included in it. Previous PACKET MEASUREMENT REPORT may not include cell C (but should not include cell B), due to the new BSIC synchronization.
13	SS		Reduce the signal strength of cell A to -85dBm and increase the signal strength of cell B to -50dBm and cell C to -60 dBm.
14	SS->MS	IMMEDIATE ASSIGNMENT	for single block downlink assignment on PCH corresponding to MS.
15	SS->MS	PACKET MEASUREMENT ORDER	Sent on block assigned in step 14. NETWORK_CONTROL_ORDER is set to NC0. See specific message contents
16	MS->SS	CHANNEL REQUEST	Establishment Cause is 'one phase packet access'. Received on cell C.

Specific message contents

SYSTEM INFORMATION TYPE 2 of Cell A:

Neighbour Cells Description	
-----------------------------	--

<p>- Format identifier</p> <p>- BCCH Allocation Sequence</p> <p>- BCCH Allocation ARFCN</p> <p>- EXT-IND</p>	<p>For GSM 900: Bit map 0. For DCS 1 800 and PCS 1 900: Range 512. For GSM 700, T-GSM 810 and GSM 850: Range 128. 0 For GSM 900: Channel numbers 5, 20, 90, 100, 110, 120, 122 and 124. For DCS 1 800: Channel numbers 515, 590, 700, 780, 810, 870, 875 and 885. For PCS 1 900 Channel numbers 515, 590, 655, 700, 710, 740, 780 and 810. For GSM 700, T-GSM 810: Channel numbers 437, 447, 467, 477, 487, 497, 502 and 507. For GSM 850: Channel numbers 137, 147, 157, 177, 197, 217, 227 and 237. For GSM 900, this IE carries only part of the BA. For DCS 1 800, PCS 1 900, GSM 700, T-GSM 810 and GSM 850, this IE carries complete BA.</p>
--	---

PACKET MEASUREMENT ORDER in step 2:

<p>NC Measurement parameters</p> <p>NETWORK_CONTROL_ORDER</p> <p>NC_REPORTING_PERIOD_I</p> <p>NC_REPORTING_PERIOD_T</p>	<p>10 (NC2)</p> <p>100 (7.68 s)</p> <p>011 (3.84 s)</p>
---	---

PACKET MEASUREMENT ORDER in step 8:

MESSAGE_TYPE	0000 11
PAGE_MODE	00 Normal Paging
TLLI	10 (address is TLLI)
-	Same as the value received from MS
PMO_INDEX	0 0 0 first message
PMO_COUNT	0 0 0 one message expected
{ 0 1 < NC Measurement Parameters }	1 NC Measurement Parameters available
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	10 NC2
{ 0 1 < NC_NON_DRX_PERIOD	1 Additional NC parameters available
< NC_REPORTING_PERIOD_I	NC_NON_DRX_PERIOD = 000
< NC_REPORTING_PERIOD_T }	(No non-DRX mode after a measurement report has been sent)
	NC_REPORTING_PERIOD_I = 100
	(7.68 sec)
	NC_REPORTING_PERIOD_T = 011
	(3.84 sec)
	1 NC Frequency list struct available
{ 0 1 < NC_FREQUENCY_LIST }	
NC Frequency list	
{ 0 1 { < NR_OF_REMOVED_FREQ	1 Frequencies have been removed (cell B (1 st entry in the BA(GPRS) is removed))
	00000
NR_OF_REMOVED_FREQ	000000
REMOVED_FREQ_INDEX	
{ 1 < List of added Frequency struct	
Add Frequency list	Adding the cell C
START_FREQUENCY	00 1010 0000 (ARFCN 80, for GSM 900)
	10 0101 1000 (ARFCN 600, for DCS1800, PCS1900)
	01 1011 0101 (ARFCN 437, for GSM 700, T-GSM 810)
	00 1100 1111 (ARFCN 207, for GSM 850)
	001101
	1 cell selection parameters available
BSIC	
{ 0 1 < Cell selection params	
Cell selection params	
EXC_ACC	0
CELL_BAR_ACCESS_2	0 normal reselection
SAME_RA_AS_SERVING_CELL	1 same RA as serving cell
{ 0 1 < GPRS_RXLEV_ACCESS_MIN }	1 GPRS_RXLEV_ACCESS_MIN present
GPRS_RXLEV_ACCESS_MIN	010101 -90dBm
GPRS_MS_TXPWR_MAX_CCH	01010
{ 0 1 < GPRS_TEMPORARY_OFFSET }	1 GPRS_TEMPORARY_OFFSET present
GPRS_TEMPORARY_OFFSET	000
GPRS_PENALTY_TIME	0000
{ 0 1 < GPRS_RESELECT_OFFSET }	1 GPRS_RESELECT_OFFSET present
GPRS_RESELECT_OFFSET	10000 0dBm
{ 0 1 < HCS params }	1 HCS params present
GPRS_PRIORITY_CLASS	000
GPRS_HCS_THR	10100
{ 0 1 < SI13_PBCCH_LOCATION }	1 SI13_PBCCH_LOCATION present
{ 0 < SI13_LOCATION }	0
SI13_LOCATION	0 SI13 is sent on BCCH norm
NR_OF_FREQUENCIES	0000
FREQ_DIFF_LENGTH	000
} 0	End of list
< padding bits >	Spare Padding

PACKET MEASUREMENT ORDER in step 15:

MESSAGE_TYPE	0000 11
PAGE_MODE	00 Normal Paging
TLLI	10 (address is TLLI)
-	Same as the value received from MS
PMO_INDEX	0 0 0 first message
PMO_COUNT	0 0 0 one message expected
{ 0 1 < NC Measurement Parameters }	1 NC Measurement Parameters available
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	00 NC0
{ 0 1 < NC_NON_DRX_PERIOD	0 No Additional NC parameters available
< NC_REPORTING_PERIOD_I	
< NC_REPORTING_PERIOD_T }	
{ 0 1 < NC_FREQUENCY_LIST }	1 NC Frequency list struct available
NC Frequency list	
{ 0 1 { < NR_OF_REMOVED_FREQ	1 Frequencies have been removed (cell B (1 st entry
	in the BA(GPRS) is removed))
NR_OF_REMOVED_FREQ	00000
REMOVED_FREQ_INDEX	000000
{ 1 < List of added Frequency struct	
Add Frequency list	Adding the cell C
START_FREQUENCY	00 1010 0000 (ARFCN 80, for GSM 900)
	10 0101 1000 (ARFCN 600, for DCS1800,
	PCS1900)
	01 1011 0101 (ARFCN 437, for GSM 700, T-GSM
	810)
	00 1100 1111 (ARFCN 207, for GSM 850)
	001101
	1 cell selection parameters available
BSIC	
{ 0 1 < Cell selection params	
Cell selection params	
EXC_ACC	0
CELL_BAR_ACCESS_2	0 normal reselection
SAME_RA_AS_SERVING_CELL	1 same RA as serving cell
{ 0 1 < GPRS_RXLEV_ACCESS_MIN }	1 GPRS_RXLEV_ACCESS_MIN present
GPRS_RXLEV_ACCESS_MIN	010101 -90dBm
GPRS_MS_TXPWR_MAX_CCH	01010
{ 0 1 < GPRS_TEMPORARY_OFFSET }	1 GPRS_TEMPORARY_OFFSET present
GPRS_TEMPORARY_OFFSET	000
GPRS_PENALTY_TIME	0000
{ 0 1 < GPRS_RESELECT_OFFSET }	1 GPRS_RESELECT_OFFSET present
GPRS_RESELECT_OFFSET	10111 +16dBm
{ 0 1 < HCS params }	1 HCS params present
GPRS_PRIORITY_CLASS	000
GPRS_HCS_THR	10100
{ 0 1 < SI13_PBCCH_LOCATION }	1 SI13_PBCCH_LOCATION present
{ 0 < SI13_LOCATION }	0
SI13_LOCATION	0 SI13 is sent on BCCH nom
NR_OF_FREQUENCIES	0000
FREQ_DIFF_LENGTH	000
} 0	End of list
< padding bits >	Spare Padding

42.4.8.4.2 Void

42.4.8.4.3 Network Control measurement reporting / NC_FREQUENCY_LIST / PMO with empty NC_FREQUENCY_LIST/ Return to BA(GPRS).

42.4.8.4.3.1 Conformance requirement

The “NC Frequency List” may add cells to the GSM Neighbour Cell list (see sub-clause 11.2.4 and 11.2.9b, “PACKET CELL CHANGE ORDER” and “PACKET MEASUREMENT ORDER”). These cells shall be added at the end of the GSM Neighbour Cell list and indexed in the order of occurrence within the PACKET CELL CHANGE ORDER message or ascending instances of the PACKET MEASUREMENT ORDER message. The list of added cells may contain GPRS cell re-selection parameters.

In case the same cell (ARFCN+BSIC) or the same ARFCN without BSIC occur more than once in the resulting GSM Neighbour Cell list, each occurrence shall be assigned an index but only the cell with the highest index shall be used for cell re-selection and referred to in measurement reports.

The “NC Frequency List” may delete frequencies from the BA(GPRS) list (see 11.2.9b). The frequencies to be removed are identified by their indices in the BA(GPRS). In this case all cells associated with the removed frequencies shall be removed from the GSM Neighbour Cell list. Removed cells/frequencies shall keep their indices but no measurements or reporting shall be performed. If the index points to a cell that does not exist, this shall not be considered as an error.

A parameter NC_FREQUENCY_LIST may also be sent individually to an MS on PCCCH or PACCH. This list adds/deletes frequencies to the BA(GPRS) both for cell re-selection and for measurement reports. For added frequencies, the corresponding cell re-selection parameters may be included. If no cell re-selection parameters are given for a particular cell, that cell shall only be used in mode NC2. The list is valid until an empty list is sent to the MS.

Reference

3GPP 04.60, subclause 5.6.3.2

3GPP 05.08, subclause 10.1.4

42.4.8.4.3.2 Test Purpose

To verify that MS involved in measurement reporting reverts to BA(GPRS) on reception of PMO with empty NC_FREQUENCY_LIST list.

42.4.8.4.3.3 Method of test

Initial Conditions

System Simulator:

- 3 cells. Cell B is part of BA(GPRS) of Cell A. Cell C is not a part of the BA(GPRS) of Cell A. None of the cells support PBCCH.

Cell A (in case of GSM900 only): BS_PA_MFRMS = 2 (4 multi frames)

Mobile Station:

- The MS is in GPRS attached with a P-TMSI allocated on Cell A, Ready Timer deactivated.

Specific PICS Statements

-

PIXIT Statements

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Test Procedure

SS sends a PACKET MEASUREMENT ORDER message (including the NC_FREQUENCY_LIST) Changing the NC mode to NC2, deleting the cell B, while adding the cell C in the measurement list. SS checks that the measurements of the cell C are included in the Packet measurement report while that of Cell B are not included. The SS sends a PACKET MEASUREMENT ORDER message with an empty NC_FREQUENCY_LIST. SS checks that the MS starts sending the measurements of cell B while stops sending the measurements of the cell C.

Maximum Duration of Test

-

Expected Sequence

Step	Direction	Message	Comments
1	SS->MS	IMMEDIATE ASSIGNMENT	for single block downlink assignment on PCH corresponding to MS.
2	SS -> MS	PACKET MEASUREMENT ORDER	Sent on block assigned in step 1. See specific message content with establishment cause 'single block access'. Received on RACH. for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 2 seconds. -Sent on allocated PDCH -Contains "NC measurement report Struct"
3	MS -> SS	CHANNEL REQUEST	
4	SS -> MS	IMMEDIATE ASSIGNMENT	
5	MS -> SS	PACKET MEASUREMENT REPORT	
6			
7	SS->MS	IMMEDIATE ASSIGNMENT	for single block downlink assignment on PCH corresponding to MS.
8	SS -> MS	PACKET MEASUREMENT ORDER	-Sent on block assigned in step 1 See specific message content Empty NC_FREQUENCY_LIST list with establishment cause 'single block access'. Received on RACH. for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 2 seconds. -Sent on allocated PDCH -Contains "NC measurement report Struct"
9	MS -> SS	CHANNEL REQUEST	
10	SS -> MS	IMMEDIATE ASSIGNMENT	
11	MS -> SS	PACKET MEASUREMENT REPORT	
12			

Specific message contents:

SYSTEM INFORMATION TYPE 2 of Cell A:

Neighbour Cells Description - Format identifier - BCCH Allocation Sequence - BCCH Allocation ARFCN	For SI 2 For GSM 900: Bit map 0. For DCS 1 800 and PCS 1 900: Range 512. For GSM 700, T-GSM 810 and GSM 850: Range 128. 0 For GSM 900: Channel numbers 5, 20, 90, 100, 110, 120, 122 and 124. For DCS 1 800: Channel numbers 515, 590, 700, 780, 810, 870, 875 and 885. For PCS 1 900 Channel numbers 515, 590, 655, 700, 710, 740, 780 and 810. For GSM 700, T-GSM 810: Channel numbers 437, 447, 467, 477, 487, 497, 502 and 507. For GSM 850: Channel numbers 137,147, 157, 177, 197, 217, 227 and
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- EXT-IND	237. For GSM 900, this IE carries only part of the BA. For DCS 1 800, PCS 1 900, GSM 700, T-GSM 810 and GSM 850, this IE carries complete BA.
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PACKET MEASUREMENT ORDER in step 2:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	'100' (7,68 s)
NC_FREQUENCY_LIST	1
REMOVED_FREQ_LIST	1
NR_OF_REMOVED_FREQ	00000
REMOVED_FREQ_INDEX	000000 – Remove Cell B
Add Frequency list struct	1
START_FREQUENCY	GSM 900 GPRS: Containing ARFCN 80 of Cell C 00010100 ARFCN 80 (MSB) 00 ARFCN 80 (LS 2bits) DCS 1 800 and PCS 1 900 GPRS: Containing ARFCN 600 for Cell C 10010110 ARFCN 600 (MSB) 00 (LS 2 bits) GSM 700, T-GSM 810 GPRS: Containing ARFCN 447 01101111 ARFCN 447(MSB) 11 ARFCN 447(LS 2 bits) GSM 850 GPRS: Containing ARFCN 207 00110011 ARFCN 207 (MSB) 11 ARFCN 207 (LS 2 bits)
BSIC	001101
Cell Selection Params	0
NR_OF_FREQUENCIES	00000

PACKET MEASUREMENT ORDER in step 8:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	'100' (7,68s)
NC_FREQUENCY_LIST	0 (NC Frequency list not present)

42.4.8.4.4 Network Control measurement reporting / NC_FREQUENCY_LIST / Changes in BA(GPRS)/ Return to BA(GPRS).

42.4.8.4.4.1 Conformance requirement

A parameter NC_FREQUENCY_LIST may also be sent individually to an MS on PCCCH or PACCH. This list adds/deletes frequencies to the BA(GPRS) both for cell re-selection and for measurement reports. For added frequencies, the corresponding cell re-selection parameters may be included. The list is valid until an empty list is sent to the MS, there is a downlink signalling failure or the MS selects a new cell or the BA(GPRS) that is modified by the NC_FREQUENCY_LIST changes or the MS enters dedicated mode. A list given by Packet Cell Change Order applies in the new cell. The lists may also include cells with other radio access technologies.

Reference

3GPP 05.08, subclause 10.1.4

42.4.8.4.4.2 Test Purpose

To verify that MS returns to BA(GPRS) if BA(GPRS) on which the NC_FREQ_LIST is built, is changed.

42.4.8.4.4.3 Method of test

Initial Conditions

System Simulator:

3 cells, default settings. Cell C is removed from the BA(GPRS) on cell A.

Mobile Station:

The MS is in GPRS attached with a P-TMSI allocated on Cell A. READY_TIMER is set to 5 min.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

SS sends a PACKET MEASUREMENT ORDER message (including the NC_FREQUENCY_LIST) Changing the NC mode to NC2, deleting the cell B, while adding the cell C in the measurement list. SS checks that the measurements of the cell C are included in the Packet measurement report while that of Cell B are not included. The SS changes the BA(GPRS) given on the broadcast channels. SS waits for 35 seconds. SS checks that the MS reverts back to sending of the measurements of cell B while stops sending the measurements of the cell C.

Maximum Duration of Test

-

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	SS establishes a single block downlink
1b	SS -> MS	PACKET MEASUREMENT ORDER	See specific message content
2	MS -> SS	CHANNEL REQUEST	'Single block packet access'
3	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Single block assignment
4	MS -> SS	PACKET MEASUREMENT REPORT	-Sent on allocated PDCH -Contains "NC measurement report Struct"
5	SS		Steps 2-4 are repeated twice. SS Verifies that the measurement results for cells A, C are included in, at least, the last PACKET MEASUREMENT REPORT, while the measurements of cell B is not included in it. Previous PACKET MEASUREMENT REPORT may not include cell C (but should not include cell B), due to the new BSIC synchronization.
6	SS		SS Changes BA(GPRS) list broadcast in SI2 (SI2bis) on BCCH. SI2 change is indicated in SI13 rest octets. See Specific message content SS waits for 35 seconds While waiting, MS may send measurement reports, in that case repeat steps 2-4.
7	MS -> SS	CHANNEL REQUEST	'Single block packet access'
8	SS -> MS	IMMEDIATE ASSIGNMENT	-Sent on AGCH Single block assignment
9	MS -> SS	PACKET MEASUREMENT REPORT	-Sent on allocated PDCH -Contains "NC measurement report Struct" SS verifies that measurement reports for Cell B are included and not of Cell C.

Specific message contents

PACKET MEASUREMENT ORDER in step 1b:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	'100' (7,68 s)
NC_FREQUENCY_LIST	1
REMOVED_FREQ_LIST	1
NR_OF_REMOVED_FREQ	00000
REMOVED_FREQ_INDEX	000000 – Remove Cell B
Add Frequency list struct	1
START_FREQUENCY	GSM 900 GPRS: Containing ARFCN 80 of Cell C 00010100 ARFCN 80 (MSB) 00 ARFCN 80 (LS 2bits) DCS 1 800 and PCS 1 900 GPRS: Containing ARFCN 600 for Cell C 10010110 ARFCN 600 (MSB) 00 (LS 2 bits) GSM 700, T-GSM 810 GPRS: Containing ARFCN 447 01101111 ARFCN 447(MSB) 11 ARFCN 447(LS 2 bits) GSM 850 GPRS: Containing ARFCN 207 00110011 ARFCN 207(MSB) 11 ARFCN 207(LS 2 bits)
BSIC	001101
Cell Selection Params	0
NR_OF_FREQUENCIES	00000

SYSTEM INFORMATION TYPE 2 of Cell A in step 6:

Neighbour Cells Description	For SI 2
- BA_IND	1
- BCCH Allocation ARFCN	For GSM 900: Channel numbers 5, 20, 90, 110, 120, 122 and 124. For DCS 1 800: Channel numbers 515, 590, 780, 810, 870, 875 and 885. For PCS 1 900 Channel numbers 515, 590, 700, 710, 740, 780 and 810. For GSM 700, T-GSM 810: Channel numbers 437, 447, 477, 487, 497, 502 and 507. For GSM 850: Channel numbers 137,147, 197, 217, 227 and 237.

NOTE: Cell D removed from BA(list)

SYSTEM INFORMATION TYPE 2bis of Cell A in step 6 (for GSM 900 only):

Neighbour Cells Description	For SI 2bis
- BA_IND	1

SYSTEM INFORMATION TYPE 13 of Cell A in step 6:

BCCH Change Mark	0001
SI Change Field	0010 change of SI2 indicated

42.4.8.4.5 Network Control measurement reporting / NC_FREQUENCY_LIST / Dedicated connection/ Return to BA(GPRS)

42.4.8.4.5.1 Conformance requirement

The procedure for measurement report sending shall be initiated by the mobile station at expiry of either the NC measurement report interval timer T3158 or the EM measurement report interval timer T3178. At expiry of the timer T3158 or T3178 the mobile station shall restart the expired timer T3158 or T3178, perform the measurements and initiate the packet access.

The procedure for measurement report sending is initiated by the mobile station either on PCCCH (subclause 7.3.1) or, if a packet control channel not exists, on CCCH (subclause 7.3.2).

If the mobile station initiates an RR connection establishment, the timers T3158 and T3178 shall be stopped and no measurement reports shall be sent. When the RR connection is released and if the mobile station has not changed cell, the measurement reporting procedure shall be restarted.

In a cell with a PBCCH allocated, if PSI3_CHANGE_MARK is changed, the mobile station shall re-read and rebuild the GSM Neighbour Cell list.

Reference

3GPP 04.60, subclause 7.3
3GPP 04.60, subclause 5.6.3.2

42.4.8.4.5.2 Test Purpose

To verify that MS involved in measurement reporting successfully returns to BA(GPRS) broadcast on BCCH after a dedicated connection.

42.4.8.4.5.3 Method of test

Initial Conditions

System Simulator:

- 3 cells, default settings. Cell C is removed from the BA(GPRS) on both cell A and cell B.
- Ready Timer Deactivated on all cells.

Mobile Station:

The MS is in GPRS attached with a TMSI and a P-TMSI allocated.

Specific PICS Statements

- Support of Immediate Connect (TSPC_AddInfo_ImmConn)

PIXIT Statements

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Test Procedure

SS sends a PACKET MEASUREMENT ORDER message (including the NC_FREQUENCY_LIST) changing the NC mode to NC2, deleting the cell B, while adding the cell C to the measurement list. SS checks that the measurements of the cell C are included in the third Packet measurement report while that of Cell B are not included. The SS pages MS for a CS call. SS establishes a call with MS. After 5 seconds releases the call. SS reduces the signal strength of the cell A, in such a way that the cell B and C are better than cell A. Cell C is better than cell B. SS checks that the MS does the reselection to cell B, even though cell C is better. This way we will check that the MS returns to broadcast parameters after a dedicated connection.

Maximum Duration of Test

-

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	SS establishes a single block down link
1b	SS -> MS	PACKET MEASUREMENT ORDER	See specific message content
2	MS -> SS	CHANNEL REQUEST	'Single block packet access'
3	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Single block assignment
4	MS -> SS	PACKET MEASUREMENT REPORT	-Sent on allocated PDCH -Contains "NC measurement report Struct"
5	SS		Steps 2-4 are repeated twice. SS Verifies that the measurement results for cells A, C are included in, at least, the last PACKET MEASUREMENT REPORT, while the measurements of cell B is not included in it. Previous PACKET MEASUREMENT REPORT may not include cell C (but should not include cell B), due to the new BSIC synchronization.
6		{MT Call while GPRS Attach}	Macro parameters: T : 5 seconds R : 1, Resumption GPRS done
7	SS		SS changes the signal strength of Cell B and Cell C such that Cell B and Cell C are better than Cell A
8	MS -> SS	CHANNEL REQUEST	Received on Cell B 'One Phase Packet Access'
9	SS -> MS	IMMEDIATE ASSIGNMENT	Sent on AGCH. Assigning Single Block , to order the MS making two-phase access procedure
10	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned. ACCESS TYPE = Two Phase Access Request or Cell update.
11	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, Sent on PACCH.
12	SS	{Completion of uplink RLC data transfer }	For the empty LLC frame serving as cell update

Specific message contents:

PACKET MEASUREMENT ORDER in step 1b:

NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	'100' (7,68 s)
NC_FREQUENCY_LIST	1
REMOVED_FREQ_LIST	1
NR_OF_REMOVED_FREQ	00000
REMOVED_FREQ_INDEX	000000 – Remove Cell B
Add Frequency list struct	1
START_FREQUENCY	GSM 900 GPRS: Containing ARFCN 80 of Cell C 00010100 ARFCN 80 (MSB) 00 ARFCN 80 (LS 2bits) DCS 1 800 and PCS 1 900 GPRS: Containing ARFCN 600 for Cell C 10010110 ARFCN 600 (MSB) 00 (LS 2 bits) GSM 700, T-GSM 810 GPRS: Containing ARFCN 447 01101111 ARFCN 447(MSB) 11 ARFCN 447(LS 2 bits)
BSIC	GSM 850 GPRS: Containing ARFCN 207 00110011 ARFCN 207(MSB) 11 ARFCN 207(LS 2 bits) 001101
Cell Selection Params	0
NR_OF_FREQUENCIES	00000

42.4.8.4.6 Network Control measurement reporting / NC_FREQUENCY_LIST / PMO sent in multiple instances.

42.4.8.4.6.1 Conformance requirement

If the mobile station receives a PACKET MEASUREMENT ORDER message (full set of instances) with changed PMO_IND parameter value, any old "NC frequency list" shall be deleted. If the last PACKET MEASUREMENT ORDER message (full set of instances) does not contain a "NC frequency list" (no added or deleted frequencies) the mobile station shall return to BA(GPRS).

MS receives NC_FREQUENCY_LIST in multiple instances by adding and deleting a cell in each of these instances. SS verifies that MS constructs Frequency list and checks PACKET MEASUREMENT REPORTS of these cells are included

Reference

3GPP TS 05.08 Sec 10.1.4

3GPP TS 04.60 Sec 5.6.1

42.4.8.4.6.2 Test Purpose

To verify that when instances of PACKET MEASUREMENT ORDER is sent including NC_FREQUENCY_LIST MS has to construct this frequency list and include the cells in the PACKET MEASUREMENT REPORTS.

42.4.8.4.6.3 Method of test

Initial conditions

System Simulator:

3 cells default settings.,

Cell A in NC2. Cell C is removed from the BA(GPRS) of cell A.

Mobile Station:

MS is in Packet Idle mode and GPRS attached on Cell A.

PDP context 2 established.

Specific PICS Statements

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PIXIT Statements

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Foreseen final state of the MS

- MS is in transfer mode.

Test procedure

SS receives few PACKET MEASUREMENT REPORTS. SS checks that the measurements of the cell B are included in the Packet measurement report while that of Cell C is not included.

SS sends a PACKET MEASUREMENT ORDER message (including the NC_FREQUENCY_LIST) in 2 instances. It deletes the cell B in instance 1, while adds the cell C in instance 2.

SS checks that the measurements of the cell C are included in the Packet measurement report while that of Cell B are not included.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation one phase access with contention resolution} Or {Uplink dynamic allocation two phase access}	Macro parameters: 4000 : the number of RLC data block to be transferred, USF_GRANULARITY : 1 RLC_DATA_BLOCKS_GRANTED : absent (open-end) CHANNEL_CODING_COMMAND : CS-1 TLLI_BLOCK_CHANNEL_CODING : CS-1 USF assigned to the MS in step 1.
2a	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	
2b	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH. USF assigned to the MS in step 1. The SS acks all the received RLC data blocks.
3a	MS->SS	RLC data block	
3b	MS->SS	PACKET MEASUREMENT REPORT	
4	SS		Repeat step 2-3 (periodically assign USF to the MS) until measurement results for cell B are included. Every 10 th repetition, step 2b shall be performed instead of step 2a. SS checks that measurements of Cell C are not included in any of the PACKET MEASUREMENT REPORT message received.
5	SS -> MS	PACKET MEASUREMENT ORDER	Sent on the PACCH. - Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD - With NC_FREQUENCY_LIST This message is sent in two instances. It deletes the cell B in instance 1, while adds the cell C in instance 2.
6a	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	See specific message contents USF assigned to the MS in step 1.
6b	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH. USF assigned to the MS in step 1. The SS acks all the received RLC data blocks.
7a	MS->SS	RLC data block	
7b	MS->SS	PACKET MEASUREMENT REPORT	
8	SS		Repeat step 6-7 (periodically assign USF to the MS) until measurement results for cell C are included while that of Cell B are not included in the PACKET MEASUREMENT REPORT message. Every 10 th repetition, step 6b shall be performed instead of step 6a.
Note1:	in step 3x and 7x, the MS shall perform either the 'a' branch or the 'b' branch.		
Note2:	in step 2x and 6x, the MS shall perform either the 'a' branch or the 'b' branch. Every 10 th execution of the test step, the 'b' branch shall be performed.		

Specific message contents

PACKET MEASUREMENT ORDER in step 5 (1st Instance):

MESSAGE_TYPE	0000 11
PAGE_MODE	00 Normal Paging
flag	0 (TFI)
UplinkDownlink flag	0 (Uplink)
Uplink TFI	as assigned in step 01
PMO_INDEX	0 0 0 first message
PMO_COUNT	0 0 1 two messages expected
{ 0 1 < NC Measurement Parameters }	1 NC Measurement Parameters available
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	10 NC2
{ 0 1 < NC_NON_DRX_PERIOD	1 Additional NC parameters available
< NC_REPORTING_PERIOD_I	NC_NON_DRX_PERIOD = 000
< NC_REPORTING_PERIOD_T }	(No non-DRX mode after a measurement report has been sent)
	NC_REPORTING_PERIOD_I = 100
	(7.68 sec)
	NC_REPORTING_PERIOD_T = 011
	(3.84 sec)
	1 NC Frequency list struct available
{ 0 1 < NC_FREQUENCY_LIST }	
NC Frequency list	
{ 0 1 { < NR_OF_REMOVED_FREQ	1 Frequencies have been removed (cell B (1 st entry in the BA(GPRS) is removed))
NR_OF_REMOVED_FREQ	00000
REMOVED_FREQ_INDEX	000000
{ 1 < List of added Frequency struct	0 No Added Frequency list
} 0	End of list
< padding bits >	Spare Padding

PACKET MEASUREMENT ORDER in step 5 (2nd Instance):

MESSAGE_TYPE	0000 11
PAGE_MODE	00 Normal Paging
Flag	0 (TFI)
UplinkDownlink flag	0 (Uplink)
Uplink TFI	as assigned in step 01
TLLI	no TLLI included
-	
PMO_INDEX	0 0 1 second message of two messages
PMO_COUNT	0 0 1 two messages expected
{ 0 1 < NC Measurement Parameters }	1 NC Measurement Parameters available
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	10 NC2
{ 0 1 < NC_NON_DRX_PERIOD	1 Additional NC parameters available
< NC_REPORTING_PERIOD_I	NC_NON_DRX_PERIOD = 000
< NC_REPORTING_PERIOD_T }	(No non-DRX mode after a measurement report has been sent)
	NC_REPORTING_PERIOD_I = 100
	(7.68 sec)
	NC_REPORTING_PERIOD_T = 011
	(3.84 sec)
	1 NC Frequency list struct available
{ 0 1 < NC_FREQUENCY_LIST }	
NC Frequency list	
{ 0 1 { < NR_OF_REMOVED_FREQ	
REMOVED_FREQ_INDEX}	0 No Frequencies Removed
{ 1 < List of added Frequency struct	
Add Frequency list	
START_FREQUENCY	Adding the cell C in Instance 2
	00 1010 0000 (ARFCN 80, for GSM 900)
	10 0101 1000 (ARFCN 600, for DCS1800,
	PCS1900)
	01 1011 0101 (ARFCN 437, for GSM 700, T-GSM
	810)
	00 1100 1111 (ARFCN 207, for GSM 850)
	001101
	1 cell selection parameters available
BSIC	
{ 0 1 < Cell selection params	
Cell selection params	
EXC_ACC	0
CELL_BAR_ACCESS_2	0 normal reselection
SAME_RA_AS_SERVING_CELL	1 same RA as serving cell
{ 0 1 < GPRS_RXLEV_ACCESS_MIN }	1 GPRS_RXLEV_ACCESS_MIN present
GPRS_RXLEV_ACCESS_MIN	010101 -90dBm
GPRS_MS_TXPWR_MAX_CCH	01010
{ 0 1 < GPRS_TEMPORARY_OFFSET }	1 GPRS_TEMPORARY_OFFSET present
GPRS_TEMPORARY_OFFSET	000
GPRS_PENALTY_TIME	0000
{ 0 1 < GPRS_RESELECT_OFFSET }	1 GPRS_RESELECT_OFFSET present
GPRS_RESELECT_OFFSET	10000 0dBm
{ 0 1 < HCS params }	1 HCS params present
GPRS_PRIORITY_CLASS	000
GPRS_HCS_THR	10100
{ 0 1 < SI13_PBCCH_LOCATION }	1 SI13_PBCCH_LOCATION present
{ 0 < SI13_LOCATION }	0
SI13_LOCATION	0 SI13 is sent on BCCH nom
NR_OF_FREQUENCIES	0000
FREQ_DIFF_LENGTH	000
} 0	End of list
< padding bits >	Spare Padding

42.4.8.4.7 Network Control measurement reporting / NC_FREQUENCY_LIST / same cell present twice in the list.

42.4.8.4.7.1 Conformance requirement

The "NC Frequency List" may add cells to the GSM Neighbour Cell list . These cells shall be added at the end of the GSM Neighbour Cell list and indexed in the order of occurrence within the PACKET CELL CHANGE ORDER

message or ascending instances of the PACKET MEASUREMENT ORDER message. The list of added cells may contain GPRS cell re-selection parameters.

In case the same cell (ARFCN+BSIC) or the same ARFCN without BSIC occur more than once in the resulting GSM Neighbour Cell list, each occurrence shall be assigned an index but only the cell with the highest index shall be used for cell re-selection and referred to in measurement reports.

Reference

3GPP TS 04.60, subclause 5.6.1.

42.4.8.4.7.2 Test Purpose

To verify that if a same cell (ARFCN+BSIC) occurs more than once in the Neighbour cell list; MS reports the cell with the highest index.

42.4.8.4.7.3 Method of test

Initial conditions:

System Simulator:

2 cells, GPRS supported.

Mobile Station:

The MS is GPRS attached, in Packet Idle Mode.

Specific PICS Statements

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PIXIT Statements

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Test procedure

SS sends a PACKET MEASUREMENT ORDER message (including the NC_FREQUENCY_LIST) Changing the NC mode to NC2, adding the cell B to the Neighbour cell list.

SS checks that the MS is reporting the cell B, with the highest index number for the cell given by the NC_FREQUENCY_LIST.

Maximum duration of the test

5 min.

Expected sequence

Step	Direction	Message	Comments
1A	SS->MS	IMMEDIATE ASSIGNMENT	SS establishes a single block down link
1B	SS->MS	PACKET MEASUREMENT ORDER	Sent in the allocated block. See specific message contents.
2	MS->SS	CHANNEL REQUEST	ACCESS TYPE ='Single block packet access' Received on RACH.
3	SS->MS	IMMEDIATE ASSIGNMENT	Sent on AGCH, assigning a single block.
4	MS->SS	PACKET MEASUREMENT REPORT	Received on the allocated PDCH. Check that the MS reports the measurements for cell B with the highest Index . See specific message contents.

Specific message contents

Step 1B: Packet Measurement Order

MESSAGE_TYPE	0000 11
PAGE_MODE	00 Normal Paging
TLLI	10 (address is TLLI)
-	Same as the value received from MS
PMO_INDEX	0 0 0 first message
PMO_COUNT	0 0 0 one message expected
{ 0 1 < NC Measurement Parameters }	1 NC Measurement Parameters available
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	1 0 NC2
{ 0 1 < NC_NON_DRX_PERIOD	1 Additional NC parameters available
< NC_REPORTING_PERIOD_I	NC_NON_DRX_PERIOD = 000
< NC_REPORTING_PERIOD_T }	(No non-DRX mode after a measurement report has been sent)
	NC_REPORTING_PERIOD_I = 100
	(7.68 sec)
	NC_REPORTING_PERIOD_T = 011
	(3.84 sec)
	1 NC Frequency list struct available
{ 0 1 < NC_FREQUENCY_LIST }	
NC Frequency list	
{ 0 1 { < NR_OF_REMOVED_FREQ	0 No frequencies to be removed
{ 1 < List of added Frequency struct	
Add Frequency list	
START_FREQUENCY	00 0000 0101 (ARFCN 5, for GSM900)
	01 1011 1111 (ARFCN 447, for GSM700, T-GSM 810)
	00 1000 1001 (ARFCN 137, for GSM850)
	10 0000 0011 (ARFCN 515, for PCS 1900)
	10 0000 0011 (ARFCN 515, for DCS 1800)
	001101
	1 cell selection parameters available
BSIC	
{ 0 1 < Cell selection params	
Cell selection params	
EXC_ACC	0
CELL_BAR_ACCESS_2	0 normal reselection
SAME_RA_AS_SERVING_CELL	1 same RA as serving cell
{ 0 1 < GPRS_RXLEV_ACCESS_MIN }	0 GPRS_RXLEV_ACCESS_MIN absent
{ 0 1 < GPRS_TEMPORARY_OFFSET }	0 GPRS_TEMPORARY_OFFSET absent
{ 0 1 < GPRS_RESELECT_OFFSET }	0 GPRS_RESELECT_OFFSET absent
{ 0 1 < HCS params }	0 HCS params absent
{ 0 1 < SI13_PBCCH_LOCATION }	0 SI13_PBCCH_LOCATION absent
{ 0 < SI13_LOCATION }	0
SI13_LOCATION	0 SI13 is sent on BCCH norm
NR_OF_FREQUENCIES	0000
FREQ_DIFF_LENGTH	000

Step 4: Packet Measurement Report

FREQUENCY_N	GSM900: 001110(Corresponding to Cell B's Highest Index) GSM1800,1900,850: 001001(Corresponding to Cell B's Highest Index)
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42.4.8.5 NC2 and DTM

42.4.8.5.1 Ignoring Packet Measurement Order and Packet Cell Change Order whilst in DTM

42.4.8.5.1.1 Conformance requirements

An MS in network control mode NC1 or NC2 may enter an exceptional case if a circuit switched connection is established, which takes precedence over GPRS cell re-selection. This includes an MS operating in DTM.

References

3GPP TS 45.008, sub-clause 10.1.4.3

42.4.8.5.1.2 Test purpose

To verify that the MS operating in DTM ignores Packet Measurement Order and Packet Cell Change Order.

42.4.8.5.1.3 Method of test

Initial Conditions

System Simulator:

2 cells with default parameter: A, B with same LAI, both supporting GPRS DTM

Mobile Station:

The MS is in the active state (U10) of a call on Timeslot N (chosen arbitrarily) of cell A and has the PDP context 1 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

The MS, whilst in dedicated mode, is triggered to initiate packet uplink transfer data in RLC unacknowledged mode and sends a DTM REQUEST message. On receiving the DTM REQUEST message, requesting uplink resources, the SS assigns the MS PS resource. The SS accomplishes the resource assignment by passing a PACKET ASSIGNMENT message to the MS. On receiving the PACKET ASSIGNMENT message, the MS starts to send RLC DATA BLOCKS to the SS on the assigned PDTCH. Right after the beginning a PACKET UPLINK ACK/NACK is send from the SS to reset T3182 on MS side. Then the SS sends a PACKET CELL CHANGE ORDER to the MS containing BSIC and the BCCH frequency of cell B. The SS maintains the CS call and checks that no CHANNEL REQUESTS on cell B received. Then the transmission is completed.

Maximum Duration of Test

5 minutes

Expected Sequence

The test sequence is repeated for k = 1,2.

Step	Direction	Message	Comments
1	SS		MS in the active state (U10) of a call on Timeslot N. When: k=1, Channel Type=TCH/F; k=2, Channel Type=TCH/H.
2	MS		Trigger the MS to initiate an uplink packet transfer containing 2000 octets .
3	MS -> SS	DTMREQUEST	See specific message contents Macro Sent on PACCH: Contains -BSIC + BCCH frequency of cell B. -The network control order, NC2 See specific message contents SS maintaining the CS call and check for 3 seconds that MS is not sending any Channel Requests on cell B Macro - Completion of the 2.000 octets of Data
4	SS -> MS	PACKET ASSIGNMENT	
5	SS<->MS	{Uplink Data}	
6	SS -> MS	PACKET CELL CHANGE ORDER	
7	SS<->MS	{ Uplink data transfer }	

Specific Message Contents

PACKET ASSIGNMENT (Step 4):

k=1:

Information Element	Value/remark
As default message contents except: RR Packet Uplink Assignment IE RR Packet Downlink Assignment IE - TIMESLOT_ALLOCATION	Not included (N ± 1) MOD 8

k=2:

Information Element	Value/remark
As default message contents except: RR Packet Uplink Assignment IE RR Packet Downlink Assignment IE - TIMESLOT_ALLOCATION	Not included N

PACKET CELL CHANGE ORDER (Step 7):

Global TFI	TFI of the uplinkTBF
IMMEDIATE_REL	1
ARFCN, BSIC	specified for cell B
NC Measurement parameters	
NETWORK_CONTROL_ORDER	10 (NC2)
NC_REPORTING_PERIOD_I	111 (61.44 sec)
NC_REPORTING_PERIOD_T	100 (7.68 sec)
NC_FREQUENCY_LIST	0 (not present)

42.5 Downlink Transfer

42.5.1 Downlink Transfer / Normal Operation

42.5.1.1 Void

42.5.1.2 Downlink Transfer/ Normal Operation / Without TBF starting time

42.5.1.2.1 Void

42.5.1.2.2 Conformance Requirement

1. On receipt of a PACKET DOWNLINK ASSIGNMENT message, the mobile station shall switch to the assigned PDCHs.
2. The Packet downlink assignment procedure is completed when the mobile station receives a valid RLC/MAC block. The mobile station has entered the packet transfer mode.
3. If the MS is required to transmit a PACKET CONTROL ACKNOWLEDGEMENT subsequent to a PACKET DOWNLINK ASSIGNMENT, the MS shall be ready to receive on the new assignment no later than the next occurrence of block B((x+2) mod 12) where block B(x) is radio block containing the PACKET CONTROL ACKNOWLEDGEMENT.

References

3GPP TS 04.60, subclauses 7.2.1.1, 7.2.1.2 and 10.4.5.

3GPP TS 05.10, subclause 6.11.1.

42.5.1.2.3 Test purpose

Verify that an MS switches to the assigned PDCH when assigned to it without a starting time, within 3 blocks.

42.5.1.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, CTRL_ACK_TYPE=0 in GPRS cell options.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message, containing no starting time.
2. SS transmits a downlink RLC data block.
3. MS responds by sending a PACKET DOWNLINK ACK/NACK.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF, Sent on PCH.
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to the assigned PDCH. (no starting time) With valid RRBp field
2	MS->SS	PACKET CONTROL ACK	4 access bursts. Sent in the block specified by RRBp field in step 1.
3	SS -> MS	RLC DATA BLOCK	2 blocks after the previous message, with valid RRBp field, on assigned PDCH, addressed to MS.
4	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block sent in step 3.
5		{Competition of downlink data transfer}	Macro

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1b:

TIMESLOT_ALLOCATION	<one timeslot assigned>
PACKET TIMING ADVANCE	Timing Advance Value as default
TBF STARTING TIME	<IE not present>

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP	00 – Response shall be sent by MS in N+13 frames.
S/P	1 – RRBp field is valid

42.5.2 Downlink Transfer / Polling

42.5.2.1 Downlink Transfer/ Polling/ Normal operation/RLC data block

42.5.2.1.1 Void

42.5.2.1.2 Conformance Requirement

Whenever the mobile station receives an RLC data block addressed to itself and with a valid RRBP field in the RLC data block header (i.e., is polled), the mobile station shall transmit a PACKET DOWNLINK ACK/NACK message in the uplink radio block specified by the RRBP field whatever the BSN value of the received RLC data block, unless another RLC/MAC control message is waiting to be transmitted, in which case the other RLC/MAC control message shall be sent.

The RRBP value specifies a single uplink block in which the mobile station shall transmit either a PACKET CONTROL ACKNOWLEDGEMENT message or a PACCH block to the network. If the RRBP field is received as part of an RLC/MAC block containing an RLC/MAC control block containing any message except Packet Paging Request, Packet Access Reject, and Packet Queuing Notification, the mobile station shall transmit a PACKET CONTROL ACKNOWLEDGEMENT message in the uplink radio block specified. If the RRBP field is received as part of an RLC/MAC block containing an RLC/MAC control block containing a Packet Paging Request, Packet Access Reject, or Packet Queuing Notification message, the mobile station shall ignore this RRBP field. The mobile station shall only react on RLC/MAC control blocks containing a valid RRBP field if the mobile station is unambiguously addressed either in the downlink RLC/MAC control block header or in the control message itself.

References

3GPP TS 04.60, subclauses 8.1.2.2 and 10.4.5.

42.5.2.1.3 Test purpose

Verify that an MS responds to a poll with a PACKET DOWNLINK ACK/NACK message in the block specified by the RRBP field.

42.5.2.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a IMMEDIATE ASSIGNMENT message to establish a downlink TBF , containing no starting time.
2. SS transmits a downlink RLC data block.
3. MS responds by sending a PACKET DOWNLINK ACK/NACK in the block specified by the RRBP field of the RLC data block.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to switch to assigned PDCH.
2	SS -> MS	RLC DATA BLOCK	3 blocks after the previous message, with valid RRBP field, on assigned PDCH, addressed to MS.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the RLC DATA BLOCK 26 frames after step 2.
4		{Competition of downlink data transfer}	Macro

Specific Message Contents

IMMEDIATE ASSIGNMENT message in step 1:

Packet Channel Description - TN TIMING ADVANCE TBF STARTING TIME	<One timeslot assigned> Timing Advance Value = as default <IE not present>
---	--

DOWNLINK RLC DATA BLOCK in step 2:

RRBP S/P	11 – Response shall be sent by MS in N+26 frames. 1 – RRBP field is valid
-------------	--

42.5.2.2 Downlink Transfer/ Polling/ Packet Polling Request/ Access Burst format

42.5.2.2.1 Void

42.5.2.2.2 Conformance Requirement

The network may send to the mobile station a PACKET POLLING REQUEST message. If the MS has received a PACKET DOWNLINK ASSIGNMENT message with no starting time or with a starting time that has already elapsed, the PACKET POLLING REQUEST message shall be sent on PACCH. Otherwise the PACKET POLLING message shall be sent on PAGCH. The mobile station shall be addressed by its TLLI or TFI.

On receipt of a PACKET POLLING REQUEST message, the mobile station shall respond to the network with the PACKET CONTROL ACKNOWLEDGEMENT message in the reserved uplink radio block specified by the RRBP field. The reserved block is considered as a one block PACCH allocation.

References

3GPP TS 04.60, subclause 7.2.1.3.

42.5.2.2.3 Test purpose

Verify that an MS responds to a PACKET POLLING REQUEST message (requesting access burst format) with a PACKET CONTROL ACKNOWLEDGEMENT message in access burst format.

42.5.2.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT, containing no starting time.
2. SS transmits downlink RLC data blocks.
3. SS transmits a PACKET POLLING REQUEST message, requesting access burst format.
4. MS responds by sending a PACKET CONTROL ACKNOWLEDGE message in access burst format.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF, Sent on PCH.
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH.
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS.
3	SS -> MS	PACKET POLLING REQUEST	Requesting access burst format
4	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	MS acknowledges using 11-bit access burst format.
5		{Competition of downlink data transfer}	Macro

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1b:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME	<IE not present>

PACKET POLLING REQUEST in step 3:

TYPE_OF_ACK Global TFI (downlink)	0 – MS response sent as 4 access bursts Addressing MS
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PACKET CONTROL ACKNOWLEDGMENT access bursts in step 4:

MESSAGE_TYPE	1111 1100 1
CTRL_ACK	11

42.5.2.3 Downlink Transfer/ Polling/ Packet Polling Request/ Control block format

42.5.2.3.1 Void

42.5.2.3.2 Conformance Requirement

The network may send to the mobile station a PACKET POLLING REQUEST message. If the MS has received a PACKET DOWNLINK ASSIGNMENT message with no starting time or with a starting time that has already elapsed, the PACKET POLLING REQUEST message shall be sent on PACCH. Otherwise the PACKET POLLING message shall be sent on PAGCH. The mobile station shall be addressed by its TLLI or TFI.

On receipt of a PACKET POLLING REQUEST message, the mobile station shall respond to the network with the PACKET CONTROL ACKNOWLEDGEMENT message in the reserved uplink radio block specified by the RRBP field. The reserved block is considered as a one block PACCH allocation.

References

3GPP TS 04.60, subclause 7.2.1.3.

42.5.2.3.3 Test purpose

Verify that an MS responds to a PACKET POLLING REQUEST message (requesting control block format) with a PACKET CONTROL ACKNOWLEDGEMENT message in control block format, in the uplink block specified by the RRBP field.

42.5.2.3.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message, containing no starting time.
2. SS transmits downlink RLC data blocks.
3. SS transmits a PACKET POLLING REQUEST message, requesting control block format.
4. MS responds by sending a PACKET CONTROL ACKNOWLEDGE message in control block format.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF, Sent on PCH.
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH.
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS.
3	SS -> MS	PACKET POLLING REQUEST	Requesting control block format; RRBP field specifies N+21 (or N+22 frames)
4	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	MS acknowledges in the uplink block N+21 (or N+22 frames)
5		{Competition of downlink data transfer}	Macro

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1b:

TIMESLOT_ALLOCATION	<one timeslot assigned>
PACKET TIMING ADVANCE	Timing Advance Value as default
TBF STARTING TIME	<IE not present>

PACKET POLLING REQUEST in step 3:

RRBP	10 – MS response sent in N+21 or N+22 frames
S/P	1 – RRBP field is valid
TYPE_OF_ACK	1 – MS response sent in RLC/MAC control block
TFI	Addressing MS

PACKET CONTROL ACKNOWLEDGMENT in step 4:

TLLI (32)	<of this MS>
CTRL_ACK	11

42.5.3 Downlink Transfer / T3190 Expiry / Initial allocation

42.5.3.1 Downlink Transfer/ T3190 Expiry / Initial allocation / Restart with valid RLC data block

42.5.3.1.1 Void

42.5.3.1.2 Conformance Requirement

When receiving the PACKET DOWNLINK ASSIGNMENT message and after waiting the TBF Starting Time when applicable, the mobile station starts timer T3190. The timer is reset when receiving the first valid RLC/MAC block.

On expiry of timer T3190, the mobile station shall abort the procedure and return to packet idle mode.

If the mobile station receives a valid RLC data block addressed to itself, the mobile station shall reset and restart timer T3190. If timer T3190 expires, the mobile station shall perform an abnormal release with return to CCCH or PCCCH (see subclause 8.7.1).

References

3GPP TS 04.60, subclauses 7.2.1.1, 8.1.2.1 and 10.4.5.

42.5.3.1.3 Test purpose

Verify that an MS starts T3190 when receiving the PACKET DOWNLINK ASSIGNMENT, resets and restarts the timer when a valid RLC/MAC block is received, and returns to packet idle mode when T3190 expires.

42.5.3.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT, containing relative -encoded starting time.
2. $(0.8 \cdot T3190)$ seconds after the starting time occurs, the SS transmits a downlink RLC data block with polling indicated.
3. MS sends PACKET DOWNLINK ACK/NACK on PACCH in response to the RLC data block.
4. $(1.2 \cdot T3190)$ seconds after the previous downlink RLC data block, the SS transmits another downlink RLC data block with polling indicated.
5. The MS ignores the downlink block (because it has already returned to packet idle mode upon expiry of T3190).

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF, Sent on PCH.
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to the assigned PDCH and start T3190 at the starting time indicated.
2	SS -> MS	RLC DATA BLOCK	Sent on assigned PDCH, $(T3190 \cdot 0.8)$ seconds after expiry of the TBF Starting Time indicated in Step 1, with valid RRBp field, addressed to MS. T3190 is then restarted.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previous RLC data block.
4	SS -> MS	RLC DATA BLOCK	Sent on assigned PDCH, $(T3190 \cdot 1.2)$ seconds after step 2, with valid RRBp field, addressed to MS.
5	SS		Verify the MS does not respond to the previous RLC block, and that the MS does not transmit on the PACCH of the assigned PDCH.
6	SS->MS	IMMEDIATE ASSIGNMENT	Sent on assigned paging channel. This is to verify the MS is in packet idle mode with no starting time.
7	SS->MS	RLC DATA BLOCK	Sent on assigned PDCH, $(T3190 \cdot 0.8)$ seconds after step 6, with valid RRBp field, addressed to MS.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previous RLC data block.
9		{Competition of downlink data transfer}	Macro

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1b:

TIMESLOT_ALLOCATION TBF STARTING TIME - Starting Frame Number Description IE	<one timeslot assigned> 1 - Relative frame number encoding: 0000000101101 – k=45: first frame of block is N+199 or N+200
--	--

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP S/P	00 – Response shall be sent by MS in N+13 frames. 1 – RRBp field is valid
-------------	--

42.5.4 Downlink Transfer / T3190 Expiry / Resource reallocation

42.5.4.1 Downlink Transfer/ T3190 Expiry / Resource reallocation / Without TBF starting time

42.5.4.1.1 Void

42.5.4.1.2 Conformance Requirement

On receipt of a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message, and after the TBF starting time, if present, the mobile station shall switch to the assigned PDCHs. Upon switching to the new PDCHs the mobile station shall restart timer T3190.

When the mobile station receives an RLC/MAC block addressed to itself on any of the new assigned resources it shall restart timer T3190. If timer T3190 expires, the mobile station shall perform an abnormal release with return to CCCH or PCCCH (see subclause 8.7.1).

References

3GPP TS 04.60, subclause 8.1.2.4.

42.5.4.1.3 Test purpose

Verify that an MS switches to the newly assigned PDCH when no starting time is present, and release the PDCH when T3190 expires.

42.5.4.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a IMMEDIATE ASSIGNMENT message establish downlink TBF, containing no starting time.
2. SS transmits a downlink RLC data block.
3. MS responds by sending a PACKET DOWNLINK ACK/NACK.
4. SS transmits another PACKET DOWNLINK ASSIGNMENT message on PACCH, containing no starting time.
5. (T3190 * 1.2) seconds later, SS transmits a downlink RLC data block on the newly assigned resources.
6. MS ignores the downlink block (because it has already returned to packet idle mode because T3190 expired).
7. SS transmits another IMMEDIATE ASSIGNMENT message on PCH, containing no starting time.
8. (T3190 * 0.8) seconds later, SS transmits a downlink RLC data block on the newly assigned resources.
9. MS responds by sending a PACKET DOWNLINK ACK/NACK.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to switch to PDCH0. (no starting time)
2	SS -> MS	RLC DATA BLOCK	3 blocks after the previous message, with valid RRBp field, on assigned PDCH0, addressed to MS.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block sent on PDCH0.
4	SS -> MS	RLC DATA BLOCKS	SS continues to transmit RLC data blocks according to allocation from step 1.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to PDCH1. (no starting time)
6	SS -> MS	RLC DATA BLOCK	(T3190 * 1.2) seconds after the previous message, with valid RRBp field, on PDCH1, addressed to MS.
7	SS		Verify the MS does not transmit on the PACCH of PDCH1.
8	SS->MS	IMMEDIATE ASSIGNMENT	Sent on assigned paging channel (no starting time). This is to verify the MS is in idle mode.
9	SS->MS	RLC DATA BLOCK	Sent on assigned PDCH, (T3190*0.8) seconds after step 8, with valid RRBp field, addressed to MS.
10	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previous RLC data block.
11		{Competition of downlink data transfer}	Macro

Specific Message Contents

IMMEDIATE ASSIGNMENT message in step 1:

Packet Channel Description - TN TIMING ADVANCE TBF STARTING TIME	<One timeslot assigned – PDCH0> Timing Advance Value as default <IE not present>
---	--

PACKET DOWNLINK ASSIGNMENT message in step 5:

TIMESLOT_ALLOCATION TBF STARTING TIME	<one timeslot assigned – PDCH1> <IE not present>
--	---

IMMEDIATE ASSIGNMENT message in step 8:

Packet Channel Description - TN TBF STARTING TIME	<One timeslot assigned – PDCH1> <IE not present>
---	---

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP S/P	00 – Response shall be sent by MS in N+13 frames. 1 – RRBp field is valid
-------------	--

42.5.4.2 Downlink Transfer/ T3190 Expiry / Resource reallocation / With TBF starting time

42.5.4.2.1 Void

42.5.4.2.2 Conformance Requirement

On receipt of a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message, and after the TBF starting time, if present, the mobile station shall switch to the assigned PDCHs. Upon switching to the new PDCHs the mobile station shall restart timer T3190.

When the mobile station receives an RLC/MAC block addressed to itself on any of the new assigned resources it shall restart timer T3190. If timer T3190 expires, the mobile station shall perform an abnormal release with return to CCCH or PCCCH (see subclause 8.7.1).

References

3GPP TS 04.60, subclause 8.1.2.4.

42.5.4.2.3 Test purpose

Verify that an MS switches to the newly assigned PDCH at the starting time given, and returns to packet idle mode when T3190 expires.

42.5.4.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a IMMEDIATE ASSIGNMENT message establish downlink TBF, containing no starting time.
2. SS transmits a downlink RLC data block.
3. MS responds by sending a PACKET DOWNLINK ACK/NACK.
4. SS transmits another PACKET DOWNLINK ASSIGNMENT message on PACCH, containing a starting time.
5. (T3190 * 1,2) seconds later, SS transmits a downlink RLC data block on the newly assigned resources.
6. MS ignores the downlink block (because it has already returned to packet idle mode because T3190 expired).

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to switch to PDCH0. (no starting time) 3 blocks after the previous message, with valid RRBp field, on assigned PDCH0, addressed to MS. MS acknowledges on PACCH the RLC data block sent on PDCH0. SS continues to transmit RLC data blocks according to allocation from step 1. Triggers the MS to switch to PDCH1 at the given starting time. (T3190 * 1.2)seconds after the starting time in the previous message, with valid RRBp field, on PDCH1, addressed to MS. Verify the MS does not transmit on the PACCH of PDCH1.
2	SS -> MS	RLC DATA BLOCK	
3	MS -> SS	PACKET DOWNLINK ACK/NACK	
4	SS -> MS	RLC DATA BLOCKS	
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	
6	SS -> MS	RLC DATA BLOCK	
7	SS		
8	SS->MS	IMMEDIATE ASSIGNMENT	Sent on assigned paging channel. This is to verify the MS is in packet idle mode. Sent on assigned PDCH, (T3190*0.8) seconds after step 6, with valid RRBp field, addressed to MS. MS acknowledges the previous RLC data block. Macro
9	SS->MS	RLC DATA BLOCK	
10	MS -> SS	PACKET DOWNLINK ACK/NACK	
11		{Competition of downlink data transfer}	

Specific Message Contents

IMMEDIATE ASSIGNMENT message in step 1:

Packet Channel Description - TN TIMING ADVANCE TBF STARTING TIME	<One timeslot assigned – PDCH0> Timing Advance Value as default <IE not present>
---	--

PACKET DOWNLINK ASSIGNMENT message in step 5:

TIMESLOT_ALLOCATION TBF STARTING TIME - Starting Frame Number Description IE	<one timeslot assigned – PDCH1> 1 - Relative frame number encoding: 000000101101 – k=45: first frame of block is N+199 or N+200
--	---

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP S/P	00 – Response shall be sent by MS in N+13 frames. 1 – RRBp field is valid
-------------	--

42.5.4.3 Downlink Transfer/ T3190 Expiry / Resource reallocation / Restart with valid RLC data block

42.5.4.3.1

Void

42.5.4.3.2

Conformance Requirement

On receipt of a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message, and after the TBF starting time, if present, the mobile station shall switch to the assigned PDCHs. Upon switching to the new PDCHs the mobile station shall restart timer T3190.

When the mobile station receives an RLC/MAC block addressed to itself on any of the new assigned resources it shall restart timer T3190. If timer T3190 expires, the mobile station shall perform an abnormal release with return to CCCH or PCCCH (see subclause 8.7.1).

References

3GPP TS 04.60, subclause 8.1.2.4.

42.5.4.3.3 Test purpose

Verify that an MS switches to the newly assigned PDCH at the starting time given, and returns to packet idle mode when T3190 expires.

42.5.4.3.4 Method of test

Initial Conditions

System Simulator:

GPRS supported

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a IMMEDIATE ASSIGNMENT message establish downlink TBF, containing no starting time.
2. SS transmits a downlink RLC data block.
3. MS responds by sending a PACKET DOWNLINK ACK/NACK.
4. SS transmits another PACKET DOWNLINK ASSIGNMENT message on PACCH, containing a starting time.
5. (T3190 * 0,8) seconds later, SS transmits a downlink RLC data block on the newly assigned resources.
6. MS responds by sending a PACKET DOWNLINK ACK/NACK.
7. (T3190 * 1,2) seconds later, SS transmits a downlink RLC data block (using the same resources).
8. MS ignores the downlink block (because it has already returned to packet idle mode because T3190 expired).

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to switch to PDCH0. (no starting time) 3 blocks after the previous message, with valid RRBp field, on assigned PDCH0, addressed to MS.
2	SS -> MS	RLC DATA BLOCK	
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block. SS continues to transmit RLC data blocks according to allocation from step 1.
4	SS -> MS	RLC DATA BLOCKS	
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to PDCH1 at the given starting time. (T3190 * 0.8) seconds after the starting time in the previous message, with valid RRBp field, on PDCH1, addressed to MS.
6	SS -> MS	RLC DATA BLOCK	
7	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block. (T3190 * 1.2) seconds after the message sent in step 6, with valid RRBp field, on PDCH1, addressed to MS.
8	SS -> MS	RLC DATA BLOCK	
9	SS		Verify the MS does not transmit on the PACCH of PDCH1.

Specific Message Contents

IMMEDIATE ASSIGNMENT message in step 1:

Packet Channel Description - TN TBF STARTING TIME	<One timeslot assigned – PDCH0> <IE not present>
---	---

PACKET DOWNLINK ASSIGNMENT message in step 5:

TIMESLOT_ALLOCATION TBF STARTING TIME - Starting Frame Number Description IE	<one timeslot assigned – different than previous – PDCH1> 1 – Relative frame number encoding: 000000101101 – k=45: first frame of block is N+199 or N+200
--	---

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP S/P	00 – Response shall be sent by MS in N+13 frames. 1 – RRBp field is valid
-------------	--

42.5.5 Downlink Transfer / Reestablishment

42.5.5.1 Downlink Transfer/ Reestablishment/ T3192 Expiry

42.5.5.1.1 Void

42.5.5.1.2 Conformance Requirement

After the network has initiated the release of a downlink TBF and the mobile station has received all the RLC blocks, the mobile station shall send the PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to '1', start timer T3192 and continue to monitor all assigned PDCHs.

If the network receives a PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to '1' and has new data to transmit for the mobile station, the network may establish a new downlink TBF for the mobile station by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message with the Control Ack bit set to '1' on PACCH.

If the mobile station, after sending the PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to '1', receives a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message with

the Control Ack bit set to '1' while timer T3192 is running, the mobile station shall stop timer T3192, consider the previous downlink TBF released and act upon the new assignment.

When timer T3192 expires the mobile station shall release the downlink TBF. If the mobile station is operating in half duplex mode and received an uplink assignment during the TBF release procedure, the mobile station shall then immediately act upon the uplink assignment. If there is no ongoing uplink TBF, the mobile station in packet transfer mode shall return to packet idle mode; the mobile station in dual transfer mode shall return to dedicated mode. The DRX mode procedures shall be applied, as specified in subclause 5.5.1.5.

References

3GPP TS 04.60, subclauses 8.1.2.4 and 9.3.2.6.

42.5.5.1.3 Test purpose

Verify that after a downlink TBF is released, MS returns to packet idle mode when T3192 expires.

42.5.5.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated and PDP context 2 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a IMMEDIATE ASSIGNMENT message to establish downlink TBF, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation.
3. SS transmits a downlink RLC data block, with valid RRBP field (polling), with Final Block indicator set to 1.
4. MS responds by sending a PACKET DOWNLINK ACK/NACK with Final Ack indicator set to 1 and starting T3192.
5. When T3192 expires, MS returns to packet idle mode.
6. SS transmits a downlink RLC data block (using previous resources).
7. MS ignores this block, because it has returned to packet idle mode.
8. SS transmits a IMMEDIATE ASSIGNMENT, followed by RLC data blocks for the downlink allocation.
9. MS responds with a PACKET DOWNLINK ACK/NACK.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS.
3	SS -> MS	RLC DATA BLOCK	With valid RRBP field, addressed to MS, with Final Block indication set to 1.
4	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks, with final ack set to 1. MS starts T3192
5	SS		Wait (T3192 * 0.7) seconds
6			Repeat steps 3 and 4.
7	SS		Wait (T3192 * 1.2) seconds.
8	SS -> MS	RLC DATA BLOCK	On previously assigned PDCH. With valid RRBP field, addressed to MS.
9	SS		Verify no response from MS on previously assigned PDCH.
10	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to switch to assigned PDCH (no starting time)
11	SS -> MS	RLC DATA BLOCK	With valid RRBP field, addressed to MS, on new resources assigned in step 10.
12	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data block.
13		{Completion of downlink RLC data block transfer}	Macro

Specific Message Contents

IMMEDIATE ASSIGNMENT message in step 1:

Packet Channel Description - TN TBF STARTING TIME	<One timeslot assigned > <IE not present>
---	--

IMMEDIATE ASSIGNMENT message in step 10:

Packet Channel Description - TN TBF STARTING TIME	<One timeslot assigned – different than previous > <IE not present>
---	--

GPRS Cell Options IE (throughout, on sys-infos):

T3192	010 – 1500 msec timeout value
-------	-------------------------------

DOWNLINK RLC DATA BLOCK in step 3:

RRBP S/P FBI	00 – Response shall be sent by MS in N+13 frames. 1 – RRBP field is valid 1
--------------------	---

PACKET DOWNLINK ACK/NACK in step 4:

Ack/Nack Description IE - FINAL_ACK_INDICATION	1
---	---

42.5.5.2 Downlink Transfer/ Reestablishment/ Packet Downlink Assignment

42.5.5.2.1 Void

42.5.5.2.2 Conformance Requirement

After the network has initiated the release of a downlink TBF and the mobile station has received all the RLC blocks, the mobile station shall send the PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to '1', start timer T3192 and continue to monitor all assigned PDCHs.

If the network receives a PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to '1' and has new data to transmit for the mobile station, the network may establish a new downlink TBF for the mobile station by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message with the Control Ack bit set to '1' on PACCH.

If the mobile station, after sending the PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to '1', receives a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message with the Control Ack bit set to '1' while timer T3192 is running, the mobile station shall stop timer T3192, consider the previous downlink TBF released and act upon the new assignment.

References

3GPP TS 04.60, subclause 8.1.2.4.

42.5.5.2.3 Test purpose

Verify that after a downlink TBF is released, MS acts on a PACKET DOWNLINK ASSIGNMENT message.

42.5.5.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated and PDP context 2 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a IMMEDIATE ASSIGNMENT message to establish downlink TBF, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation.
3. SS transmits a downlink RLC data block, with valid RRB field (polling), with Final Block indicator set to 1.
4. MS responds by sending a PACKET DOWNLINK ACK/NACK with Final Ack indicator set to 1.
5. SS transmits a PACKET DOWNLINK ASSIGNMENT, assigning a new PDCH. CONTROL_ACK is set to 1.
6. SS transmits a downlink RLC data block on newly assigned PDCH, with valid RRB field.
7. MS responds by sending a PACKET DOWNLINK ACK/NACK.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS.
3	SS -> MS	RLC DATA BLOCK	With valid RRBp field, addressed to MS, with Final Block indication set to 1.
4	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks, with final ack set to 1.
5	SS		Wait (T3192 * 0.8) seconds
6	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH. Triggers the MS to switch to a new PDCH. (no starting time) CONTROL_ACK is set to '1'.
7	SS -> MS	RLC DATA BLOCK	6 blocks after step 6, on PDCH assigned in step 6. With valid RRBp field, addressed to MS.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
9		{Completion of downlink RLC data block transfer}	Macro

Specific Message Contents

IMMEDIATE ASSIGNMENT message in step 1:

Packet Channel Description - TN TBF STARTING TIME	<One timeslot assigned > <IE not present>
---	--

PACKET DOWNLINK ASSIGNMENT message in step 6:

CONTROL_ACK TIMESLOT_ALLOCATION TBF STARTING TIME	1 <one timeslot assigned – different than previous assignment> <IE not present>
---	---

GPRS Cell Options IE (throughout, on sys-infos):

T3192	010 – 1500 msec timeout value
-------	-------------------------------

DOWNLINK RLC DATA BLOCK in step 3:

RRBP S/P FBI	00 – Response shall be sent by MS in N+13 frames. 1 – RRBp field is valid 1
--------------------	---

PACKET DOWNLINK ACK/NACK in step 4:

Ack/Nack Description IE - FINAL_ACK_INDICATION	1
---	---

42.5.5.3 Void

42.6 MAC Modes whilst in DTM

42.6.1 Exclusive allocation in single-slot configuration

42.6.1.1 Conformance requirements

The exclusive allocation shall be used in dual transfer mode during single slot operation with a half-rate PDCH.

When mobile station has received the uplink assignment and granted the right to transmit using exclusive allocation, the mobile station shall start timer T3184 and transmit an RLC/MAC block in every uplink radio block on the PDCHs assigned for the TBF. The timer T3184 shall be restarted every time the mobile station receives a PACKET UPLINK ACK/NACK message.

If the mobile station has an RR connection to the network on a half-rate TCH, the network may assign a downlink TBF using the other sub-channel of the same timeslot for a half-rate PDCH (see 3GPP TS 05.02). In this case, the downlink assignment message shall be encoded with a timeslot allocation including the timeslot number for the half-rate TCH and the half-rate PDCH and only that timeslot number. The mobile station shall interpret this allocation as an allocation of a half-rate PDCH.

If the mobile station has an RR connection to the network on a half-rate TCH, the network may assign an uplink TBF using the other sub-channel of the same timeslot for a half-rate PDCH (see 3GPP TS 05.02)

References

3GPP TS 04.60/44.060 sub-clauses 5.2.4, 8.1.1.3a.1, 11.2.7.1 & 11.2.29.1

42.6.1.2 Test purpose

To guarantee that the MS transmits an RLC/MAC block in every uplink radio block on the PDCH assigned for the single-slot TBF, ignoring the USF indicator in the downlink radio block corresponding to the uplink PDCH/H channel.

42.6.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, DTM supported, PCCCH present.

Mobile Station:

The MS is in the active state (U10) of a call.

The MS is in packet idle mode, with a P-TMSI allocated and PDP context 1 activated.

Specific PICS Statements

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PIXIT Statements

-

The MS is in a active CS call with an assigned TCH/H. The MS is triggered to initiate an uplink TBF and the MS is allocated the same timeslot for use in a uplink TBF. The MS interprets this as a command to use a combined TCH/H and exclusive mode PDCH/H in a single Timeslot. The SS verifies that the MS sends uplink RLC blocks in each block in the PDCH/H

Maximum Duration of Test

5 minutes

Expected Sequence

Step	Direction	Message	Comments
1	SS		MS in the active state (U10) of a call on Timeslot N, with Channel Type=TCH/H
2	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets of data.
3	MS->SS	DTM REQUEST	
4	SS->MS	PACKET ASSIGNMENT	SS sends this message such that it is received before Timer T3148 expiry.
5	MS<->SS	{ Uplink data transfer }	Macro – Test completes when 1000 octets of data is received.

Specific Message Contents

PACKET ASSIGNMENT (Step 4):

As default message contents except: RR Packet Uplink Assignment IE - TIMESLOT_ALLOCATION RR Packet Downlink Assignment IE	N Not included
--	-------------------

42.6.2 Void

42.6.3 Void

42.7 Packet assignment/ TA Value

42.7.1 Void

42.7.2 Packet Assignment / TA Value/TA not present in Packet uplink assignment sent On the PACCH

42.7.2.1 Conformance requirements

If TIMING_ADVANCE_VALUE field is not provided in the assignment message, the mobile station shall use its previous timing advance (either assigned in the previous IMMEDIATE ASSIGNMENT message received on AGCH or in the previous PACKET UPLINK ASSIGNMENT message received on PAGCH, or got through the continuous timing advance procedure).

Reference

3GPP TS 04.60 subclause 7.1.3.5.

42.7.2.2 Test purpose

To verify that the mobile station considers the previous timing advance contained in the PACKET UPLINK ASSIGNMENT allocating the single block allocation for sending the PACKET RESOURCE REQUEST message. When receiving the PACKET UPLINK ASSIGNMENT for the uplink TBF allocation without Timing advance, MS shall use the timing advance value given in the initial PACKET UPLINK ASSIGNMENT message.

42.7.2.3 Method of test

Initial conditions

System Simulator:

1cell, supporting GPRS.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 2 has been established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The MS initiates an uplink data transfer. The SS sends IMMEDIATE ASSIGNMENT with timing advance included with a single block allocation forcing two-phase access procedure. As response to the PACKET RESOURCE REQUEST message, the SS sends PACKET UPLINK ASSIGNMENT message on PACCH (not containing TA value). The MS shall complete the transfer of the uplink data.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 500 octets data.
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment, to order the MS to follow the two phase access procedure. Sent on AGCH. Including timing advance value.
4	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 3.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	uplink dynamic allocation, no starting time, no timing advance value. Sent on PACCH of the same PDCH assigned in step 3.
6	SS	{Uplink data transfer}	Macro. Completion of the data transfer procedure.

Specific message contents

None

42.7.3 Packet Assignment / TA Value/ PACKET POWER CONTROL/TIMING ADVANCE during contention resolution

42.7.3.1 Conformance requirements

For a R97 and R98 MS only:

During the contention resolution, the mobile station may receive a non-distribution RLC/MAC control message addressing the mobile station by TLLI or the TFI value associated with the uplink TBF, other than the PACKET UPLINK ACK/NACK message. The mobile station may act on the other non-distribution messages, using the procedure defined for that message when it is received in packet transfer mode during operation on an uplink TBF (see clause 8).

For a R99 or later MS only:

During the contention resolution, the mobile station shall not accept a PACKET MEASUREMENT ORDER message, a PACKET CELL CHANGE ORDER message and a PACKET POWER CONTROL/TIMING ADVANCE message addressing the mobile station with the TFI value associated with the uplink TBF.

Reference:

For a R97 and R98 MS only:

3GPP TS 04.60 subclause 7.1.2.3.

For a R99 or later MS only:

3GPP TS 04.60/44.060 subclause 7.1.2.3a.

42.7.3.2 Test purpose

For a R97 and R98 MS only:

To verify that during contention resolution the mobile station may accept the PACKET POWER CONTROL/TIMING ADVANCE addressed with TFI.

For a R99 or later MS only:

To verify that during contention resolution the mobile station does not accept PACKET POWER CONTROL/TIMING ADVANCE addressed with TFI.

42.7.3.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 2 has been established.

Specific PICS Statements

- Release of GPRS Supported (TSPC_MS_GPRS_RELEASE)

PIXIT Statements

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Test procedure

For a R97 and R98 MS only:

The MS is triggered to initiate uplink data transfer. The SS responds with IMMEDIATE ASSIGNMENT message that request one phase access and includes a Timing Advance Value field. The SS shall wait 2 seconds and then sends a PACKET POWER CONTROL/TIMING ADVANCE message with a valid timing advance information. The MS may accept this message even though the contention resolution was not solved. It is verified that the uplink transfer is successfully completed.

For a R99 or later MS only:

The MS is triggered to initiate uplink data transfer. The SS responds with IMMEDIATE ASSIGNMENT message that request one phase access and includes a Timing Advance Value field. The SS shall wait 2 seconds and then sends a PACKET POWER CONTROL/TIMING ADVANCE message with a valid timing advance information. The MS shall not consider this message since the contention resolution was not solved. It is verified that the uplink transfer is successfully completed.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 440 octets data.
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3	SS -> MS	IMMEDIATE ASSIGNMENT	Including Timing Advance Value. Indicating Packet UL Assignment struct. Sent on AGCH.
4	SS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigning USF to the MS. Sent at least 3 block periods from the assignment in step 3.
5	MS->SS	RLC DATA BLOCK	with TLLI included
6	SS -> MS	PACKET POWER CONTROL/TIMING ADVANCE	Include a valid Timing Advance Index. Sent on PACCH. Addressing MS with TFI assigned in step 3.
7A	SS		For R97/R98 terminals: SS waits 3 s. The MS may send access bursts on the PTCCH/U.
7B	SS		For R99 and later terminals: SS waits 3 s and verifies that the MS does not send access burst on the PTCCH/U.
8	SS->MS	PACKET UPLINK ACK/NACK	Including the TFI and TLLI of the MS, finishing the contention resolution. Assigning USF to the MS.
9	SS	{Uplink data transfer }	Macro. Completion of the macro procedure.

Note: Step 7A is performed for R97/R98 terminals. Step 7B is performed for R99 and later terminals.

Specific message contents

None.

42.7.4 Packet Assignment / TA Value/TAI present/ multislot capabilities

42.7.4.1 Conformance requirements

If the PDCH containing the mobile station's only assigned TAI value is removed, the mobile station shall, if it is performing an uplink TBF, perform an abnormal release with access retry.

Reference

3GPP TS 04.60 subclause 8.7.

42.7.4.2 Test purpose

To verify that If the PDCH containing the mobile station's only assigned TAI value is removed, the mobile station shall, if it is performing an uplink TBF, perform an abnormal release with access retry.

42.7.4.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. SI13, ACCESS_BURST_TYPE indicates 8 bits access.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 2 has been established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The MS is triggered to initiate uplink data packet transfer. The SS responds with IMMEDIATE ASSIGNMENT message for two phase access. The PACKET UPLINK ASSIGNMENT message contains a Timing Advance Index. The MS shall start to send data on the allocated uplink. The SS allows the MS to send the uplink data transfer. During the uplink data transfer, the SS shall verify that the access bursts are sent correctly (by the MS) in the PTCCH. Then PDCH containing the mobile station's only assigned TAI value is removed. Verify that MS perform an abnormal release with access retry.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of 2000 octets data.
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3a	SS -> MS	IMMEDIATE ASSIGNMENT	Single block allocation.
3b	MS->SS	PACKET RESOURCE REQUEST	
3c	SS -> MS	PACKET UPLINK ASSIGNMENT	Including Timing Advance Index = 0 (on TN0), Dynamic allocation struct.
4	MS->SS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PDCH. Assigning TN0 and TN1 USF assigned to MS, sent on TN0
5	MS->SS	UPLINK RLC DATA BLOCK	Received on PDCH0
6	SS->MS	PACKET UPLINK ACK/NACK	With correct TLLI (to complete the contention resolution).
7	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCKS	USFs assigned to MS on TN0 and TN1
8	MS->SS	UPLINK RLC DATA BLOCKS	Received on both PDCH0 and PDCH1
9	SS		Repeat steps 7 and 8 20 times.
10	SS->MS	PACKET PDCH RELEASE	Sent on PACCH of PDCH0 with TIMESLOTS_AVAILABLE indicating that only timeslot 1 is available
11	SS		Verify that MS did not continue on both PDCH0 and PDCH1 (max 6 blocks should be received)
12	MS->SS	CHANNEL REQUEST	MS re-initiates the packet access procedure

Verification

During the uplink data transfer (steps 3b to 9) the SS monitors the access burst on PTCCH which are located on slots with numbers FN, such that $(FN \bmod (8 * 52)) = 12$ for Timing Advance Index = 0 (3GPP TS 03.64 subclause 6.5.7.2 and 3GPP TS 05.02 table 6). The access burst contents shall be MESSAGE_TYPE = 011111 and CTRL_ACK = 11.

Specific message contents

None.

42.7.5 Packet Assignment / TA Value/ Update of TA using PACKET POWER CONTROL/TIMING ADVANCE

42.7.5.1 Conformance requirements

The timing advance could be updated using a PACKET POWER CONTROL /TIMING ADVANCE message.

Reference

3GPP TS 04.60 subclause 7.2.2.1.

42.7.5.2 Test purpose

To verify that the mobile station is able to use the updated value received in a PACKET POWER CONTROL/TIMING ADVANCE message.

42.7.5.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 2 has been established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The MS is triggered to initiate uplink data transfer. The SS responds with IMMEDIATE ASSIGNMENT message that request one phase access with Timing Advance Value field (=30bits). After contention resolution SS sends a PACKET POWER CONTROL/TIMING ADVANCE message with TA different from the assigned one. The SS verifies that MS is able to use the value received in PACKET POWER CONTROL/TIMING ADVANCE.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 440 octets data.
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3	SS -> MS	IMMEDIATE ASSIGNMENT	Timing Advance Value=30. Indicating Packet UL Assignment struct. Sent on AGCH.
4	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH with USF assigned to MS
5	MS->SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
6	SS->MS	PACKET UPLINK ACK/NACK	Sent on the PACCH with correct TLLI.
7	SS -> MS	PACKET POWER CONTROL/TIMING ADVANCE	Include a valid Timing Advance information. Sent on PACCH. Addressing MS with TFI assigned in step 3. With TA different from the previous value. (Change SS TA parameters)
8	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH with USF assigned to MS.
9	MS -> SS	UPLINK RLC DATA BLOCK	Sent on the PACCH with correct TLLI. Verify that MS uses the updated value sent in message of step 7.
10	SS<-> MS	Completion of macro {Uplink data transfer}	

Specific message contents

None.

42.7.6 Packet Uplink Assignment / Timing Advance / TA Index change

42.7.6.1 Conformance requirements

If a Timing Advance Index is included in the assignment message, the mobile station shall use the continuous update timing advance mechanism, using its allocation on PTCCH (see 3GPP TS 05.10). If MS receives an other value of TAI in a PACKET POWER CONTROL /TIMING ADVANCE message, it shall use it.

Reference

3GPP TS 04.60 subclause 7.1.2.5.

3GPP TS 03.64 subclause 6.5.7.2.

42.7.6.2 Test purpose

To verify that the mobile station is able to update Timing Advance Index when received as part of PACKET POWER CONTROL /TIMING ADVANCE

42.7.6.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. SI13, ACCESS_BURST_TYPE indicates 8 bits access.

Mobile Station:

The MS is GPRS attached and in packet idle mode. PDP context 2 has been established.

Specific PICS Statements

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PIXIT Statements

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Test procedure

The MS is triggered to initiate uplink data packet transfer. The SS responds with IMMEDIATE ASSIGNMENT message for two phase access. The PACKET UPLINK ASSIGNMENT message contains a Timing Advance Index. The MS shall start to send data on the allocated uplink. The SS allows the MS to send the uplink data transfer. During the Uplink data transfer, the SS shall verify that MS sends access bursts correctly in the PTCCH frames. The SS completes the contention resolution by including the TLLI of the MS in the PACKET UPLINK ACK/NACK message. Then SS sends PACKET POWER CONTROL /TIMING ADVANCE with new Timing advance index. Then SS verifies that MS uses correctly these values.

Maximum duration of the test

2 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of 2000 octets data.
2	MS -> SS	CHANNEL REQUEST	Received on RACH.
3a	SS -> MS	IMMEDIATE ASSIGNMENT	Single block allocation.
3b	MS->SS	PACKET RESOURCE REQUEST	
3c	SS -> MS	PACKET UPLINK ASSIGNMENT	Including Timing Advance Index = 0, Dynamic allocation struct.
4	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to MS.
5	MS->SS	UPLINK RLC DATA BLOCK	Received on the PDTCH
6	SS->MS	PACKET UPLINK ACK/NACK	USF assigned to MS. Including the TLLI of MS in the CONTENTION_RESOLUTION_TLLI field
7	MS->SS	UPLINK RLC DATA BLOCK	Received on the PDTCH
8			Repeat steps 6 and 7 20 times; excluding the TLLI for the contention resolution in step 6.
9	SS -> MS	PACKET POWER CONTROL/TIMING ADVANCE	Include a different Timing Advance Index (=2). Sent on PACCH 6 blocks before the MS PTCCCH channel. Addressing MS with TFI assigned in step 3.
10	SS->MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to MS. Sent after the 4 multiframes and 3 blocks of sending the message in step 9.
11		{Uplink data transfer}	Macro. Completion of data transfer. Verification, see below.

Verification

During the uplink data transfer in steps 3 to 8 the SS monitors the access burst on PTCCCH which are located on slots with numbers FN, such that $(FN \bmod (8*52)) = 12$ for Timing Advance Index = 0 (3GPP TS 03.64/6.5.7.2 and 3GPP TS 05.02 table 6). The access burst contents shall be MESSAGE_TYPE = 011111 and CTRL_ACK = 11.

During the uplink transfer in steps 9 to 11 the SS continues monitoring the access burst on PTCCCH such that $(FN \bmod (8*52)) = 64$ (TAI=2).

Specific message contents

None.

42.7.7 Void

42.8 Dynamic allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168

42.8.1 Dynamic Allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168/ Expiry

42.8.1.1 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message. Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request:

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure;
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

- If timer T3168 expires, the mobile station shall retransmit the Channel Request Description information element in the next PACKET DOWNLINK ACK/NA CK message unless it has been transmitted four times in which case the mobile station shall perform an abnormal release with random access. If the downlink TBF is released, including expiry of timer T3192, before expiry of timer T3168 the mobile station shall stop timer T3168 and perform an abnormal release with random access.
- Abnormal Release with Random Access: The mobile station shall abort all TBFs in progress and its associated resources, return to the CCCH or PCCCH and initiate establishment of a new uplink TBF as defined in subclause 7.1.

References

3GPP TS 04.60, subclauses 8.1.2.5 and 8.7.2.

42.8.1.2 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS makes the request 4 times. Verify that if uplink resources are not assigned within T3168, the MS performs abnormal release with random access.

42.8.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRB P field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NA CK messages in response to the polls.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NA CK message with a Channel Request Description field, and starts timer T3168.
6. When T3168 expires, MS repeats the Channel Request Description request. (This step is done 3 times, for a total of 4 Channel Request Descriptions.)
7. MS sends CHANNEL REQUEST again after returning to packet idle mode.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF. Sent on PCH
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Sent on assigned PDCH, addressed to MS, 1/10 with valid RRB P field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated until the next Channel Request Description is sent in step 8.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	MS requests additional resources (message contains Channel Request Description IE) - Sent more than T3168 seconds after previous request for additional resources - MS re-starts timer T3168
9			Steps 7 and 8 are repeated 2 more times such that a total of 4 Channel Request Descriptions are sent.
10	MS -> SS	CHANNEL REQUEST	Sent after T3168 seconds after step 8 is executed the last time.

SYSTEM INFORMATION TYPE 13 (throughout):

T3168	1 (1 second)
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42.8.2 Dynamic Allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168/ Stop with Packet Uplink Assignment

42.8.2.1 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message. Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request:

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure.
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall follow the procedure below. On reception of a complete uplink assignment the mobile station shall stop timer T3168.

References

3GPP TS 04.60, subclause 8.1.2.5.

42.8.2.2 Test purpose

Verify that during a downlink TBF, when the MS requests additional resources, that the MS stops timer T3168 when a PACKET UPLINK ASSIGNMENT is received.

42.8.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NA CK messages in response to the polls.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NA CK message with a Channel Request Description field, and starts timer T3168.
6. When T3168 expires, MS repeats the Channel Request Description request.
7. MS receives a PACKET UPLINK ASSIGNMENT message with a starting time such that more Channel Requests could be sent before the starting time.
8. MS does not repeat the Channel Request Description request.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF. Sent on PCH
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Sent on assigned PDCH, addressed to MS, 1/10 with valid RRB field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated until the next Channel Request Description is sent in step 8.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	MS requests additional resources (message contains Channel Request Description IE) - Sent after T3168seconds after previous request for additional resources - MS re-starts timer T3168
9	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent (.5*T3168) seconds after step 8. Allocates one uplink timeslot (same timeslot as the downlink assignment) With valid RRB field (polling). With starting time T3168*2 seconds from now.
10	MS -> SS	PACKET CONTROL ACK	Received according to RRB in step 9
11			Steps 2 and 3 are repeated until (1.5*T3168) seconds after step 9. Verify MS does not send additional Channel Request Description IE.

SYSTEM INFORMATION TYPE 13 (throughout):

T3168	1 (1 second)
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42.8.3 Dynamic Allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168/ Packet Access Reject/ With WAIT_INDICATION

42.8.3.1 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message. Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request:

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure;
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET ACCESS REJECT message containing a WAIT_INDICATION field in a Reject structure addressed to the mobile station, the mobile station shall stop timer T3168 and start timer T3172 with the indicated value (Wait Indication). The mobile station is not allowed to make a new attempt for packet access in the same cell until timer T3172 expires, but may attempt packet access in an other cell after successful cell reselection.

References

3GPP TS 04.60, subclause 8.1.2.5.

42.8.3.2 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS obeys a PACKET ACCESS REJECT message with WAIT_INDICATION by waiting the specified time before any possible subsequent attempt to request uplink resources.

42.8.3.3 Method of test

Initial Conditions

System Simulator:

1 cells, GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to each poll.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field.
6. MS receives a PACKET ACCESS REJECT message with WAIT_INDICATION.
7. MS acts on the PACKET ACCESS REJECT by waiting the indicated time.
8. MS shall not include the channel request description IE before T3172 expiry

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF. Sent on PCH
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Sent on assigned PDCH, addressed to MS, 1/10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 7.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE.
7	SS -> MS	PACKET ACCESS REJECT	- MS starts timer T3168 Sent (0.5 * T3168) seconds after step 6.
8	SS->MS	RLC DATA BLOCK	- MS starts T3172 With RRBP field valid
9	MS->SS	PACKET DOWNLINK ACK/NACK	Verify that Channel Request Description IE is not present
10			Repeat steps 8 and 9 until T3172 expiry.

PACKET ACCESS REJECT message in step 8:

TLLI	Addressing this MS
WAIT_INDICATION	2
WAIT_INDICATION_SIZE	0 – WAIT_INDICATION in units of seconds

42.8.4 Dynamic Allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168/ Packet Access Reject/ No WAIT_INDICATION

42.8.4.1 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message. Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request:

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure;
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET ACCESS REJECT message that contains a Reject structure addressed to the mobile station, the mobile station shall stop timer T3168 and indicate a packet access failure to upper layer.

References

3GPP TS 04.60, subclause 8.1.2.5.

42.8.4.2 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS obeys a PACKET ACCESS REJECT message without WAIT_INDICATION.

42.8.4.3 Method of test

Initial Conditions

System Simulator:

GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NAK messages in response to each poll.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NAK message with a Channel Request Description field.
6. MS receives a PACKET ACCESS REJECT message without WAIT_INDICATION.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF. Sent on PCH
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Sent on assigned PDCH, addressed to MS, 1/10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NAK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 7.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NAK	Message contains Channel Request Description IE. - MS starts timer T3168
7	SS -> MS	PACKET ACCESS REJECT	Sent (0.5*T3168) seconds after step 6 (no wait time).
8	SS -> MS	RLC DATA BLOCKS	Sent on assigned downlink PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
9	MS -> SS	PACKET DOWNLINK ACK/NAK	Verify MS respond to poll.

PACKET ACCESS REJECT message in step 7:

TLLI	Addressing this MS
WAIT_INDICATION	<not present>

42.8.5 Dynamic Allocation/ Downlink Transfer with Uplink TBF Establishment/T3168/Packet Access Reject/With Polling

42.8.5.1 Conformance Requirement

If the RRBP field is received as part of an RLC/MAC block containing an RLC/MAC control block containing any message except Packet Paging Request, Packet Access Reject, and Packet Queuing Notification, the mobile station shall transmit a PACKET CONTROL ACKNOWLEDGEMENT message in the uplink radio block specified. If the RRBP field is received as part of an RLC/MAC block containing an RLC/MAC control block containing a Packet Paging

Request, Packet Access Reject, or Packet Queuing Notification message, the mobile station shall ignore this RRBP field.

References

3GPP TS 04.60, subclause 10.4.5.

42.8.5.2 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS ignores a poll in a PACKET ACCESS REJECT message.

42.8.5.3 Method of test

Initial Conditions

System Simulator:

GPRS supported.

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Specific PICS Statements

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PIXIT Statements

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Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to each poll.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field.
6. MS receives a PACKET ACCESS REJECT message without WAIT_INDICATION and with RRBP field indicating polling.
7. MS ignores the poll request.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1a	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF. Sent on PCH
1b	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Sent on assigned PDCH, addressed to MS, 1/10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 8.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7	SS -> MS	PACKET ACCESS REJECT	Sent (0.5*T3168) seconds after step 6 (no wait time), with valid RRBP field (polling).
8			Verify that MS did not answer to poll in step 7

PACKET ACCESS REJECT message in step 8:

RRBP	00 – Response shall be sent by MS in N+13 frames.
S/P (MAC Header)	1 – RRBP field is valid
WAIT_INDICATION	<not present>

42.9 Extended Dynamic Allocation in Packet Transfer Mode

42.9.1 Default message contents

All default conditions, message contents and macros are defined in section 40, except for the messages as described in this subclause. These messages are applicable to the whole section 42.9, they shall be transmitted by the system simulator and are required to be received by the MS under test.

In this clause, decimal values are normally used. However, sometimes a hexadecimal value, indicated by an "Hex", or a binary value, indicated by a "Binary" is used.

PACKET DOWNLINK ASSIGNMENT message:

MESSAGE_TYPE	000010
PAGE_MODE	Normal Paging
{0 1<PERSISTENCE_LEVEL>}	0
-	10 (address is TLLI)
- TLLI	same value as received from MS since GPRS attached
MAC_MODE	0, message escape
RLC_MODE	Extended Dynamic Allocation
CONTROL_ACK	acknowledged mode
TIMESLOT_ALLOCATION	0
Packet Timing Advance	single slot arbitrarily chosen from valid values, default slot 2
- {0 1<TIMING_ADVANCE_VALUE>}	1 (presence of the timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0 1<TIMING_ADVANCE_INDEX>	0 (no timing advance index)
<TIMING_ADVANCE_TIMESLOT_NUMBER >}	
- {0 1<P0><BTS_PWR_CTRL_MODE>}	0
{0 1<Frequency Parameters>}	0 (Frequency Parameters not present)
{0 1<DOWNLINK_TFI_ASSIGNMENT>}	1 (assign downlink TFI)
- DOWNLINK_TFI_ASSIGNMENT	Arbitrarily chosen from valid values (default 3)
{0 1<Power Control Parameters>}	1 (Power Control Parameters present)
- ALPHA	0.5
- {0 1<GAMMA_TN0>}	Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN0)
- {0 1<GAMMA_TN1>}	Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN1)
- {0 1<GAMMA_TN2>}	Depending on the value in TIMESLOT_ALLOCATION (default 1 GAMMA_TN2)
- GAMMA_TN2	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm
- {0 1<GAMMA_TN3>}	For DCS 1 800, +6 dBm
- {0 1<GAMMA_TN4>}	For PCS 1 900, +6 dBm
- {0 1<GAMMA_TN5>}	Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN0)
- {0 1<GAMMA_TN6>}	Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN4)
- {0 1<GAMMA_TN7>}	Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN5)
{0 1<TBF_STARTING_TIME>}	Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN6)
- TBF_STARTING_TIME	Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN7)
{0 1<Measurement Mapping>}	1 (starting time present)
spare padding	0, absolute frame number encoding, indicating (current frame + 13 frames)
	0 (no measurement mapping)
	Spare Padding

PACKET TIMESLOT RECONFIGURE message (dynamic allocation without assigning a new TBF):

MESSAGE_TYPE	000111
PAGE_MODE	Normal Paging
0<GLOBAL_TFI>	0 The TFI value of the uplink TBF or downlink TBF which this message applies to (default 00101)
CHANNEL_CODING_COMMAND	0, message escape arbitrarily chosen from valid values (default CS-1)
Global Packet Timing Advance	
- {0 1<TIMING_ADVANCE_VALUE>}	1 (timing advance value present)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0 1<UPLINK_TIMING_ADVANCE_INDEX>	0 (no uplink timing advance index)
<UPLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>}	The MS stops the operation of the continuous timing advance procedure.
- {0 1<DOWNLINK_TIMING_ADVANCE_INDEX>	0 (no downlink timing advance index)
<DOWNLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>}	The MS stops the operation of the continuous timing advance procedure.
DOWNLINK_RLC_MODE	Same as in the Test PDP context used
CONTROL_ACK	0
{0 1<DOWNLINK_TFI_ASSIGNMENT>	0
{0 1<UPLINK_TFI_ASSIGNMENT>	0
DOWNLINK_TIMESLOT_ALLOCATION	arbitrarily chosen from valid values (default 00010000)
{0 1<Frequency Parameters>}	0 (use current parameters)
Dynamic allocation	0
- Extended Dynamic Allocation	1 (Extended Dynamic Allocation)
- {0 1<P0><PR_MODE>}	0
- USF_GRANULARITY	0, one block
- {0 1<RLC_DATA_BLOCKS_GRANTED>}	0 (no RLC_DATA_BLOCKS_GRANTED, open-ended TBF)
- {0 1<TBF_STARTING_TIME>}	1 (starting time)
- TBF_STARTING_TIME	1, relative frame number encoding indicating current frame + 104 by absolute encoding
-	1 (Timeslot Allocation with Power Control Parameters)
- ALPHA	one slot arbitrarily chosen and different from current slot, the following USF_TNx and GAMMA_TNx shall be corresponding to the chosen value, default timeslot 3.
- {0 1<USF_TN0><GAMMA_TN0>}	0.5
- {0 1<USF_TN1><GAMMA_TN1>}	0 (timeslot 0 not assigned)
- {0 1<USF_TN2><GAMMA_TN2>}	0 (timeslot 1 not assigned)
- {0 1<USF_TN3><GAMMA_TN3>}	0 (timeslot 2 not assigned)
- USF_TN3	1 (timeslot 3 assigned)
- GAMMA_TN3	arbitrarily chosen and different from current value, (default 4)
- {0 1<USF_TN4><GAMMA_TN4>}	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm
- USF_TN4	For DCS 1 800, +6 dBm
- GAMMA_TN4	For PCS 1 900, +6 dBm
- {0 1<USF_TN5><GAMMA_TN5>}	1 (timeslot 4 assigned)
- USF_TN5	Arbitrarily chosen (default 3) but it must be different than USF_TN3
- GAMMA_TN5	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm
	For DCS 1 800, +6 dBm
	For PCS 1 900, +6 dBm
	1 (timeslot 5 assigned), if the MS supports at least 3 timeslots uplink
	0 (timeslot 5 not assigned), if the MS supports only 2 timeslots uplink
	Only if timeslot 5 is assigned
	Arbitrarily chosen (default 2) but it must be different to USF_TN3 and USF_TN4
	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm
	For DCS 1 800, +6 dBm
	For PCS 1 900, +6 dBm

- {0 1<USF_TN6><GAMMA_TN6>}	1 (timeslot 6 assigned), if the MS supports at least 4 timeslots uplink 0 (timeslot 6 not assigned), if the MS supports less than 4 timeslots uplink
- USF_TN6	Only if timeslot 6 is assigned arbitrarily chosen (default 1) but it must be different to USF_TN3, USF_TN4 and USF_TN5
- GAMMA_TN6	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm For DCS 1 800, +6 dBm For PCS 1 900, +6 dBm
- {0 1<USF_TN7><GAMMA_TN7>}	0 (timeslot 7 not assigned)
spare padding	Spare Padding

For assignment of an uplink TBF while a downlink TBF has been established, the address information should be changed to DOWNLINK_TFI of Global_TFI. UPLINK_TFI_ASSIGNMENT is present.

PACKET UPLINK ASSIGNMENT message (two-phase dynamic allocation assigning a TBF):

MESSAGE_TYPE	001010
PAGE_MODE	Normal Paging
{0 1<PERSISTENCE_LEVEL>}	0 (no persistence level present)
- Address information	10 (TLLI)
- TLLI	The value received from the MS
CHANNEL_CODING_COMMAND	0, message escape
TLLI_BLOCK_CHANNEL_CODING	Arbitrarily chosen from the valid values (default CS-1)
Packet Timing Advance	'0'B, cs-1
- {0 1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0 1<TIMING_ADVANCE_INDEX>	0 (no timing advance index)
<TIMING_ADVANCE_TIMESLOT_NUMBER >}	
{0 1<Frequency Parameters>}	0 (Frequency Parameters not present)
Dynamic allocation	01
- Extended Dynamic Allocation	1 (Extended Dynamic allocation)
- {0 1<P0><PR_MODE>}	0
- USF_GRANULARITY	0, one block
- {0 1<UPLINK_TFI_ASSIGNMENT>}	1 (uplink TFI assignment)
- UPLINK_TFI_ASSIGNMENT	Arbitrarily chosen (default 00101)
- {0 1<RLC_DATA_BLOCKS_GRANTED>}	0 (no RLC_DATA_BLOCKS_GRANTED, open-ended TBF)
- {0 1<TBF_STARTING_TIME>}	0 (no starting time)
-	1 (Timeslot Allocation with Power Control Parameters)
	one slot arbitrarily chosen and the following USF_TNx and GAMMA_TNx shall be corresponding to the chosen value, default timeslot 2 assigned)
- ALPHA	0.5
- {0 1<USF_TN0><GAMMA_TN0>}	0 (timeslot 0 not assigned)
- {0 1<USF_TN1><GAMMA_TN1>}	0 (timeslot 1 not assigned)
- {0 1<USF_TN2><GAMMA_TN2>}	1 (timeslot 2 assigned)
- USF_TN2	Arbitrarily chosen (default 5)
- GAMMA_TN2	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm
	For DCS 1 800, +6 dBm
	For PCS 1 900, +6 dBm
- {0 1<USF_TN3><GAMMA_TN3>}	1 (timeslot 3 assigned)
- USF_TN3	Arbitrarily chosen (default 6) but it must be different than USF_TN2
- GAMMA_TN3	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm
	For DCS 1 800, +6 dBm
	For PCS 1 900, +6 dBm
- {0 1<USF_TN4><GAMMA_TN4>}	1 (timeslot 4 assigned), if the MS supports at least 3 timeslots uplink
	0 (timeslot 4 not assigned), if the MS supports only 2 timeslots uplink
- USF_TN4	Only if timeslot 4 is assigned
	Arbitrarily chosen (default 4) but it must be different to USF_TN2 and USF_TN3
- GAMMA_TN4	Only if timeslot 4 is assigned
	For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm
	For DCS 1 800, +6 dBm
	For PCS 1 900, +6 dBm
- {0 1<USF_TN5><GAMMA_TN5>}	1 (timeslot 5 assigned), if the MS supports at least 4 timeslots uplink
	0 (timeslot 5 not assigned), if the MS supports less than 4 timeslots uplink
- USF_TN5	Only if timeslot 5 is assigned
	Arbitrarily chosen (default 3) but it must be different to USF_TN2, USF_TN3 and USF_TN4

- GAMMA_TN5	Only if timeslot 5 is assigned For GSM 700, T-GSM 810, GSM 850 and GSM 900, +8 dBm For DCS 1 800, +6 dBm For PCS 1 900, +6 dBm
- {0 1<USF_TN6><GAMMA_TN6>}	0 (timeslot 6 not assigned)
- {0 1<USF_TN7><GAMMA_TN7>}	0 (timeslot 7 not assigned)
spare padding	Spare Padding

1. For re-assignment of an uplink TBF, the address information should be changed to UPLINK_TFI of Global_TFI. UPLINK_TFI_ASSIGNMENT is absent.
2. For assignment of an uplink TBF while a downlink TBF has been established, the address information should be changed to DOWNLINK_TFI of Global_TFI. UPLINK_TFI_ASSIGNMENT is present.

42.9.2 Extended Dynamic Allocation / Uplink Transfer

42.9.2.1 Extended Dynamic Allocation / Uplink Transfer / Normal

42.9.2.1.1 Extended Dynamic Allocation / Uplink Transfer / Normal / Successful

42.9.2.1.1.1 Conformance requirements

The mobile station shall monitor the downlink PDCHs corresponding to (i.e. with the same timeslot number as) its assigned uplink PDCHs starting with the lowest numbered PDCH, then the next lowest numbered PDCH, etc., up to the one corresponding to the highest numbered assigned uplink PDCH.

Whenever the mobile station detects an assigned USF value on an assigned PDCH, the mobile station shall transmit either a single RLC/MAC block or a sequence of four RLC/MAC blocks on the same PDCH and all higher numbered assigned PDCHs. The time relation between an uplink block, which the mobile station shall use for transmission, and the occurrence of the USF value is defined in 3GPP TS 45.002. The number of RLC/MAC blocks to transmit on each PDCH is controlled by the USF_GRANULARITY parameter characterising the uplink TBF. The mobile station shall ignore the USF on those higher numbered PDCHs during the block period where the assigned USF value is detected.

References

3GPP TS 44.060, subclauses 8.1.1.2.1

42.9.2.1.1.2 Test purposes

To verify that the MS:

When the MS receives the assigned USF of the lowest assigned PDCH, it transmits RLC/MAC data block on the same and all higher PDCHs in the next TDMA frame.

42.9.2.1.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

-

Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure. Up to 4 timeslots are assigned, according to the mobile multislot class (TS 5.02 Annex B.1).

1) The SS signals to the MS the assigned USF addressing the MS on the lowest assigned PDTCH. It is checked that the MS sends RLC/MAC data blocks in the next radio block period on all assigned PDTCH and that each data block contains the correct TFI without TLLI.

The SS acknowledges the received data and assigns the USF addressing the MS. The check is repeated.

The same procedure is going on until the MS completes the packet data transfer.

2) The SS signals to the MS the assigned USF addressing the MS on the highest assigned PDTCH. It is checked that the MS sends RLC/MAC data blocks in the next radio block period only on the highest assigned PDTCH and that each data block contains the correct TFI without TLLI.

The SS acknowledges the received data and assigns the USF addressing the MS. The check is repeated.

The same procedure is going on until the MS completes the packet data transfer.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 1500 octets, without starting time, Up to 4 timeslots are assigned according to MS multislot class (TS 5.02 Annex B.1) : <ul style="list-style-type: none"> - USF₁ on TN₁, - USF₂ on TN₂, - USF₃ on TN₃, - USF₄ on TN₄, Default PACKET UPLINK ASSIGNMENT message content for EDA defined in sub-clause 42.9.1 shall be used.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PACCH ₁ addressing the MS on 3 blocks from the last radio block containing the uplink assignment.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 2.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 2.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 2.
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 6.
8	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 6.
9	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 6.
10	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₁ on PACCH ₁ addressing the MS.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 10
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 10
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 10
14	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
15	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 14
16	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 14.
17	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 14.
18		{Completion of uplink RLC data block transfer in extended dynamic mode}	

19		{Uplink dynamic allocation two phase access}	n = 1500 octets, without starting time, Up to 4 timeslots are assigned according to MS multislot class (TS 5.02 Annex B.1): - USF ₁ on TN ₁ , - USF ₂ on TN ₂ , - USF ₃ on TN ₃ , - USF ₄ on TN ₄ , Default PACKET UPLINK ASSIGNMENT message content for EDA defined in sub-clause 42.9.1 shall be used.
20	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₁ is not addressing the MS
21	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 19. USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 20.
22	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 19. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 20.
23	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF _N on PACCH _N addressing the MS, where N is the number of assigned timeslots in step 19, sent on the same TDMA frame as step 20.
24	MS->SS		It is checked that no UPLINK RLC DATA BLOCK messages are received on the assigned PDTCH ₁ to PDTCH _{N-1} .
25	MS -> SS	UPLINK RLC DATA BLOCK	Received only on the assigned PDTCH _N .
26	SS -> MS	PACKET UPLINK ACK/NACK	USF on PACCH ₁ is not addressing the MS
27	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 19. USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 26.
28	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 19. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 26.
29	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF _N on PACCH _N addressing the MS, where N is the number of assigned timeslots in step 19, sent on the same TDMA frame as step 26.
30	MS->SS		It is checked that no UPLINK RLC DATA BLOCK messages are received on the assigned PDTCH ₁ to PDTCH _{N-1} .
31	MS -> SS	UPLINK RLC DATA BLOCK	Received only on the assigned PDTCH _N
32		{Completion of uplink RLC data block transfer in extended dynamic mode}	

Specific Message Contents

None.

42.9.2.1.2 Extended Dynamic Allocation / Uplink Transfer / Normal / USF_GRANULARITY = 4 blocks

42.9.2.1.2.1 Conformance requirements

The number of RLC/MAC blocks to transmit on each PDCH is controlled by the USF_GRANULARITY parameter characterising the uplink TBF. The mobile station shall ignore the USF on those higher numbered PDCHs during the block period where the assigned USF value is detected. In addition, if USF_GRANULARITY is set to four blocks allocation, it may ignore the USF on all other PDCHs during the first three block periods in which the mobile station has been granted permission to transmit. As specified in 3GPP TS 45.002, the USF corresponding to the last three blocks of a four blocks allocation shall be set to an unused value for each PDCH on which the mobile station has been granted permission to transmit.

References

3GPP TS 44.060, subclauses 8.1.1.2.1

42.9.2.1.2.2 Test purposes

To verify that the MS:

Manages the USF_GRANULARITY when an uplink TBF is established in Extended Dynamic allocation mode.

42.9.2.1.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context2 activated.

Specific PICS Statements

-

PIXIT Statements

-

Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure. 2 uplink timeslots are assigned.

- 1) The SS signals the assigned USF addressing the MS on the lowest assigned PDCH. It is checked that the MS sends RLC/MAC data blocks in the next 4 radio block periods on all assigned PDCHs and that each data block contains the correct TFI without TLLI.
- 2) The SS acknowledges the received data and assigns the USF addressing the MS. It is checked that the MS sends RLC/MAC data blocks in the next 4 radio block periods on all assigned PDCHs, except for the block allocated via the polling mechanism it is checked that the MS sends PACKET CONTROL ACKNOWLEDGEMENT.
- 3) In the last block period of the above procedure, the SS signals the assigned USF addressing the MS on the lowest assigned PDCH. It is checked that the MS sends RLC/MAC data blocks in the next 4 radio block periods on all assigned PDCH and that each data block contains the correct TFI without TLLI.
- 4) The same procedure is going on until the MS completes the packet data transfer.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 1500 octets, without starting time, 2 timeslots are assigned <ul style="list-style-type: none"> - USF₁ on PDCH₁, - USF₂ on PDCH₂, - USF_GRANULARITY = 1 (4 blocks) Default PACKET UPLINK ASSIGNMENT message content for EDA defined in sub-clause 42.9.1 shall be used.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF ₁ on block N ₁ of PACCH ₁ is addressing the MS (must be at least 3 blocks after the block containing the uplink assignment.)
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on block N ₁ of PACCH ₂ is NOT addressing the MS.
4	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +1 of PDTCH ₁
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +1 of PDTCH ₂
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +2 of PDTCH ₁
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +2 of PDTCH ₂
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +3 of PDTCH ₁
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +3 of PDTCH ₂
10	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +4 of PDTCH ₁
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +4 of PDTCH ₂
12	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge all received data blocks, on block N ₂ of PACCH ₁ With: S/P=1, RRBP = 0, and USF ₁
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +1 of PDTCH ₁
14	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +1 of PDTCH ₂
15	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +2 of PDTCH ₁
16	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +2 of PDTCH ₂
17	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on block N ₂ +3 of PACCH ₁
18	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +3 of PDTCH ₂
19	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF ₁ on block N ₂ + 4 of PACCH ₁ is addressing the MS.
20	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +4 of PDTCH ₁
21	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +4 of PDTCH ₂
22	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +5 of PDTCH ₁
23	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +5 of PDTCH ₂
24	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +6 of PDTCH ₁
25	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +6 of PDTCH ₂
26	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +7 of PDTCH ₁
27	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +7 of PDTCH ₂
28	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +8 of PDTCH ₁
29	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +8 of PDTCH ₂
30		{Completion of uplink RLC data block transfer in extended dynamic mode}	

Specific Message Contents

None

42.9.2.1.3 Extended Dynamic Allocation / Uplink Transfer / Normal / Allocation via polling mechanism

42.9.2.1.3.1 Conformance requirements

During the block period where an uplink radio block is allocated on a PDCH via the polling mechanism (see sub-clause 10.4.4), the mobile station shall monitor for the assigned USF on the downlink PDCHs corresponding to its assigned uplink PDCHs starting with the lowest numbered assigned PDCH up to the highest numbered PDCH which is feasible when taking into account the PDCH's allocated for transmission in the block period and the switching requirements of the mobile station multislot class (see 3GPP TS 45.002)

The mobile station shall either transmit the uplink radio block on the same timeslot as the block where the RRBP was received or, if an UPLINK_CONTROL_TIMESLOT is assigned to the mobile station, the mobile station shall transmit the uplink radio block on this UPLINK_CONTROL_TIMESLOT. After receiving an RLC/MAC block containing a valid RRBP field the mobile station need not monitor the USF in the associated downlink RLC/MAC block appearing just before the uplink block it shall transmit. However, when Extended Dynamic Allocation or Shifted USF operation is used, corresponding USF monitoring procedure shall apply as described in sub-clause 8.1.1.2.1 and sub-clause 8.1.1.2.4 respectively.

References

3GPP TS 44.060, subclauses 8.1.1.2.1, 10.4.5

42.9.2.1.3.2 Test purposes

To verify that the MS:

The MS sends the uplink control block allocated on the PDCH via the polling mechanism, while continuing to monitor the correct USFs.

42.9.2.1.3.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure. Up to 3 timeslots are assigned, according to the mobile multi-slot class (3GPP TS 45.002 Annex B.1).

1) The SS signals to the MS the assigned USF addressing the MS on the lowest assigned PDCH. It is checked that the MS sends the RLC/MAC data blocks in the next radio block period on all assigned PDCHs and that each data block contains the correct TFI without TLLI.

The SS acknowledges the received data with PACKET UPLINK ACK/NACK message with polling.

2) On the block before the transmission of PACKET CONTROL ACKNOWLEDGEMENT the SS signals to the MS the assigned USF addressing the MS on the lowest assigned PDCH.

On the same block as the transmission of PACKET CONTROL ACKNOWLEDGEMENT the SS signals to the MS the assigned USF addressing the MS on the lowest assigned PDCH.

It is checked that the MS sends the PACKET CONTROL ACKNOWLEDGEMENT on the lowest assigned PDCH and RLC/MAC data blocks on all other assigned PDCH and that each data block contains the correct TFI without TLLI.

It is checked that the MS sends RLC/MAC data blocks on the next radio block period on all assigned PDCH and that each data block contains the correct TFI without TLLI.

The SS acknowledges the received data with PACKET UPLINK ACK/NACK message with polling.

3) On the same block as the transmission of PACKET CONTROL ACKNOWLEDGEMENT the SS signals to the MS the assigned USF addressing the MS on the second assigned PDCH. It is checked that the MS sends PACKET

CONTROL ACKNOWLEDGEMENT on the lowest assigned PDCH and in the next block period the MS sends RLC/MAC data blocks on all assigned PDCHs except the first assigned PDCH and that each data block contains the correct TFI without TLLI.

The SS acknowledges the received data with PACKET UPLINK ACK/NACK message with polling.

4) This sequence is applicable only for MS multislot classes class 7, 11, 12, 20 to 23, 25 to 29, 33, 34, 38, 39.

On the same block as the transmission of PACKET CONTROL ACKNOWLEDGEMENT the SS signals to the MS the assigned USF addressing the MS on the third assigned PDCH. It is checked that the MS sends PACKET CONTROL ACKNOWLEDGEMENT on the lowest assigned PDCH and no RLC/MAC data blocks are sent.

5) Successfully complete the packet data transfer.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 1500 octets, without starting time, Up to 3 timeslots are assigned according to MS multi-slot class (TS 5.02 Annex B.1) : - USF ₁ on PDCH ₁ , - USF ₂ on PDCH ₂ , - USF ₃ on PDCH ₃ ,
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF ₁ on block N ₁ of PACCH ₁ is addressing the MS (must be at least 3 blocks after the block containing the uplink assignment.)
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +1 of PDTCH ₁
4	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₁ +1 of PDTCH ₂
5	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional, it is performed only if 3 timeslots have been allocated in step 1 Received on block N ₁ +1 of PDTCH ₃
6	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge all received data blocks, on block N ₂ of PACCH ₁ With: S/P=1, RRBP = 0 USF is NOT addressing the MS
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF ₁ on block N ₂ +2 of PACCH ₁ is addressing the MS
8	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF ₁ on block N ₂ +3 of PACCH ₁ is addressing the MS
9	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on block N ₂ +3 of PACCH ₁
10	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +3 of PDTCH ₂
11	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional, it is performed only if 3 timeslots have been allocated in step 1 Received on block N ₂ +3 of PDTCH ₃
12	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +4 of PDTCH ₁
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₂ +4 of PDTCH ₂
14	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional, it is performed only if 3 timeslots have been allocated in step 1 Received on block N ₂ +4 of PDTCH ₃
15	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge all received data blocks, on block N ₃ of PACCH ₁ With: S/P=1, RRBP = 0 USF is NOT addressing the MS
16	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on block N ₃ +3 of PACCH ₁ is NOT addressing the MS
17	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF ₂ on block N ₃ +3 of PACCH ₂ is addressing the MS
18	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on block N ₃ +3 of PACCH ₁
19	MS -> SS	UPLINK RLC DATA BLOCK	Received on block N ₃ +4 of PDTCH ₂
20	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional, it is performed only if 3 timeslots have been allocated in step 1 Received on block N ₃ +4 of PDTCH ₃
			The steps below are applicable only for the MS multi-slot class 7, 11, 12, 20 to 23, 25 to 29, 33, 34, 38, 39
21	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge all received data blocks, on block N ₄ of PACCH ₁ With: S/P=1, RRBP = 0 USF is NOT addressing the MS
22	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on block N ₄ +3 of PACCH ₁ is NOT addressing the MS
23	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on block N ₄ +3 of PACCH ₂ is NOT addressing the MS
24	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF ₃ on block N ₄ +3 of PACCH ₃ is addressing the MS
25	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on block N ₄ +3 of PACCH ₁
26			Verify that the MS does not transmit any RLC data block

27		{Completion of uplink RLC data block transfer in extended dynamic mode}	
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Specific Message Contents

None

42.9.2.1.4 Extended Dynamic Allocation / Uplink Transfer / Normal / PACCH operation in downlink

42.9.2.1.4.1 Conformance requirements

The mobile station shall attempt to decode every downlink RLC/MAC block on the lowest numbered timeslot in the PDCH allocation. Whenever the mobile station receives a RLC/MAC block containing a RLC/MAC control block, the mobile station shall attempt to interpret the message contained therein. If the message addresses the mobile station, the mobile station shall act on the message.

The network shall transmit all PACCH messages on the PDCH carried on the lowest numbered timeslot in the allocation. Additionally for the concurrent TBF case, the network may transmit PACCH messages on any of the common timeslots assigned to the downlink and uplink PDCH allocation.

Whenever the mobile station detects an assigned USF value on any assigned PDCH, the mobile station may transmit a PACCH block on the same PDCH in the next block period. The mobile station shall not transmit a RLC data block in any uplink radio block allocated via the polling mechanism.

References

3GPP TS 44.060, subclause 8.1.1.2.2.

42.9.2.1.4.2 Test purposes

To verify that a MS having an uplink GPRS TBF with Extended Dynamic Allocation MAC mode:

1. Decodes and interprets correctly all RLC/MAC blocks containing RLC/MAC control blocks sent by the network on the lowest numbered timeslot in the PDCH allocation when there is no concurrent downlink TBF.
2. Decodes and interprets correctly all RLC/MAC blocks containing RLC/MAC control blocks sent by the network on the lowest numbered timeslot in the PDCH allocation or on any of the common timeslots assigned to the downlink and uplink PDCH allocation when there is a concurrent downlink TBF.
3. Does not transmit a RLC data block in any uplink radio block allocated via the polling mechanism.

42.9.2.1.4.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate a packet uplink data transfer in RLC acknowledged mode and with Extended Dynamic Allocation MAC mode. The SS orders the MS to use two-phase access procedure.

1) At this point in time the MS has an uplink GPRS TBF established with Extended Dynamic Allocation MAC mode. It may receive RLC/MAC blocks containing RLC/MAC control blocks for the uplink TBF on the PDCH carried on the lowest numbered timeslot in the allocation.

To test that the MS decodes and interprets correctly all RLC/MAC blocks containing RLC/MAC control blocks sent by the network on the lowest numbered timeslot in the PDCH allocation when there is no concurrent downlink TBF the SS process as follow:

- The SS sends on the lowest numbered timeslot in the PDCH allocation a PACKET DOWNLINK ASSIGNMENT message to establish a concurrent downlink GPRS TBF with the Extended Dynamic Allocation MAC mode. The SS checks that the MS sends in response a PACKET CONTROL ACKNOWLEDGEMENT message on the lowest numbered timeslot in the PDCH allocation.

2) At this point in time the MS has an uplink TBF and a downlink GPRS TBF established with Extended Dynamic Allocation MAC mode. It may receive RLC/MAC blocks containing RLC/MAC control blocks for the uplink GPRS TBF on the PDCH carried on the lowest numbered timeslot in the uplink PDCH allocation or on any of the common timeslots assigned to the downlink and uplink PDCH allocation.

To test, in case there is a concurrent downlink GPRS TBF, that the MS decodes and interprets correctly all RLC/MAC blocks containing RLC/MAC control blocks sent by the network on the PDCH carried on the lowest numbered timeslot in the uplink PDCH allocation or on any of the common timeslots assigned to the downlink and uplink PDCH allocation, the SS process as follow:

- The MS is triggered to transfer 64+1 (window size +1) GPRS RLC data blocks without acknowledgement from SS in such a way that the window is stalled.
- The SS sends on the PDCH carried on the lowest numbered timeslot in the uplink PDCH allocation a PACKET UPLINK ACK/NACK message acknowledging only the oldest GPRS RLC data block. Then the MS is triggered to transfer one GPRS RLC data block. If the MS has correctly decoded the PACKET UPLINK ACK/NACK message, the BSN of the GPRS RLC data block shall be the next in sequence expected BSN.
- The SS sends on one of the common timeslots assigned to the downlink and uplink PDCH allocation a PACKET UPLINK ACK/NACK message acknowledging only the oldest GPRS RLC data block. Then the MS is triggered to transfer one GPRS RLC data block. If the MS has correctly decoded the PACKET UPLINK ACK/NACK message, the BSN of the GPRS RLC data block shall be the next in sequence expected BSN. The test is repeated with all PDCHs common for both reception and transmission.

3) To test that the MS does not transmit a GPRS RLC data block in any uplink radio block allocated via the polling mechanism the SS process as follow:

- The SS sends on one of the common timeslots assigned to the downlink and uplink PDCH allocation a PACKET UPLINK ACK/NACK message containing the TFI value assigned to the uplink TBF and a valid RRBP. On the block period preceding the block period where the polling response to the PACKET UPLINK ACK/NACK message should be received, the SS assigns an USF to the MS on the lowest numbered timeslot of the uplink PDCH allocation. The SS checks that during the block period where the polling response should be received, the MS responds to the polling with a PACKET CONTROL ACKNOWLEDGEMENT message sent on the PDCH where the polling request was sent and sends RLC data blocks on the other PDCHs of the uplink PDCH allocation. The test is repeated with all PDCHs common for both reception and transmission.

Then the data transfer is completed.

The following table gives the number of timeslots allocated for the uplink and downlink TBFs during the test according to the multislot class (see 45.002 annex B.1):

Multislot class	Number of PDCHs for the downlink TBF	Number of PDCHs for the uplink TBF
3	1	2
5	2	2
6	2	2
7	2	2
9	3	2
10	3	2
11	3	2
12	3	2
13	3	3
14	4	4
15	5	5
16	6	6
17	7	7
18	8	8
19	6	2
20	6	3
21	6	4
22	6	4
23	6	6
24	8	2
25	8	3
26	8	4
27	8	4
28	8	6
29	8	8
31	4	2
32	3	3
33	3	3
34	3	3
36	4	2
37	3	3
38	3	3
39	3	3
41	5	2
42	4	3
43	4	3
44	4	3
45	4	3

NOTE: The multislot class of the MS under test may impose that the highest PDCH of the uplink allocation is not a member of the downlink allocation. In this case the SS shall transmit a downlink RLC data block on a PDCH common to the downlink and uplink PDCH allocation at least every 5 seconds to avoid expiry of timer T3190.

Maximum Duration of Test

1 minute.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	Default PACKET UPLINK ASSIGNMENT message content for EDA defined in sub-clause 42.9.1 shall be used. n = 1500 octets, without starting time,
2	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Default PACKET DOWNLINK ASSIGNMENT message content for EDA defined in sub-clause 42.9.1 shall be used. Sent on the PACCH of the lowest PDCH of the uplink PDCH allocation. Including the Polling bit set and a valid RRBp field. Including the TFI assigned to the uplink TBF.
3	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the PACCH of the lowest PDCH of the uplink PDCH allocation.
4	SS		The SS verifies that the MS sends the PACKET CONTROL ACKNOWLEDGEMENT message, on the uplink radio block specified by the RRBp of the lowest PDCH of the uplink PDCH allocation.
5	SS -> MS	DOWNLINK GPRS RLC DATA BLOCK	Sent on the highest PDCH of the uplink PDCH allocation. Including the USF assigned to the MS on the highest PDCH of the uplink PDCH allocation. Including an invalid RRBp.
6	MS -> SS	UPLINK GPRS RLC DATA BLOCK	Received on the highest PDCH of the uplink PDCH allocation. SI=0
7			Repeat steps 5 and 6 for BSN=1 to 63. SS doesn't acknowledge any of the GPRS RLC data blocks with BSN from 0 to 63 (see note below).
8	SS -> MS	DOWNLINK GPRS RLC DATA BLOCK	Sent on the highest PDCH of the uplink PDCH allocation. Including the USF assigned to the MS on the highest PDCH of the uplink PDCH allocation. Including an invalid RRBp.
9	MS -> SS	UPLINK GPRS RLC DATA BLOCK	Received on the highest PDCH of the uplink PDCH allocation. SI=1
10	SS->MS	PACKET UPLINK ACK/NACK	SS acknowledges the oldest GPRS RLC data block. Sent on the PACCH of the lowest PDCH of the uplink PDCH allocation. Including the TFI assigned to the uplink TBF. Including an USF not assigned to the MS on this PDCH. Wait for 6 blocks with no assigned USF
11	SS -> MS	DOWNLINK GPRS RLC DATA BLOCK	Sent on the highest PDCH of the uplink PDCH allocation. Including the USF assigned to the MS on the highest PDCH of the uplink PDCH allocation. Including an invalid RRBp.
12	MS -> SS	UPLINK GPRS RLC DATA BLOCK	Received on the highest PDCH of the uplink PDCH allocation.
13	SS		The steps 11 and 12 are repeated k times <=8 until V(R) has been incremented by one (i.e. the MS has correctly understood the PACKET UPLINK ACK/NACK).
14	SS -> MS	DOWNLINK GPRS RLC DATA BLOCK	Sent on the highest PDCH of the uplink PDCH allocation. Including the USF assigned to the MS on the highest PDCH of the uplink PDCH allocation. Including an invalid RRBp.
15	MS -> SS	UPLINK GPRS RLC DATA BLOCK	Received on the highest PDCH of the uplink PDCH allocation.
16			The steps 14 and 15 are repeated until a RLC DATA BLOCK with SI=1 is received (see note below).

17	SS->MS	PACKET UPLINK ACK/NACK	SS acknowledges the oldest GPRS RLC data block. Sent on a PDCH common to the downlink and uplink PDCH allocation. Including the TFI of the uplink TBF. Including an USF not assigned to the MS on this PDCH. Wait for 6 blocks with no assigned USF
18	SS -> MS	DOWNLINK GPRS RLC DATA BLOCK	Sent on the highest PDCH of the uplink PDCH allocation. Including the USF assigned to the MS on this PDCH. Including an invalid RRBP.
19	MS -> SS	UPLINK GPRS RLC DATA BLOCK	Received on the highest PDCH of the uplink PDCH allocation.
20	SS		The steps 18 and 19 are repeated k times $k \leq 8$ until V(R) has been incremented by one (i.e. the MS has correctly understood the PACKET UPLINK ACK/NACK).
21	SS -> MS	DOWNLINK GPRS RLC DATA BLOCK	Sent on the highest PDCH of the uplink PDCH allocation. Including the USF assigned to the MS on the highest PDCH of the uplink PDCH allocation. Including an invalid RRBP.
22	MS -> SS	UPLINK GPRS RLC DATA BLOCK	Received on the highest PDCH of the uplink PDCH allocation.
23			The steps 21 and 22 are repeated until a RLC DATA BLOCK with SI=1 is received (see note below).
24			The steps 17, 18, 19, 20, 21, 22 and 23 are repeated for each PDCH common to the downlink and uplink PDCH allocation.
25	SS->MS	PACKET UPLINK ACK/NACK	SS acknowledges all RLC data block. Sent on a PDCH common to the downlink and uplink PDCH allocation. Including the Polling bit set and a valid RRBP field Including the TFI assigned to the uplink TBF.
26	SS -> MS	DOWNLINK GPRS RLC DATA BLOCK	Sent on the lowest PDCH of the uplink PDCH allocation on the block period preceding the response to the polling requested in step 25. Including the USF assigned to the MS on this PDCH.
27	MS -> SS	UPLINK GPRS RLC/MAC BLOCK	Received during the block period where the polling response should be sent. An UPLINK RLC CONTROL BLOCK should be received on the PDCH where the MS is polled or an UPLINK RLC DATA BLOCK should be received on the other PDCHs.
28			The step 27 is repeated a number of times equal to the number of PDCHs of the uplink PDCH allocation to get all RLC/MAC BLOCK sent by the MS.
29	SS		Verify that the MS did not transmit a RLC data block on the reserved uplink radio block specified by the RRBP on the PDCH where it has been polled. A PACKET CONTROL ACKNOWLEDGEMENT shall be transmitted instead. Verify that the MS has transmitted RLC data blocks on the other PDCHs.
30			The steps 25, 26, 27, 28 and 29 are repeated for each PDCH common to the downlink and uplink PDCH allocation.
31	SS -> MS	DOWNLINK GPRS RLC DATA BLOCK	Sent on a PDCH common to the downlink and uplink PDCH allocation. Including a valid RRBP and FBI = 1. Including an USF not assigned to the MS on this PDCH.
32	MS -> SS	PACKET DOWNLINK ACK/NACK	
33		{Completion of uplink RLC data block transfer in extended dynamic mode}	

NOTE: If the multislot class of the MS under test imposes that the highest PDCH of the uplink allocation is not a member of the downlink allocation, the SS shall transmit a downlink RLC data block on a PDCH common to the downlink and uplink PDCH allocation at least every 5 seconds to avoid expiry of timer T3190. The RLC data block shall be transmitted including an invalid RRBP and an USF not assigned to the MS on this PDCH.

42.9.2.1.5 Extended Dynamic Allocation / Uplink Transfer / Normal / Polling for PDAN

42.9.2.1.5.1 Conformance requirements

In case of simultaneous uplink and downlink TBFs and extended dynamic allocation, the network may apply polling in downlink RLC data blocks only when sent on a PDCH common for both reception and transmission. A mobile station operating with extended dynamic allocation need to respond to polling in downlink RLC data blocks only when received on a PDCH common for both reception and transmission.

References

3GPP TS 44.060, subclause 8.1.2.2.

42.9.2.1.5.2 Test purposes

To verify, in case the MS has a simultaneous uplink and downlink GPRS TBF with Extended Dynamic Allocation MAC mode, that the MS responds to polling when it is polled on blocks belonging to PDCHs common for both reception and transmission.

42.9.2.1.5.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate a packet uplink data transfer in RLC acknowledged mode and with Extended Dynamic Allocation MAC mode. The SS orders the MS to use two-phase access procedure. Then a concurrent downlink GPRS TBF is established. The PDCH allocation for the downlink and uplink TBFs is chosen to maximise the number of PDCHs common for both reception and transmission.

The SS sends on a PDCH common for both reception and transmission a GPRS RLC data block with polling and checks that the MS responds with a PACKET DOWNLINK ACK/NACK acknowledging the GPRS RLC data block in the uplink radio block specified by RRBP. The test is repeated on all PDCHs common for both reception and transmission.

The following table gives the number of timeslots allocated for the uplink and downlink TBFs during the test according to the multislot class (see 45.002 annex B.1):

Multislot class	Number of PDCHs for the downlink TBF	Number of PDCHs for the uplink TBF
3	1	2
5	2	2
6	2	2
7	2	2
9	3	2
10	3	2
11	3	2
12	3	2
13	3	3
14	4	4
15	5	5
16	6	6
17	7	7
18	8	8
19	6	2
20	6	3
21	6	4
22	6	4
23	6	6
24	8	2
25	8	3
26	8	4
27	8	4
28	8	6
29	8	8
31	4	2
32	3	3
33	3	3
34	3	3
36	4	2
37	3	3
38	3	3
39	3	3
41	5	2
42	4	3
43	4	3
44	4	3
45	4	3

Maximum Duration of Test

1 minute.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	Default PACKET UPLINK ASSIGNMENT message content for EDA defined in sub-clause 42.9.1 shall be used. n = 20 octets, without starting time
2	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Default PACKET DOWNLINK ASSIGNMENT message content for EDA defined in sub-clause 42.9.1 shall be used. Sent on the PACCH of the lowest PDCH of the uplink PDCH allocation. Including the polling bit set and a valid RRBp field. Including the TFI assigned to the uplink TBF.
3	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the PACCH of the lowest PDCH of the uplink PDCH allocation.
4	SS -> MS	DOWNLINK GPRS RLC DATA BLOCK	Sent on a PDCH common to the downlink and uplink PDCH allocation. Including the Polling bit set and a valid RRBp field. Including the TFI assigned to the uplink TBF.
5	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the same PDCH and on the uplink radio block specified by the RRBp.
6	SS		The SS verifies that the MS sends a PACKET DOWNLINK ACK/NACK acknowledging the GPRS RLC data block.
7			The steps 4, 5 and 6 are repeated with each PDCH common to the downlink and uplink PDCH allocation.
8		{Completion of uplink RLC data block transfer in extended dynamic mode}	

42.9.2.2 Extended Dynamic Allocation / Uplink Transfer / Configuration Change

42.9.2.2.1 Extended Dynamic Allocation / Uplink Transfer / configuration change / Changes in the Allocation from Dynamic to Extended Dynamic.

42.9.2.2.1.1 Conformance requirements

When the mobile station receives an uplink assignment (e.g. PACKET UPLINK ASSIGNMENT, MULTIPLE TBF UPLINK ASSIGNMENT, PACKET TIMESLOT RECONFIGURE or MULTIPLE TBF TIMESLOT RECONFIGURE) that does not contain a TBF starting time, the mobile station shall begin monitoring the assigned PDCHs for the assigned USF value for each assigned PDCH within the reaction time defined in 3GPP TS 45.010. If a TBF starting time information element is present and no uplink TBFs are in progress, but one or more downlink TBFs are in progress, the mobile station shall wait until the starting time before beginning to monitor the USFs and using the newly assigned uplink TBF parameters. While waiting for the starting time, the mobile station shall monitor the assigned PDCHs. If a TBF starting time information element is present and one or more uplink TBFs are already in progress, the mobile station shall continue to use the assigned parameters of the ongoing uplink TBFs until the TDMA frame number indicated by the TBF starting time occurs, at which time the mobile station shall immediately begin to use the newly assigned uplink TBF parameters. The mobile station shall continue to use the newly assigned parameters of each uplink TBF until the TBF is either released or reconfigured. If while waiting for the frame number indicated by the TBF starting time the mobile station receives another uplink assignment, the mobile station shall act upon the most recently received uplink assignment and shall ignore the previous uplink assignment.

References

3GPP TS 44.060, subclauses 8.1.1.1

42.9.2.2.1.2 Test purposes

To verify that the MS while on Uplink TBF in Dynamic Allocation mode receives a PACKET UPLINK ASSIGNMENT giving an extended Dynamic Allocation mode continues the TBF in Extended Dynamic Allocation.

42.9.2.2.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default settings.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure. In PACKET UPLINK ASSIGNMENT SS assigns a dynamic allocation TBF. Up to 2 timeslots are assigned, according to the mobile multislot class (TS 5.02 Annex B.1).

After receiving some data SS reconfigures the TBF to an Extended Dynamic allocation TBF giving up to 4 timeslots according to the mobile multislot class (TS 5.02 Annex B.1), giving PACKET UPLINK ASSIGNMENT. SS checks that MS has started using the TBF in Extended Dynamic allocation mode by giving the USFs only on the lower numbered PDCH and receiving the data on all the higher numbered PDCH.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	N = 1500 octets, without starting time, Assigning the TBF in dynamic mode. <u>Up to 2 timeslots are assigned according to MS multislot class (TS 05.02 Annex B.1):</u> - USF ₁ on TN ₁ , - USF ₂ on TN ₂ ,
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PACCH ₁ addressing the MS sent on 3 blocks from the last radio block containing the uplink assignment.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 2 timeslots have been assigned in step 1. Assigned USF ₂ on PACCH ₂ addressing the MS sent on the same TDMA frame as step 2.
4	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
5	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 2 timeslots have been assigned in step 1. Received on the assigned PDTCH ₂ on the same TDMA frame as in step 4.
6	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₁ on PACCH ₁ addressing the MS.
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 2 timeslots have been assigned in step 1. USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 6
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
9			This step is optional; it is performed only if 2 timeslots have been assigned in step 1. Check that the MS does not send the data on the PDTCH ₂ as the USF sent on the PACCH ₂ in step 7 is not addressing to the MS.
10	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH ₁ addressing the MS, without starting time, assigning extended dynamic allocation. <u>Up to 4 timeslots are assigned according to MS multislot class (TS 05.02 Annex B.1):</u> - USF ₁ on TN ₁ , - USF ₂ on TN ₂ , - USF ₃ on TN ₃ , - USF ₄ on TN ₄ ,
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PACCH ₁ addressing the MS on 3 blocks from the last radio block containing the uplink assignment in step 10.
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 11.
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 10. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 11.
14	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 10. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 11.
15	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
16	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 15.
17	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 10. Received on the assigned PDTCH ₃ on the same TDMA frame as step 15.
18	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 10. Received on the assigned PDTCH ₄ on the same TDMA frame as step 15.

19	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₁ on PACCH ₁ addressing the MS.
20	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 19
21	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 10. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 19
22	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 10. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 19
23	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
24	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 23
25	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 10. Received on the assigned PDTCH ₃ on the same TDMA frame as step 23.
26	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 10. Received on the assigned PDTCH ₄ on the same TDMA frame as step 23.
27		{Completion of uplink RLC data block transfer in extended dynamic mode}	

Specific Message Contents

None.

42.9.2.2.2 Extended Dynamic Allocation / Uplink Transfer / configuration change / Changes in the Allocation from Extended Dynamic to Dynamic.

42.9.2.2.2.1 Conformance requirements

When the mobile station receives an uplink assignment (e.g. PACKET UPLINK ASSIGNMENT, MULTIPLE TBF UPLINK ASSIGNMENT, PACKET TIMESLOT RECONFIGURE or MULTIPLE TBF TIMESLOT RECONFIGURE) that does not contain a TBF starting time, the mobile station shall begin monitoring the assigned PDCHs for the assigned USF value for each assigned PDCH within the reaction time defined in 3GPP TS 45.010. If a TBF starting time information element is present and no uplink TBFs are in progress, but one or more downlink TBFs are in progress, the mobile station shall wait until the starting time before beginning to monitor the USFs and using the newly assigned uplink TBF parameters. While waiting for the starting time, the mobile station shall monitor the assigned PDCHs. If a TBF starting time information element is present and one or more uplink TBFs are already in progress, the mobile station shall continue to use the assigned parameters of the ongoing uplink TBFs until the TDMA frame number indicated by the TBF starting time occurs, at which time the mobile station shall immediately begin to use the newly assigned uplink TBF parameters. The mobile station shall continue to use the newly assigned parameters of each uplink TBF until the TBF is either released or reconfigured. If while waiting for the frame number indicated by the TBF starting time the mobile station receives another uplink assignment, the mobile station shall act upon the most recently received uplink assignment and shall ignore the previous uplink assignment.

References

3GPP TS 44.060, subclauses 8.1.1.1

42.9.2.2.2.2 Test purposes

To verify that the MS while on Uplink TBF in Extended Dynamic Allocation mode receives a PACKET UPLINK ASSIGNMENT giving a Dynamic Allocation mode continues the TBF in Dynamic Allocation.

42.9.2.2.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default settings.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure. In PACKET UPLINK ASSIGNMENT SS assigns an extended dynamic allocation TBF. Up to 4 timeslots are assigned, according to the mobile multislot class (TS 5.02 Annex B.1).

After receiving some data SS reconfigures the TBF to a Dynamic Allocation giving up to 2 timeslots according to the mobile multislot class (TS 5.02 Annex B.1), by giving a PACKET UPLINK ASSIGNMENT. SS checks that MS has started using the TBF now in dynamic allocation mode by checking that the MS is sending data only on the timeslot where the USF is assigned.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	N = 1500 octets, without starting time, Assigning the TBF in extended dynamic mode. <u>Up to 4 timeslots are assigned according to MS multislot class (TS 05.02 Annex B.1) :</u> <ul style="list-style-type: none"> - USF₁ on TN₁, - USF₂ on TN₂, - USF₃ on TN₃, - USF₄ on TN₄,
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PACCH ₁ addressing the MS. Sent on third block from the last radio block containing the uplink assignment in step 1.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 2.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 2.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 2.
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 6.
8	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 6.
9	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 6.
10	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₁ on PACCH ₁ addressing the MS.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 10
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 10
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 10
14	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
15	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 14
16	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 14.
17	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 14.
18		PACKET UPLINK ASSIGNMENT	Reconfigures the TBF. <u>Up to 2 timeslots are assigned according to MS multislot class (TS 05.02 Annex B.1) :</u> <ul style="list-style-type: none"> - USF₁ on TN₁, - USF₂ on TN₂,

19	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PACCH ₁ addressing the MS. Sent on third block from the last radio block containing the uplink assignment.
20	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 2 timeslots have been assigned in step 18. Assigned USF ₂ on PACCH ₂ addressing the MS sent on the same TDMA frame as step 19.
21	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
22	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 2 timeslots have been assigned in step 18. Received on the assigned PDTCH ₂ on the same TDMA frame as step 21.
23	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₁ on PACCH ₁ addressing the MS.
24	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 2 timeslots have been assigned in step 18. USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 23
25	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
26			This step is optional; it is performed only if 2 timeslots have been assigned in step 18. Check that the MS does not send the data on the PDTCH ₂ as the USF sent on the PACCH ₂ , step 24 is not addressing to the MS.
27		{Completion of uplink RLC data block transfer}	

Specific Message Contents

None.

42.9.2.2.3 Extended Dynamic Allocation / Uplink Transfer / configuration change / Reduction in number of uplink slots using PACKET UPLINK ASSIGNMENT.

42.9.2.2.3.1 Conformance requirements

When the mobile station receives an uplink assignment (e.g. PACKET UPLINK ASSIGNMENT, MULTIPLE TBF UPLINK ASSIGNMENT, PACKET TIMESLOT RECONFIGURE or MULTIPLE TBF TIMESLOT RECONFIGURE) that does not contain a TBF starting time, the mobile station shall begin monitoring the assigned PDCHs for the assigned USF value for each assigned PDCH within the reaction time defined in 3GPP TS 45.010. If a TBF starting time information element is present and no uplink TBFs are in progress, but one or more downlink TBFs are in progress, the mobile station shall wait until the starting time before beginning to monitor the USFs and using the newly assigned uplink TBF parameters. While waiting for the starting time, the mobile station shall monitor the assigned PDCHs. If a TBF starting time information element is present and one or more uplink TBFs are already in progress, the mobile station shall continue to use the assigned parameters of the ongoing uplink TBFs until the TDMA frame number indicated by the TBF starting time occurs, at which time the mobile station shall immediately begin to use the newly assigned uplink TBF parameters. The mobile station shall continue to use the newly assigned parameters of each uplink TBF until the TBF is either released or reconfigured. If while waiting for the frame number indicated by the TBF starting time the mobile station receives another uplink assignment, the mobile station shall act upon the most recently received uplink assignment and shall ignore the previous uplink assignment.

References

3GPP TS 44.060, subclauses 8.1.1.1

42.9.2.2.3.2 Test purposes

To verify that the MS:

While in extended Dynamic mode TBF, if the number of slots allocated is reduced by using PACKET UPLINK ASSIGNMENT, then MS adheres to the new allocation properly.

42.9.2.2.3.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure. In PACKET UPLINK ASSIGNMENT SS assigns a extended dynamic allocation TBF. Up to 4 timeslots are assigned, according to the mobile multislot class (TS 5.02 Annex B.1).

After receiving some data, SS reconfigures the TBF to a have one slot less then given earlier, giving PACKET UPLINK ASSIGNMENT. SS checks that MS using the new timeslot configuration properly.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	N = 1500 octets, without starting time, Assigning the TBF in extended dynamic mode. <u>Up to 4 timeslots are assigned according to MS multislot class (TS 05.02 Annex B.1) :</u> <ul style="list-style-type: none"> - USF₁ on TN₁, - USF₂ on TN₂, - USF₃ on TN₃, - USF₄ on TN₄,
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PACCH ₁ addressing the MS. Sent on third block from the last radio block containing the uplink assignment.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 2.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 2.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 2.
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 6.
8	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 6.
9	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 6.
10	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₁ on PACCH ₁ addressing the MS.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 10
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 10
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 10
14	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
15	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 14
16	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 14.
17	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 14.
18	SS -> MS	PACKET UPLINK ASSIGNMENT	SS reconfigures the TBF. Assignment assigns a starting time of 104 frames. This assignment reduces the number of slots by one as compared to the earlier allocation given in step 1. the highest numbered PDCH assigned in step 1 is removed from the allocation.
19	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PACCH ₁ addressing the MS. Sent on 3 blocks before the starting time given in step 18.

20	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 19.
21	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 19.
22	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 19.
23	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
24	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 23.
25	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 23.
26	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 23.
27	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF addressing the MS. Sent on the highest numbered PDCH assigned in step 1. Send on next block of the one specified by the starting time in step 18. USF on the other lowered numbered PDCHs are not addressing the MS.
28			SS checks that the MS does not send any uplink data block in next block of the message sent in step 27.
29	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₁ is addressing the MS.
30	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if at least 2 timeslots have been assigned in step 18. USF on PACCH ₂ is not addressing the MS. Sent on the same TDMA frame as step 29.
31	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if at least 3 timeslots have been assigned in step 18. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 29.
32	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
33	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if at least 2 timeslots have been assigned in step 18. Received on the assigned PDTCH ₂ on the same TDMA frame as step 32.
34	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if at least 3 timeslots have been assigned in step 18. Received on the assigned PDTCH ₃ on the same TDMA frame as step 32.
35		{Completion of uplink RLC data block transfer in extended dynamic mode}	

Specific Message Contents

None.

42.9.2.2.4 Extended Dynamic Allocation / Uplink Transfer / configuration change / Reduction in number of uplink slots using PACKET PDCH RELEASE.

42.9.2.2.4.1 Conformance requirements

When the mobile station receives an uplink assignment (e.g. PACKET UPLINK ASSIGNMENT, MULTIPLE TBF UPLINK ASSIGNMENT, PACKET TIMESLOT RECONFIGURE or MULTIPLE TBF TIMESLOT RECONFIGURE) that does not contain a TBF starting time, the mobile station shall begin monitoring the assigned PDCHs for the assigned USF value for each assigned PDCH within the reaction time defined in 3GPP TS 45.010. If a TBF starting time information element is present and no uplink TBFs are in progress, but one or more downlink TBFs

are in progress, the mobile station shall wait until the starting time before beginning to monitor the USFs and using the newly assigned uplink TBF parameters. While waiting for the starting time, the mobile station shall monitor the assigned PDCHs. If a TBF starting time information element is present and one or more uplink TBFs are already in progress, the mobile station shall continue to use the assigned parameters of the ongoing uplink TBFs until the TDMA frame number indicated by the TBF starting time occurs, at which time the mobile station shall immediately begin to use the newly assigned uplink TBF parameters. The mobile station shall continue to use the newly assigned parameters of each uplink TBF until the TBF is either released or reconfigured. If while waiting for the frame number indicated by the TBF starting time the mobile station receives another uplink assignment, the mobile station shall act upon the most recently received uplink assignment and shall ignore the previous uplink assignment.

References

3GPP TS 44.060, subclauses 8.1.1.1

42.9.2.2.4.2 Test purposes

To verify that the MS:

While in extended Dynamic mode TBF, if the number of slots allocated is reduced by using PACKET PDCH RELEASE, then MS adheres to the new allocation properly.

42.9.2.2.4.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure. In PACKET UPLINK ASSIGNMENT SS assigns a extended dynamic allocation TBF. Up to 4 timeslots are assigned, according to the mobile multislot class (TS 5.02 Annex B.1).

After receiving some data, SS reconfigures the TBF to have one slot less than given earlier, giving PACKET PDCH RELEASE. SS checks that MS using the new timeslot configuration properly.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	N = 1500 octets, without starting time, Assigning the TBF in extended dynamic mode. <u>Up to 4 timeslots are assigned according to MS multislot class (TS 05.02 Annex B.1) :</u> <ul style="list-style-type: none"> - USF₁ on TN₁, - USF₂ on TN₂, - USF₃ on TN₃, - USF₄ on TN₄,
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PACCH ₁ addressing the MS. Sent on third block from the last radio block containing the uplink assignment.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 2.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 2.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 2.
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 6.
8	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 6.
9	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 6.
10	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₁ on PACCH ₁ addressing the MS.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₂ is not addressing the MS, sent on the same TDMA frame as step 10
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 10
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 10
14	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
15	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 14
16	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 14.
17	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 14.
18	SS -> MS	PACKET PDCH RELEASE	TIMESLOT_AVAILABLE indicating that the number of slots available is reduced by 1. Highest numbered timeslot assigned in step 1 is released.
19	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF addressing the MS. Sent on the PDCH released in step 18. It is sent on the 7 th block from the message sent in step 18.

20			SS checks that the MS does not send any uplink data block in next block of the message sent in step 19.
21	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF on PACCH ₁ is addressing the MS.
22	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if at least 2 timeslots are available after PDCH release in step 18. USF on PACCH ₂ is not addressing the MS. Sent on the same TDMA frame as step 21.
23	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if at least 3 timeslots are available after PDCH release in step 18. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 21.
24	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
25	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if at least 2 timeslots are available after PDCH release in step 18. Received on the assigned PDTCH ₂ on the same TDMA frame as step 24.
26	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if at least 3 timeslots are available after PDCH release in step 18. Received on the assigned PDTCH ₃ on the same TDMA frame as step 24.
27		{Completion of uplink RLC data block transfer in extended dynamic mode}	

Specific Message Contents

None.

42.9.2.2.5 Extended Dynamic Allocation / Uplink Transfer / configuration change / Increase in number of uplink slots.

42.9.2.2.5.1 Conformance requirements

When the mobile station receives an uplink assignment (e.g. PACKET UPLINK ASSIGNMENT, MULTIPLE TBF UPLINK ASSIGNMENT, PACKET TIMESLOT RECONFIGURE or MULTIPLE TBF TIMESLOT RECONFIGURE) that does not contain a TBF starting time, the mobile station shall begin monitoring the assigned PDCHs for the assigned USF value for each assigned PDCH within the reaction time defined in 3GPP TS 45.010. If a TBF starting time information element is present and no uplink TBFs are in progress, but one or more downlink TBFs are in progress, the mobile station shall wait until the starting time before beginning to monitor the USFs and using the newly assigned uplink TBF parameters. While waiting for the starting time, the mobile station shall monitor the assigned PDCHs. If a TBF starting time information element is present and one or more uplink TBFs are already in progress, the mobile station shall continue to use the assigned parameters of the ongoing uplink TBFs until the TDMA frame number indicated by the TBF starting time occurs, at which time the mobile station shall immediately begin to use the newly assigned uplink TBF parameters. The mobile station shall continue to use the newly assigned parameters of each uplink TBF until the TBF is either released or reconfigured. If while waiting for the frame number indicated by the TBF starting time the mobile station receives another uplink assignment, the mobile station shall act upon the most recently received uplink assignment and shall ignore the previous uplink assignment.

References

3GPP TS 44.060, subclauses 8.1.1.1

42.9.2.2.5.2 Test purposes

To verify that the MS:

While in extended Dynamic mode TBF, if the number of slots is increased then MS adheres to the new allocation properly.

42.9.2.2.5.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer data in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure. In PACKET UPLINK ASSIGNMENT SS assigns a extended dynamic allocation TBF. Up to 3 timeslots are assigned, One slot less than the allowed by MS multislot class (TS 5.02 Annex B.1).

After receiving some data SS reconfigures the TBF to a have one slot more then given earlier, by giving PACKET UPLINK ASSIGNMENT. The new slot assigned is assigned towards the lower end. SS checks that MS using the MS is using the new timeslot configuration properly.

Maximum Duration of Test

10 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	N = 1500 octets, without starting time, Assigning the TBF in extended dynamic mode. <u>One slot less (Up to 3 timeslots are assigned) than the allowed limit according to MS multislot class (TS 05.02 Annex B.1):</u> <ul style="list-style-type: none"> - USF₂ on TN₂, - USF₃ on TN₃, - USF₄ on TN₄,
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₂ on PACCH ₂ addressing the MS on 3 blocks from the last radio block containing the uplink assignment.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 2 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 2.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 2.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ .
6	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 2 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 5.
7	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 5.
8	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF ₂ on PACCH ₂ addressing the MS.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 2 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 8.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 8.
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ .
12	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 2 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₃ on the same TDMA frame as step 11
13	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 11.
14	SS -> MS	PACKET UPLINK ASSIGNMENT	SS reconfigures the TBF. Assignment assigns a starting time of 104 frames. Number of slots is increased by one from the earlier allocation given in step 1. The slot is assigned at the lower end, i.e. TN ₁ is assigned with USF ₁ associated with it.
15	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₁ on PACCH ₁ addressing the MS. Send on three blocks before the starting time given in step 14.
16	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF ₂ on PACCH ₂ addressing the MS. Send on three blocks before the starting time given in step 14.
17	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 2 timeslots at least have been assigned in step 1. USF on PACCH ₃ is not addressing the MS, sent on the same TDMA frame as step 15.

18	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. USF on PACCH ₄ is not addressing the MS, sent on the same TDMA frame as step 15.
19			SS checks that the MS does not send any data block on PDTCH ₁ .
20	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ .
21	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 2 timeslots at least have been assigned in step 1 Received on the assigned PDTCH ₃ on the same TDMA frame as step 20.
22	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 1. Received on the assigned PDTCH ₄ on the same TDMA frame as step 20.
23	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF addressing the MS. Sent on the lowest numbered PDCH assigned in step 14. Send on the next block of the block given by starting time in step 14. USF on the other PDCHs are not addressing the MS.
24	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₁ .
25	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH ₂ on the same TDMA frame as step 24.
26	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 3 timeslots at least have been assigned in step 14. Received on the assigned PDTCH ₃ on the same TDMA frame as step 24.
27	MS -> SS	UPLINK RLC DATA BLOCK	This step is optional; it is performed only if 4 timeslots have been assigned in step 14. Received on the assigned PDTCH ₄ on the same TDMA frame as step 24.
28		{Completion of uplink RLC data block transfer in extended dynamic mode}	

Specific Message Contents

None.

42.9.3 Extended Dynamic Allocation / Shifted USF

42.9.3.1 Extended Dynamic Allocation / Shifted USF / Normal

42.9.3.1.1 Extended Dynamic Allocation / Shifted USF / Normal / PACCH management

42.9.3.1.1.1 Conformance requirements

When Shifted USF operation is used, PACCH operation shall be as described in sub-clause 8.1.1.2.2 except that the network shall transmit all PACCH messages on the PDCH carried on the second lowest numbered timeslot in the allocation, and the mobile station shall attempt to decode every downlink RLC/MAC block on the second lowest numbered timeslot in the PDCH allocation.

References

3GPP TS 44.060, sub-clause 8.1.1.2.4.

42.9.3.1.1.2 Test purposes

To verify that when the MS is configured for a multi-slot uplink data transfer with shifted USF operation in use, it will decode a PACCH message sent to the MS on the second lowest numbered timeslot in the PDCH assignment.

42.9.3.1.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer in RLC acknowledged mode, with Extended Dynamic Allocation MAC mode. The SS orders the MS to use two-phase access procedure. The maximum number of UL timeslots is assigned, according to the mobile multislot class (TS 45.002 Annex B.1).

The SS sends to the MS a PACKET DOWNLINK ASSIGNMENT message on the second lowest numbered timeslot in the PDCH assignment, together with a valid RRBP and the TFI assigned to the uplink TBF. It is checked that the MS responds with a PACKET CONTROL ACKNOWLEDGEMENT on the same timeslot.

The SS completes the data transfer.

Maximum Duration of Test

1 minute.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 40 octets, without starting time, Up to 6 consecutive timeslots are assigned according to MS multislot class (TS 45.002 Annex B.1): <ul style="list-style-type: none"> - USF₁ on TN₁, - USF₂ on TN₂, (USF₂ ≠ USF₁) - up to ... - USF_N on TN_N, where N = 5 or 6.
2	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PACCH of PDCH ₂ , 3 blocks on from the last radio block containing the uplink assignment. Includes the Polling bit set, and a valid RRBP field. Includes the TFI assigned to the uplink TBF. The timeslot assigned is TN ₂ . The USF is not addressing the MS.
3	MS-SS	PACKET CONTROL ACKNOWLEDGEMENT	Sent on the PACCH of PDCH ₂ , and on the radio block specified by the RRBP.
4		{ Completion of uplink RLC data block transfer in extended dynamic mode }	Using all assigned PDTCHs.

Specific Message Contents

None

42.9.3.1.2 Extended Dynamic Allocation / Shifted USF / Normal / USF assignment on 2nd PDCH

42.9.3.1.2.1 Conformance requirements

When Shifted USF operation is used, the USF for the first assigned PDCH shall be sent on the second assigned PDCH. The MS shall monitor the second assigned PDCH for the USF corresponding to both the first assigned PDCH and the second assigned PDCH. If the USF corresponding to the first assigned PDCH is detected then the mobile station shall transmit on the first assigned PDCH and all higher numbered assigned PDCHs. Otherwise, operation shall be as described in sub-clause 8.1.1.2.1.

The USF value corresponding to the first assigned PDCH shall be different from the USF value corresponding to the second assigned PDCH.

References

3GPP TS 44.060, subclauses 8.1.1.2.4

42.9.3.1.2.2 Test purposes

To verify that the MS:

In a multi-slot uplink data transfer with shifted USF operation in use, the USF for the 1st and 2nd assigned PDCH's are monitored and detected by the MS on the 2nd assigned PDCH, and otherwise operation is as for normal Extended Dynamic Allocation.

42.9.3.1.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer in RLC acknowledged mode, and with Extended Dynamic Allocation MAC mode. The SS orders the MS to use two-phase access procedure. The maximum number of UL timeslots is assigned, according to the mobile multislot class (TS 45.002 Annex B.1).

For one block period, the SS allocates blocks on all but the two lowest-numbered assigned PDCHs, by signalling to the MS the USF assigned to the third PDCH using the third PDCH. It is checked that the MS sends RLC data blocks on all but the two lowest-numbered assigned PDCHs.

For the next block period, the SS increases the number of PDCHs allocated to the MS, and allocates blocks on all but the lowest PDCH, by signalling to the MS the USF assigned to the second PDCH using the second PDCH. It is checked that the MS sends RLC data blocks on all but the lowest-numbered assigned PDCH.

For the next block period, the SS increases the number of PDCHs again, and allocates blocks on all assigned PDCHs, by signalling to the MS the USF assigned to the first PDCH, but using the second PDCH. It is checked that the MS sends RLC data blocks on all PDCHs.

The MS completes the packet data transfer.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 1500 octets, without starting time, Up to 6 consecutive timeslots are assigned according to MS multislot class (TS 45.002 Annex B.1): - USF ₁ on TN ₁ , - USF ₂ on TN ₂ , (USF ₂ ≠ USF ₁) - up to ... - USF _N on TN _N , where N = 5 or 6.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of PDCH ₃ , 3 blocks on from the last radio block containing the uplink assignment; the assigned USF ₃ is addressing the MS.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCKS	Sent on the PACCH of PDCH ₁ , PDCH ₂ and PDCH ₄ to PDCH _N on the same block period as step 2; the USF is not addressing the MS.
4	MS -> SS	UPLINK RLC DATA BLOCKS	Received on the assigned PDTCH ₃ to PDTCH _N
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of PDCH ₂ ; the assigned USF ₂ is addressing the MS.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCKS	Sent on the PACCH of PDCH ₁ and PDCH ₃ to PDCH _N on the same block period as step 5; the USF is not addressing the MS.
7	MS -> SS	UPLINK RLC DATA BLOCKS	Received on the assigned PDTCH ₂ to PDTCH _N
8	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of PDCH ₂ ; the assigned USF ₁ is addressing the MS.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCKS	Sent on the PACCH of PDCH ₁ and PDCH ₃ to PDCH _N on the same block period as step 8; the USF is not addressing the MS.
10	MS -> SS	UPLINK RLC DATA BLOCKS	Received on all assigned PDTCH ₁ to PDTCH _N
11		{ Completion of uplink RLC data block transfer in extended dynamic mode }	Using all assigned PDTCHs.

Specific Message Contents

None

42.9.3.1.3 Extended Dynamic Allocation / Shifted USF / Normal / Release of 2nd PDCH

42.9.3.1.3.1 Conformance requirements

(1) If a PACKET PDCH RELEASE message releases the second PDCH in the current timeslot configuration of a mobile station using Shifted USF operation then the first timeslot shall be considered released. If any PDCHs remain in the new timeslot configuration then normal USF operation shall continue starting on the lowest available timeslot.

(2) If the current timeslot configuration requires Shifted USF operation (see sub-clause 8.1.1.2.4) and the PACKET PDCH RELEASE message modifies the configuration in such a way that Shifted USF operation is no longer required then normal USF operation shall apply after a suitable reaction time as defined in 3GPP TS 45.010.

(3) Upon a receipt of a commanding message or indication from the network requiring an action by the mobile station, if the reaction time for such action is not specified elsewhere, the mobile station shall begin to perform the required action no later than the next occurrence of block B((x+6) mod 12), where block B(x) is the radio block containing the commanding message or indication from the network.

References

(1) 3GPP TS 44.060, subclause 8.1.1.2.4.

(2) 3GPP TS 44.060, clause 8.2

(3) 3GPP TS 45.010, clause 6.11.4

42.9.3.1.3.2 Test purposes

To verify that when the MS is performing a multi-slot uplink data transfer with shifted USF operation in use, and a PACKET PDCH RELEASE message is received that releases the second PDCH, then the MS will:

- stop transmitting on the first and second PDCH within the required reaction time, and
- continue data transfer using normal USF operation with Extended Dynamic Allocation and using the remaining available timeslots.

42.9.3.1.3.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting,

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context 2 activated.

Specific PICS Statements

- The GPRS multislot class supported (TSPC_Type_GPRS_Multislot_ClassX, where X = 1..45)

PIXIT Statements

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Test Procedure

The MS is triggered to initiate packet uplink transfer in RLC acknowledged mode. The SS orders the MS to use two-phase access procedure. The maximum number of UL timeslots is assigned, according to the mobile multislot class (TS 45.002 Annex B.1).

The SS signals to the MS the USF assigned to the lowest PDTCH on the second PDCH, and, in the next block period, it is checked that the MS sends RLC/MAC data blocks on all assigned PDTCH.

The SS sends a PACKET PDCH RELEASE message with TIMESLOTS_AVAILABLE indicating that the second lowest assigned PDCH timeslots is not available for packet data. For that block period, and the next five block periods, the SS continues signals to the MS the USF assigned to the lowest PDTCH on the second PDCH, and also the USF assigned to the third PDTCH on the corresponding PACCH.

On the sixth block period following the PACKET PDCH RELEASE message, it is checked that the MS has stopped transmitting on the two lowest timeslots, but continues to transmit on the remaining timeslots.

The SS completes the data transfer using the remaining timeslots.

Maximum Duration of Test

5 minutes.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 2000 octets, without starting time, Up to 6 consecutive timeslots are assigned according to MS multislot class (TS 45.002 Annex B.1): - USF ₁ on TN ₁ , - USF ₂ on TN ₂ , (USF ₂ ≠ USF ₁) - up to ... - USF _N on TN _N , where N = 5 or 6.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCKS	Sent on the PACCH of PDCH ₁ to PDCH _N , 3 blocks on from the last radio block containing the uplink assignment; the USF values are: PACCH ₁ - USF is not addressing the MS. PACCH ₂ - assigned USF ₁ is addressing the MS. PACCH ₃ - USF is not addressing the MS. up to ... PACCH _N - USF is not addressing the MS.
3	MS -> SS	UPLINK RLC DATA BLOCKS	Received on all assigned PDTCH ₁ to PDTCH _N
4	SS -> MS	PACKET PDCH RELEASE	Sent on the PACCH of PDCH ₂ on the same block period as step 3; the assigned USF ₁ is addressing the MS.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCKS	Sent on the PACCH of PDCH ₁ and PDCH ₃ to PDCH _N , on the same block period as step 3; the USF values are: PACCH ₁ - USF is not addressing the MS. PACCH ₃ - assigned USF ₃ is addressing the MS. PACCH ₄ - USF is not addressing the MS. up to ... PACCH _N - USF is not addressing the MS.
6	MS -> SS	UPLINK RLC DATA BLOCKS	RLC data blocks may optionally be received on PDTCH ₁ and PDTCH ₂ . RLC data blocks are mandatorily received on assigned PDTCH ₃ to PDTCH _N
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of PDCH ₁ to PDCH _N , on the same block period as step 6; the USF values are: PACCH ₁ - USF is not addressing the MS. PACCH ₂ - assigned USF ₁ is addressing the MS. PACCH ₃ - assigned USF ₃ is addressing the MS. PACCH ₄ - USF is not addressing the MS. up to PACCH _N - USF is not addressing the MS.
8	SS,MS		Steps 6 and 7 are repeated four times more.
9	MS -> SS	UPLINK RLC DATA BLOCKS	RLC data blocks are received on assigned PDTCH ₃ to PDTCH _N only. No RLC data blocks are received on PDTCH ₁ and PDTCH ₂ .
10		{ Completion of uplink RLC data block transfer in extended dynamic mode }	Using PDTCH ₃ to PDTCH _N

Specific Message Contents

PACKET PDCH RELEASE (Step 4):

- PAGE MODE	Indicating "Same as before"
- TIMESLOTS_AVAILABLE	Indicating that TN ₁ and TN ₃ to TN _N are available for GPRS. TN ₂ is not available.