26.10 E-GSM or R-GSM signalling

26.10.1 E-GSM or R-GSM signalling / general considerations

Subclause 26.10 only applies to E-GSM and R-GSM mobile stations. The details of frequencies used in different test cases are listed below.

Table 26.1: Frequencies used for E-GSM or R-GSM signalling tests

Test Case	Frequencies used in the test case	
	E-GSM testing	**R-GSM testing**
26.10.2.1	neighbour cell and serving cell: 0, 2, 26, 38, 990, 1003, 1005, 1020,	neighbour cell and serving cell: 0, 2, 26, 38, 960, 970, 990, 1020
26.10.2.2	single RF: 1015, hopping RF's: 0, 80, 1005, 1010	single RF: 972, hopping RF's: 0, 80, 958, 1010
26.10.2.3	k=1 hopping RF's c=1: 1005, 1010, 1015 c=2: 73, 74, 75, 76, 77 c=3: 980, 981, 982, 983 c=4: 30, 40, 1010, 1015 c=5: 980, 991, 992, 993, 994, 1015 c=6: 20, 40, 66 k=2 hopping RF's c=1: 1005, 1010, 1015 c=2: 73, 74, 75, 76, 77 c=3: 980, 981, 982, 983 c=4: 0, 30, 40, 1010, 1015 c=5: 990, 991, 992, 993, 994 c=6: 20, 40, 66	k=1 hopping RF's c=1: 964, 969, 972 c=2: 73, 76, 80, 85, 90 c=3: 956, 959, 976, 980 c=4: 30, 40, 969, 972, 990, 1020 c=5: 956, 960, 963, 966, 969, 972 c=6: 20, 40, 66 k=2 hopping RF's c=1: 964, 969, 972 c=2: 66, 73, 76, 79, 108 c=3: 960, 963, 978, 990 c=4: 0, 30, 40, 969, 972, 990, 1020 c=5: 962, 965, 968, 972 c=6: 20, 40, 66
26.10.2.4.1	Target cell BCCH: 40 k=1 hopping RF's c=1: 1005, 1010, 1015 c=2: 73, 74, 75, 76, 77 c=3: 980, 981, 982, 983 c=4: 30, 40, 1010, 1015 c=5: 980, 991, 992, 993, 994, 1015 k=2 hopping RF's c=1: 1005, 1010, 1015 c=2: 73, 74, 75, 76, 77 c=3: 980, 981, 982, 983 c=4: 30, 40, 1010, 1015 c=5: 980, 991, 992, 993, 994, 1015 c=6: 10, 40, 66 k=3 hopping RF's c=1: 1005, 1010, 1015 c=2: 73, 74, 75, 76, 77 c=3: 980, 981, 982, 983 c=4: 30, 40, 1010, 1015 c=5: 990, 991, 992, 993, 994 c=6: 10, 40, 66	Target cell BCCH: 965 k=1 hopping RF's c=1: 964, 969, 972 c=2: 73, 76, 79, 86, 97 c=3: 956, 960, 963, 970 c=4: 30, 40, 969, 972, 990, 1020 c=5: 956, 960, 964, 967, 970, 973 k=2 hopping RF's c=1: 964, 969, 972 c=2: 73, 76, 79, 86, 97 c=3: 956, 960, 963, 970 c=4: 30, 40, 969, 972, 990, 1020 c=5: 956, 960, 964, 967, 970, 973 c=6: 10, 40, 66 k=3 hopping RF's c=1: 964, 969, 972 c=2: 73, 76, 79, 108, 115 c=3: 960, 964, 969, 972 c=4: 30, 40, 969, 972, 990, 1020 c=5: 960, 963, 966, 969, 972 c=6: 10, 40, 66
26.10.2.4.2	Original cell BCCH: 20 Target cell BCCH: 40 hopping RF's: 1005, 1010, 1015	Original cell BCCH: 990 Target cell BCCH: 965 hopping RF's: 960, 970, 990
26.10.2.5	hopping RF's c=1: 1005, 1010, 1015 c=2: 73, 74, 75, 76, 77 c=3: 980, 981, 982, 983 c=4: 30, 40, 1010, 1015 c=5: 990, 991, 992, 993, 994 c=6: 30, 50, 70	hopping RF's c=1: 964, 969, 972 c=2: 73, 76, 79, 108, 114 c=3: 960, 964, 968, 972 c=4: 30, 40, 969, 972, 990, 1020 c=5: 960, 964, 967, 970, 972 c=6: 30, 50, 70

Test Case	Frequencies used in the test case	
	E-GSM testing	**R-GSM testing**
26.10.3.1	BCCH: 20 Immediate Assignment: 40 Assignment: 990	BCCH: 20 Immediate Assignment: 40 Assignment: 965
26.10.3.2	BCCH: 20 Immediate Assignment: 40 Assignment: 990	BCCH: 20 Immediate Assignment: 40 Assignment: 965

Conformance requirements of clause 26 fully apply to any mobile station (P-GSM, E-GSM, R-GSM or DCS) in the whole supported band of the mobile station.

Besides, as an E-GSM or R-GSM mobile station shall support the P-GSM band, it shall pass successfully every test of clause 26 under the described GSM 900 conditions.

The purpose of this extra section is to test the different procedures which may be impacted when some channel uses E-GSM or R-GSM frequency(ies).

26.10.2 E-GSM or R-GSM signalling / RR

26.10.2.1 E-GSM or R-GSM signalling / RR / Measurement

26.10.2.1.1 Conformance requirements

The MS shall continuously send MEASUREMENT REPORT messages on every SACCH blocks and the measurement valid indication shall be set to valid (0) within the second block at the latest. After 20 s the values in the MEASUREMENT REPORT message shall contain measurement results for the 6 th strongest cells belonging to the set of cells indicated either in SI5 and SI5bis messages or in SI5 and SI5ter messages.

References

3GPP TS 04.08 / 3GPP TS 44.018 subclauses 3.4.1.2 and 9.1.39,
3GPP TS 05.08 subclause 8.4.

26.10.2.1.2 Test purpose

To test that, when the SS gives information about neighbouring cells indicated either in SI5 and SI5bis messages or in SI5 and SI5ter messages, the MS reports appropriate results.

26.10.2.1.3 Method of test

Initial Conditions

System Simulator:

8 cells with the following settings:

E-GSM:

Transmitter	Level	NCC	BCC	ARFCN	Cell Identity
Serving, S1	-60	1	3	002	0001H
Neighbour, N1	-85	1	5	990	0002H
Neighbour, N2	-80	1	7	1005	0003H
Neighbour, N3	-75	1	1	000	0004H
Neighbour, N4	-55	1	3	026	0005H
Neighbour, N5	-50	1	5	1020	0006H
Neighbour, N6	-45	1	7	038	0007H
Neighbour, N7	-40	1	1	1003	0008H

R-GSM:

Transmitter	Level	NCC	BCC	ARFCN	Cell Identity
Serving, S1	-60	1	3	002	0001H
Neighbour, N1	-85	1	5	990	0002H
Neighbour, N2	-80	1	7	970	0003H
Neighbour, N3	-75	1	1	000	0004H
Neighbour, N4	-55	1	3	026	0005H
Neighbour, N5	-50	1	5	1020	0006H
Neighbour, N6	-45	1	7	038	0007H
Neighbour, N7	-40	1	1	960	0008H

With the exception of the Cell Allocation, the rest of the parameters for all eight cells are the same as the default settings and default SYSTEM INFORMATION TYPE 1 to 4 message contents for cell A. The Cell Allocation for the serving cell is the same as the default setting for cell A. The Cell Allocations for the neighbour cells need have only one entry, consisting of the ARFCN of that cell's BCCH.

Mobile Station:

The MS is in the active state of a call (U10).

Specific PICS statements:

- R-GSM Band (TSPC_Type_GSM_R_Band)

PIXIT statements:

-

Foreseen Final State of the MS

Active state of a call (U10).

Test Procedure

If the MS is R-GSM capable, then this test shall be performed using R-GSM, otherwise this test shall be performed using E-GSM.

The test is performed for execution counter, c=1 to 9.

For c=1 to 6, the following procedure applies:

With the MS having a call in progress, the SS sends SYSTEM INFORMATION TYPE 5, 5bis and 6 on the SACCH. The MS shall send MEASUREMENT REPORTs back to the SS, and it shall be indicated in these that measurement results for the 6 strongest present carriers of the supported band have been obtained.

For c=7 to 9, the following procedure applies:

With the MS having a call in progress, the SS sends SYSTEM INFORMATION TYPE 5, 5ter and 6 on the SACCH. The MS shall send MEASUREMENT REPORTs back to the SS, and it shall be indicated in these that measurement results for the 6 strongest present carriers of the supported band have been obtained.

Maximum Duration of Test

8 minutes, including 1 minute for any necessary operator actions.

Expected Sequence

This sequence is performed for execution counter, c= 1 to 9.

Since SYSTEM INFORMATION TYPE 5, SYSTEM INFORMATION TYPE 6 and MEASUREMENT REPORT are sent continuously, a table is not applicable in this test. The interval between 2 successive Layer 2 frames containing MEASUREMENT REPORTs shall not exceed one Layer 2 frame.

Specific Message Contents

E-GSM:

SYSTEM INFORMATION TYPE 5:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5.
Neighbour Cells Description	
- EXT IND	- EXT IND= 1, for c= 1 to 6: Information Element carries only a part of the BA. - EXT IND= 0, for c=7 to 9: Information Element carries the complete BA.
- BA-IND	0
	for c=1, use range 128 to encode the following frequencies: (26, 38)
	for c=2, use range 256 to encode the following frequencies (990, 1 003, 1 005)
	for c=3, use range 512 to encode the following frequencies (520, 990, 1 003, 1 005, 1 020)
	for c=4, use range 1 024 to encode the following frequencies (0, 26, 38, 990, 1 003, 1 005)
	for c=5, use variable Bitmap to encode the following frequencies (0, 26, 38)
	for c=6, use Bitmap 0 to encode the following frequencies (26)
	for c=7, use range 512 to encode the following frequencies: (520, 990, 1020)
	for c=8, use range 1024 to encode the following frequencies: (0, 26, 38, 990, 1005, 1020)
	for c=9, use range 256 to encode the following frequencies: (38)

SYSTEM INFORMATION TYPE 5bis:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5bis.
Neighbour Cells Description	
- EXT IND	Information Element carries only a part of the BA.
- BA-IND	0
	for c=1, use range 512 to encode the following frequencies: (520, 990, 1 003, 1 005, 1 020)
	for c=2, use range 128 to encode the following frequencies (0, 26, 38)
	for c=3, use range 256 to encode the following frequencies (0, 26, 38)
	for c=4, use range 1 024 to encode the following frequencies (520, 1 000)
	for c=5, use range 128 to encode the following frequencies (884, 990, 1 003, 1 005)
	for c=6, use range 512 to encode the following frequencies (520, 990, 1 003)

SYSTEM INFORMATION TYPE 5ter:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5ter.
Neighbour Cells Description	
- multiband reporting	normal reporting of the six strongest cells, irrespective of the band used.
- BA-IND	0
	for c=7, use range 1024 to encode the following frequencies (0,26,1003, 1005)
	for c=8, use variable bitmap to encode the following frequencies (1000,1003)
	for c=9,, use range 256 to encode the following frequencies (26, 1003, 1020)

SYSTEM INFORMATION TYPE 6:

Information Element	value/ remark
Protocol Discriminator	RR Management
Message Type	sys info 6
Cell Identity	default
LAI	default
Cell Options	
- Power Control Indicator	Power Control Indicator is set
- DTX Indicator	MS shall not use DTX
- Radio-Link-Time-out	default
PLMN permitted	only NCC 1 permitted

MEASUREMENT REPORT:

Information Element	value/remark
Protocol Discriminator	RR Management
Transaction Identifier	0000
Message Type	MEASUREMENT REPORT
Measurement Results	
BA-used	0
DTX-used	DTX was not used
RXLEV-FULL-SERVING-CELL	See note 1
RXLEV-SUB-SERVING-CELL	See note 1
MEAS-VALID	See note 3
RXQUAL-FULL-SERVING-CELL	See note 1
RXQUAL-SUB-SERVING-CELL	See note 1
NO-NCELL-M	n (see note 2)
RXLEV-NCELL-1	See note 1
BCCH-FREQ-NCELL-1	See note 2
BSIC-NCELL-1	Corresponds to that of BCCH-FREQ-NCELL-1
RXLEV-NCELL-2	See note 1
BCCH-FREQ-NCELL-2	See note 2
BSIC-NCELL-2	Corresponds to that of BCCH-FREQ-NCELL-2
RXLEV-NCELL-3	See note 1
BCCH-FREQ-NCELL-3	See note 2
BSIC-NCELL-3	Corresponds to that of BCCH-FREQ-NCELL-3
RXLEV-NCELL-4	See note 1
BCCH-FREQ-NCELL-4	See note 2
BSIC-NCELL-4	Corresponds to that of BCCH-FREQ-NCELL-4
RXLEV-NCELL-5	See note 1
BCCH-FREQ-NCELL-5	See note 2
BSIC-NCELL-5	Corresponds to that of BCCH-FREQ-NCELL-5
RXLEV-NCELL-6	See note 1
BCCH-FREQ-NCELL-6	See note 2
BSIC-NCELL-6	Corresponds to that of BCCH-FREQ-NCELL-6

NOTE 1:   These actual values are not checked.
NOTE 2:   ARFCN 2 is the serving cell carrier.
     c=1 report on ARFCNs 26, 38, 990, 1 003, 1 005, 1 020, n=6
     c=2 report on ARFCNs 26, 38, 990, 1 003, 1 005, 0, (1 020 stronger than 1 005 but not broadcasted in SYS INFO), n=6
     c=3 report on ARFCNs 26, 38, 1 003, 1 005, 1 020, 0 (990 less strong, 520 DCS), n=6
     c=4 report on ARFCNs 26, 38, 990, 1 003, 1 005, 0 (1 000 less strong, 520 DCS, 1 020 not broadcasted in SYS INFO), n=6
     c=5 report on ARFCNs 26, 38, 990, 1 003, 1 005, 0 (884 DCS), n=6
     c=6 report on ARFCNs 26, 990, 1 003, n=3
     c=7 report on ARFCNs 26, 990, 1003, 1005, 1020, 0 (520 DCS), n=6
     c=8 report on ARFCNs 26, 38, 1003, 1005, 1020, 0 (990 and 1000 less strong), n=6
     c=9 report on ARFCNs 26,38, 1003, 1020, n=4.
NOTE 3: The Measurement Valid Indication shall be set to valid within the second SACCH block at the latest.	

R-GSM:

SYSTEM INFORMATION TYPE 5:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5.
Neighbour Cells Description	
- EXT IND	- EXT IND= 1, for c=1 to 6: Information Element carries only a part of the BA. - EXT IND= 0, for c=7 to 9: Information Element carries the BA.
- BA-IND	0
	for c=1, use range 128 to encode the following frequencies: (26, 38)
	for c=2, use range 256 to encode the following frequencies (960, 970, 990)
	for c=3, use range 512 to encode the following frequencies (520, 960, 970, 990, 1020)
	for c=4, use range 1 024 to encode the following frequencies (0, 26, 38, 960, 970, 990)
	for c=5, use variable Bitmap to encode the following frequencies (0, 26, 38)
	for c=6, use Bitmap 0 to encode the following frequencies (26)
	for c=7, use range 512 to encode the following frequencies: (520, 990, 1020)
	for c=8, use range 1024 to encode the following frequencies: (0, 26, 38, 970, 990, 1020)
	for c=9, use range 256 to encode the following frequencies: (38)

SYSTEM INFORMATION TYPE 5bis:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5bis.
Neighbour Cells Description	
- EXT IND	Information Element carries only a part of the BA.
- BA-IND	0
	for c=1, use range 512 to encode the following frequencies: (520, 960, 970, 990, 1020)
	for c=2, use range 128 to encode the following frequencies (0, 26, 38)
	for c=3, use range 256 to encode the following frequencies (0, 26, 38)
	for c=4, use range 1 024 to encode the following frequencies (520, 1 000)
	for c=5, use variable Bitmap to encode the following frequencies (884, 960, 970, 990)
	for c=6, use range 512 to encode the following frequencies (520, 960, 990)

SYSTEM INFORMATION TYPE 5ter:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5ter.
Neighbour Cells Description	
- multiband reporting	normal reporting of the six strongest cells, irrespective of the band used.
- BA-IND	0
	for c=7, use range 1024 to encode the following frequencies (0, 26, 960, 970)
	for c=8, use variable bitmap to encode the following frequencies (960, 1000)
	for c=9,, use range 256 to encode the following frequencies (26, 960, 1020)

SYSTEM INFORMATION TYPE 6:

Information Element	value/ remark
Protocol Discriminator	RR Management
Message Type	sys info 6
Cell Identity	default
LAI	default
Cell Options	
- Power Control Indicator	Power Control Indicator is set
- DTX Indicator	MS shall not use DTX
- Radio-Link-Time-out	default
PLMN permitted	only NCC 1 permitted

MEASUREMENT REPORT:

Information Element	value/remark
Protocol Discriminator	RR Management
Transaction Identifier	0000
Message Type	MEASUREMENT REPORT
Measurement Results	
BA-used	1
DTX-used	DTX was not used
RXLEV-FULL-SERVING-CELL	See note 1
RXLEV-SUB-SERVING-CELL	See note 1
MEAS-VALID	See note 3
RXQUAL-FULL-SERVING-CELL	See note 1
RXQUAL-SUB-SERVING-CELL	See note 1
NO-NCELL-M	n (see note 2)
RXLEV-NCELL-1	See note 1
BCCH-FREQ-NCELL-1	See note 2
BSIC-NCELL-1	Corresponds to that of BCCH-FREQ-NCELL-1
RXLEV-NCELL-2	See note 1
BCCH-FREQ-NCELL-2	See note 2
BSIC-NCELL-2	Corresponds to that of BCCH-FREQ-NCELL-2
RXLEV-NCELL-3	See note 1
BCCH-FREQ-NCELL-3	See note 2
BSIC-NCELL-3	Corresponds to that of BCCH-FREQ-NCELL-3
RXLEV-NCELL-4	See note 1
BCCH-FREQ-NCELL-4	See note 2
BSIC-NCELL-4	Corresponds to that of BCCH-FREQ-NCELL-4
RXLEV-NCELL-5	See note 1
BCCH-FREQ-NCELL-5	See note 2
BSIC-NCELL-5	Corresponds to that of BCCH-FREQ-NCELL-5
RXLEV-NCELL-6	See note 1
BCCH-FREQ-NCELL-6	See note 2
BSIC-NCELL-6	Corresponds to that of BCCH-FREQ-NCELL-6

NOTE 1: These actual values are not checked.
NOTE 2: ARFCN 2 is the serving cell carrier.
    c=1 report on ARFCNs: 26, 38, 960, 970, 990, 1020. n=6
    c=2 report on ARFCNs: 26, 38, 960, 970, 990, 0. (1020 stronger than 970 but not broadcasted in SYS INFO). n=6
    c=3 report on ARFCNs: 26, 38, 960, 970, 1020, 0. (990 less strong, 520 DCS). n=6
    c=4 report on ARFCNs: 26, 38, 960, 970, 990, 0. (1000 less strong, 520 DCS, 1020 not broadcasted in SYS INFO). n=6
    c=5 report on ARFCNs: 26, 38, 960, 970, 990, 0. (884 DCS). n=6
    c=6 report on ARFCNs: 26, 960, 990. n=3
    c=7 report on ARFCNs: 26, 960, 970, 990, 1020, 0 (520 DCS). n=6
    c=8 report on ARFCNs: 26, 38, 960, 970, 1020, 0 (990 and 1000 less strong). n=6
    c=9 report on ARFCNs: 26, 38, 960, 1020. n=4.
NOTE 3: The Measurement Valid Indication shall be set to valid within the second SACCH block at the latest.	

26.10.2.2 E-GSM or R-GSM signalling / RR / Immediate assignment

26.10.2.2.1 Conformance requirement

Following a PAGING REQUEST message, the MS shall correctly set up an RR connection on a supported channel described in the IMMEDIATE ASSIGNMENT message, using some E-GSM or R-GSM frequency.

Reference(s)

3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.3.1.1.2.

26.10.2.2.2 Test purpose

To verify that the MS can correctly set up a dedicated control channel when E-GSM or R-GSM frequencies are used.

This tested for a SDCCH/8.

26.10.2.2.3   Method of test

Initial Conditions

System Simulator:

    1 cell.

E-GSM:

    CCCH-CONF is set to "1 basic physical channel used for CCCH not combined with SDCCHs".

    SYSTEM INFORMATION type 1 message contains the following frequencies in the Cell Channel Description IE: 0, 30, 40, 66, 80, 1 005, 1 010, 1 015 (use range 1 024 to encode).

    BCCH carrier number 1 015.

R-GSM:

    CCCH-CONF is set to "1 basic physical channel used for CCCH not combined with SDCCHs".

    SYSTEM INFORMATION type 1 message contains the following frequencies in the Cell Channel Description IE: 0, 30, 40, 66, 80, 958, 1010, 972 (use range 1 024 to encode).

    BCCH carrier number 972.

Mobile Station:

    The MS is in the "idle, updated" state, with a TMSI allocated.

Specific PICS statements:

-   R-GSM Band (TSPC_Type_GSM_R_Band)

PIXIT statements:

   -

Foreseen Final State of the MS

"Idle, updated", with TMSI allocated.

Test Procedure

If the MS is R-GSM capable, then this test shall be performed using R-GSM, otherwise this test shall be performed using E-GSM.

This test procedure is performed twice.

The System Simulator pages the MS and after the MS has responded with a CHANNEL REQUEST message the SS assigns an SDCCH channel using some E-GSM or R-GSM frequencies. The MS shall go to the correct channel and send a PAGING RESPONSE message. Then the SS initiates RR-release by sending a CHANNEL RELEASE message.

Maximum Duration of Test

15 seconds.

Expected Sequence

The sequence is performed for execution counter k = 1 to 2.

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	
2	MS -> SS	CHANNEL REQUEST	cause "answer to paging"
3	SS -> MS	IMMEDIATE ASSIGNMENT	Channel Type: see below
4	MS -> SS	PAGING RESPONSE	Shall be sent on the correct channel
5	SS -> MS	CHANNEL RELEASE	

Specific Message Contents

E-GSM:

IMMEDIATE ASSIGNMENT

As default except:

Information element	remark/value
Channel description	
- Channel Type	SDCCH/8
- Timeslot number	arbitrary but not zero
- Training sequence code	arbitrary
- Hopping channel	k=1 Single RF
	k=2 RF hopping channel
- Channel Selector	k=1 ARFCN=1 015
	k=2 MAIO = arbitrarily chosen HSN arbitrary chosen from the set (1,..63)
Mobile allocation	k=1 empty
	k=2 indicates the following frequencies (0, 80, 1 005, 1 010)

R-GSM:

IMMEDIATE ASSIGNMENT

As default except:

Information element	remark/value
Channel description	
- Channel Type	SDCCH/8
- Timeslot number	arbitrary but not zero
- Training sequence code	arbitrary
- Hopping channel	k=1 Single RF
	k=2 RF hopping channel
- Channel Selector	k=1 ARFCN=972
	k=2 MAIO = arbitrarily chosen HSN arbitrary chosen from the set (1,..63)
Mobile allocation	k=1 empty
	k=2 indicates the following frequencies (0, 80, 958, 1010)

26.10.2.3   E-GSM or R-GSM signalling / RR / channel assignment procedure

26.10.2.3.1   Conformance requirements

1. Upon receipt of the ASSIGNMENT COMMAND message, the mobile station initiates a local end release of link layer connections, disconnects the physical channels, commands the switching to the assigned channels and initiates the establishment of lower layer connections (this includes the activation of the channels, their connection and the establishment of the main signalling links).

2. The MS shall apply the hopping frequencies specified in ASSIGNMENT COMMAND message in the mobile allocation or frequency list or frequency short list at the time accessing the new channel.

References

3GPP TS 04.08 / 3GPP TS 44.018, subclauses 3.4.3 and 9.1.2.

26.10.2.3.2   Test purpose

1. To verify that upon receipt of an ASSIGNMENT COMMAND, the MS switches to the channel defined in the ASSIGNMENT COMMAND, establishes the link and sends an ASSIGNMENT COMPLETE message.

2. To verify that an MS, having received an ASSIGNMENT COMMAND, is able in case of frequency hopping to decode the mobile allocation and frequency list correctly and applies the specified frequencies.

26.10.2.3.3 Method of test

Initial Conditions

System Simulator:

1 cell, default parameters.

Mobile Station:

The MS is in the "idle, updated" state with a TMSI allocated.

Specific PICS statements:

- R-GSM Band (TSPC_Type_GSM_R_Band)

- TSPC_AddInfo_Full_rate_version_1

PIXIT statements:

-

Foreseen Final State of the MS

"Idle, updated", with TMSI allocated.

Test Procedure

If the MS is R-GSM capable, then this test shall be performed using R-GSM, otherwise this test shall be performed using E-GSM.

The test procedure is performed 2 times.

The SS pages the MS and allocates an SDCCH. Then a channel is assigned with ASSIGNMENT COMMAND. Each time the MS shall switch to the assigned channel, establish the link and send an ASSIGNMENT COMPLETE message.

The SS initiates the channel release procedure.

Maximum Duration of Test

3 minutes.

Expected Sequence

The test sequence is performed for execution counter k=1 to 2.

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	Timeslot Number = n.
4	MS -> SS	PAGING RESPONSE	
5	SS -> MS	ASSIGNMENT COMMAND	See specific message contents Timeslot Number = (n+1) mod 8
6	MS -> SS	ASSIGNMENT COMPLETE	Sent on the correct channel after establishment of the main signalling link. Steps 5 and 6 are repeated cmax times, where cmax is the number of frequency formats allowed for each value of k. Use repetition counter c: See specific message content.
7	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents

E-GSM:

ASSIGNMENT COMMAND:

Information element	value/remark
Protocol Discriminator	RR
Skip indicator	0000
Message type	ASSIGNMENT COMMAND
Channel Description	
- Channel type	TCH/F + ACCHs if supported by the MS or SDCCH/8 if not
- Timeslot number	arbitrary
- Training sequence code	chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	arbitrary
- HSN	arbitrarily chosen from the set (1,2...63)
Power Command	
- Power level	Arbitrarily chosen
For k=1	
Cell Channel Description IE is not included	
Frequency list	for c=1, use range 128 to encode the following frequencies: (1 005, 1 010, 1 015)
	for c=2, use range 256 to encode the following frequencies (73, 74, 75, 76, 77)
	for c=3, use range 512 to encode the following frequencies (980, 981, 982, 983)
	for c=4, use range 1 024 to encode the following frequencies (30, 40, 1 010, 1 015)
	for c=5, use variable Bitmap to encode the following frequencies (980, 991, 992, 993, 994, 1 015) with an encoding origin set to 980
	for c=6, use Bitmap 0 to encode the following frequencies (20, 40, 66)
For k=2	
Cell Channel Description	for c=1, use range 128 to encode the following 13 frequencies: (980, 981, 982, 983, 990, 991, 992, 993, 994, 1 000, 1 005, 1 010, 1 015)
	for c=2, use range 256 to encode the following 13 frequencies (20, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114, 115)
	for c=3, use range 512 to encode the following 13 frequencies (980, 981, 982, 983, 990, 991, 992, 993, 994, 1 000, 1 005, 1 010, 1 015)
	for c=4, use range 1 024 to encode the following 8 frequencies (0, 30, 40, 66, 80, 1 005, 1 010, 1 015)
	for c=5, use variable Bitmap to encode the following frequencies (980, 981, 982, 983, 990, 991, 992, 993, 994, 1 000, 1 005, 1 010, 1 015)
	for c=6, use Bitmap 0 to encode the following 12 frequencies (20, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114)
For k = 2	
Mobile Allocation	indicates the following the frequencies:
	for c=1 (1 005, 1 010, 1 015)
	for c=2 (73, 74, 75, 76, 77)
	for c=3 (980, 981, 982, 983)
	for c=4 (0, 30, 40, 1 010, 1 015)
	for c=5 (990, 991, 992, 993, 994)
	for c=6 (20, 40, 66)
Mode of the First channel	speech full rate version 1 for TCH/F except if speech is not supported: arbitrary from those supported
Starting Time	not included

R-GSM:

ASSIGNMENT COMMAND:

Information element	value/remark
Protocol Discriminator	RR
Skip indicator	0000
Message type	ASSIGNMENT COMMAND
Channel Description	
- Channel type	TCH/F + ACCHs if supported by the MS or SDCCH/8 if not
- Timeslot number	arbitrary
- Training sequence code	chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	arbitrary
- HSN	arbitrarily chosen from the set (1,2...63)
Power Command	
- Power level	Arbitrarily chosen
For k=1	
Cell Channel Description IE is not included	
Frequency list	for c=1, use range 128 to encode the following frequencies: (964, 969, 972)
	for c=2, use range 256 to encode the following frequencies (73, 76, 80, 85, 90)
	for c=3, use range 512 to encode the following frequencies (956, 960, 976, 980)
	for c=4, use range 1 024 to encode the following frequencies (30, 40, 969, 972, 990, 1020)
	for c=5, use variable Bitmap to encode the following frequencies (956, 960, 963, 966, 969, 972) with an encoding origin set to 956
	for c=6, use Bitmap 0 to encode the following frequencies (20, 40, 66)
For k=2	
Cell Channel Description	for c=1, use range 128 to encode the following 13 frequencies: (960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972)
	for c=2, use range 256 to encode the following 13 frequencies (20, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114, 115)
	for c=3, use range 512 to encode the following 13 frequencies (960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 978, 990)
	for c=4, use range 1 024 to encode the following 10 frequencies (0, 30, 40, 66, 80, 964, 969, 972, 990, 1020)
	for c=5, use variable Bitmap to encode the following 13 frequencies (960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972)
	for c=6, use Bitmap 0 to encode the following 12 frequencies (20, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114)
For k = 2	
Mobile Allocation	indicates the following the frequencies:
	for c=1 (964, 969, 972)
	for c=2 (66, 73, 76, 79, 108)
	for c=3 (960, 964, 978, 990)
	for c=4 (0, 30, 40, 969, 972, 990, 1020)
	for c=5 (962, 965, 968, 972)
	for c=6 (20, 40, 66)
Mode of the First channel	speech full rate version 1 for TCH/F except if speech is not supported: arbitrary from those supported
Starting Time	not included

26.10.2.4   E-GSM or R-GSM signalling / RR / Handover

26.10.2.4.1   E-GSM or R-GSM signalling / RR / Handover / Successful handover

26.10.2.4.1.1   Conformance requirements

The MS shall correctly apply the handover procedure from a channel without frequency hopping in the primary band to a channel with frequency hopping using P-GSM and E-GSM or P-GSM and R-GSM frequencies whatever the coding used for the frequency hopping description.

References

3GPP TS 04.08 / 3GPP TS 44.018, subclauses 3.4.4 and 9.1.15.

26.10.2.4.1.2   Test purpose

To check that the MS correctly performs a non-synchronized handover, from a non hopping primary band SDCCH to a hopping TCH or SDCCH using E-GSM or R-GSM frequencies, whatever the coding used for the hopping sequence description and that it activates the new channel correctly.

This is tested in the following case:

     E-GSM or R-GSM signalling / Handover / successful / call under establishment / non-synchronized /:

-    from SDCCH/8 to TCH/F if the MS supports a TCH;

-    from SDCCH/8 to SDCCH/8 if not.

26.10.2.4.1.3   Method of test

Initial Conditions

     System Simulator:

       E-GSM:

         2 cells A and B with same LAI, default parameters;

         except for Cell A: the broadcasted Cell Channel Description in SYSTEM INFORMATION type 1 message contains the following frequencies: 20, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114 (encoded using Bit Map 0 format);

         The broadcasted BCCH frequency list for Cell A in SYSTEM INFORMATION type 2 and 5 contains the following frequencies: 10, 20, 40, 80, 90, 100, 110 and 120 (encoded in Bit Map 0 format).

       R-GSM:

         2 cells A and B with same LAI, default parameters;

         except for Cell A: the broadcasted Cell Channel Description in SYSTEM INFORMATION type 1 message contains the following frequencies: 20, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114 (encoded using Bit Map 0 format);

         Except for Cell B: the BCCH carrier number is 965.

     Mobile Station:

       The MS is in the "idle, updated" state, with a TMSI allocated and camped on cell A.

Specific PICS statements:

-    R-GSM Band (TSPC_Type_GSM_R_Band)

-    TSPC_AddInfo_Full_rate_version_1

PIXIT statements:

-

Foreseen Final State of the MS

"Idle, updated" with TMSI allocated and camped on cell B.

Test Procedure

If the MS is R-GSM capable, then this test shall be performed using R-GSM, otherwise this test shall be performed using E-GSM.

The test procedure is performed 17 times.

A Mobile Originating Call is initiated on cell A. After the MS has sent the SETUP message (and before the last L2 frame carrying the SETUP message is acknowledged by the SS) the SS sends a HANDOVER COMMAND message, ordering the MS to switch to cell B.

The MS shall then begin to send access bursts on the new channel, a TCH/F if supported (see PICS) or an SDCCH if not, to cell B.

The SS observes the access bursts. After receiving n access bursts, n being randomly drawn between 10 and 20 for the TCH case, 2 and 5 for the SDCCH (see table 26.6-2 of subclause 26.6.5), the SS sends one PHYSICAL INFORMATION message with a Timing Advance of 20 (see table 26.6-1 of subclause 26.6.5).

The MS shall activate the channel in sending and receiving mode. Then the MS shall establish a signalling link using the correct timing advance. The MS shall be ready to transmit a HANDOVER COMPLETE message before x ms after the end of the PHYSICAL INFORMATION message but not before a UA frame has been sent by the SS. The MS shall then again send the SETUP message to the SS, using the same value in the N(SD) field. Finally the SS sends a CHANNEL RELEASE to end the test.

The term "ready to transmit" is specified in 3GPP TS 04.13. The value of "x" depends upon the target channel:

- case SDCCH/8 x = 750;

- case TCH/F x=500.

Maximum Duration of Test

10 minutes.

Expected Sequence

The sequence is performed for execution counter k=1 to 3 and c=1 to 6 (excluding k=1 and c=6 as Format Bit Map 0 is not supported in the Frequency Short List IE).

Step	Direction	Message	Comments
1	--------	--------	A MO call is initiated on cell A
2	MS -> SS	CHANNEL REQUEST	Establ. Cause = "Originating call, NECI not set to 1
3	SS -> MS	IMMEDIATE ASSIGNMENT	see specific message contents
4	MS -> SS	CM SERVICE REQUEST	CM Service Type = Mobile Originating Call Establishment.
5	SS -> MS	CIPHERING MODE COMMAND	
6	MS -> SS	CIPHERING MODE COMPLETE	
7	MS -> SS	SETUP	Last L2 frame not acknowledged by the SS.
8	SS -> MS	HANDOVER COMMAND	see specific message contents
9	MS -> SS	HANDOVER ACCESS	Repeated on every burst of the uplink main DCCH (and optionally the SACCH) until reception of PHYSICAL INFORMATION. Handover Reference as included in the HANDOVER COMMAND
10	SS -> MS	PHYSICAL INFORMATION	Sent after reception of n HANDOVER ACCESS. Timing Advance: 20
11	MS -> SS	SABM	Sent without information field
12	SS -> MS	UA	
13	MS -> SS	HANDOVER COMPLETE	This message shall be ready to be transmitted before "x" ms after the completion of step 10
14	MS -> SS	SETUP	Same N(SD) as in step 7.
15	SS -> MS	CHANNEL RELEASE	

Specific Message Contents

E-GSM:

IMMEDIATE ASSIGNMENT

Information Element	Value/remark
As default message contents, except:	
Channel Description	
- Channel type	SDCCH/8
- Timeslot number	arbitrary but not zero
- Training sequence code	chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	Chosen arbitrarily from the Cell Allocation of Cell A, but not the BCCH carrier of Cell A.

HANDOVER COMMAND

Information Element	Value/remark
As default message contents, except:	
Cell Description	
- BCCH carrier number	40
Channel Description	
- Channel type	TCH/F + ACCHs if supported by the MS or SDCCH/8 if not
- Timeslot number	arbitrary but not zero
- Training sequence code	chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	arbitrary
- HSN	arbitrarily chosen from the set (1,2...63)
Synchronization Indication IE is not included	
For k = 1,	
Cell Channel Description IE is not included	
Frequency short list	for c=1, use range 128 to encode the following frequencies: (1 005, 1 010, 1 015)
	for c=2, use range 256 to encode the following frequencies (73, 74, 75, 76, 77)
	for c=3, use range 512 to encode the following frequencies (980, 981, 982, 983)
	for c=4, use range 1 024 to encode the following frequencies (30, 40, 1 010, 1 015)
	for c=5, use variable Bitmap to encode the following frequencies (980, 991, 992, 993, 994, 1 015)
For k=2	
Cell Channel Description IE is not included	
Frequency list	for c=1, use range 128 to encode the following frequencies: (1 005, 1 010, 1 015)
	for c=2, use range 256 to encode the following frequencies (73, 74, 75, 76, 77)
	for c=3, use range 512 to encode the following frequencies (980, 981, 982, 983)
	for c=4, use range 1 024 to encode the following frequencies (30, 40, 1 010, 1 015)
	for c=5, use variable Bitmap to encode the following frequencies (980, 991, 992, 993, 994, 1 015)
	for c=6, use Bitmap 0 to encode the following frequencies (10, 40, 66)
For k=3	
Cell Channel Description	for c=1, use range 128 to encode the following 13 frequencies: (980, 981, 982, 983, 990, 991, 992, 993, 994, 1 000, 1 005, 1 010, 1 015)
	for c=2, use range 256 to encode the following 13 frequencies (10, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114, 115)
	for c=3, use range 512 to encode the following 13 frequencies (980, 981, 982, 983, 990, 991, 992, 993, 994,

Information Element	Value/remark
	1 000, 1 005, 1 010, 1 015) for c=4, use range 1 024 to encode the following 10 frequencies (0, 30, 40, 66, 80, 520, 975, 1 005, 1 010, 1 015) for c=5, use variable Bitmap to encode the following 13 frequencies (980, 981, 982, 983, 990, 991, 992, 993, 994, 1 000, 1 005, 1 010, 1 015) for c=6, use Bitmap 0 to encode the following 12 frequencies (10, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114)
For k = 3 Mobile Allocation	indicates the following the frequencies: for c=1 (1 005, 1 010, 1 015) for c=2 (73, 74, 75, 76, 77) for c=3 (980, 981, 982, 983) for c=4 (30, 40, 1 010, 1 015) for c=5 (990, 991, 992, 993, 994) for c=6 (10, 40, 66)
Mode of the First channel	if SDCCH/8: signalling if TCH/F: speech full rate version 1 if speech is supported, otherwise arbitrary from those supported

R-GSM:

IMMEDIATE ASSIGNMENT

Information Element	Value/remark
As default message contents, except: Channel Description	
- Channel type	SDCCH/8
- Timeslot number	arbitrary but not zero
- Training sequence code	chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	Chosen arbitrarily from the Cell Allocation of Cell A, but not the BCCH carrier of Cell A.

HANDOVER COMMAND

Information Element	Value/remark
As default message contents, except:	
Cell Description	
- BCCH carrier number	965
Channel Description	
- Channel type	TCH/F + ACCHs if supported by the MS or SDCCH/8 if not
- Timeslot number	arbitrary but not zero
- Training sequence code	chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	arbitrary
- HSN	arbitrarily chosen from the set (1,2...63)
Synchronization Indication IE is not included	
For k = 1,	
Cell Channel Description IE is not included	
Frequency short list	for c=1, use range 128 to encode the following frequencies: (964, 969, 972)
	for c=2, use range 256 to encode the following frequencies (73, 76, 79, 86, 97)
	for c=3, use range 512 to encode the following frequencies (956, 960, 964, 970)
	for c=4, use range 1 024 to encode the following frequencies (30, 40, 969, 972, 990, 1020)
	for c=5, use variable Bitmap to encode the following frequencies (956, 960, 964, 967, 970, 973)
For k=2	
Cell Channel Description IE is not included	
Frequency list	for c=1, use range 128 to encode the following frequencies: (964, 969, 972)
	for c=2, use range 256 to encode the following frequencies (73, 76, 79, 86, 97)
	for c=3, use range 512 to encode the following frequencies (956, 960, 963, 970)
	for c=4, use range 1 024 to encode the following frequencies (30, 40, 969, 972, 990, 1020)
	for c=5, use variable Bitmap to encode the following frequencies (956, 960, 964, 967, 970, 973)
	for c=6, use Bitmap 0 to encode the following frequencies (10, 40, 66)
For k=3	
Cell Channel Description	for c=1, use range 128 to encode the following 13 frequencies: (960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972)
	for c=2, use range 256 to encode the following 13 frequencies (10, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114, 115)
	for c=3, use range 512 to encode the following 13 frequencies (960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972)
	for c=4, use range 1 024 to encode the following 12 frequencies (0, 30, 40, 66, 80, 520, 955, 964, 969, 972, 990, 1020)
	for c=5, use variable Bitmap to encode the following frequencies (960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972)
	for c=6, use Bitmap 0 to encode the following 12 frequencies (10, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114)

Information Element	Value/remark
For k = 3 Mobile Allocation	indicates the following the frequencies: for c=1 (964, 969, 972) for c=2 (73, 76, 79, 108, 115) for c=3 (960, 964, 969, 972) for c=4 (30, 40, 969, 972, 990, 1020) for c=5 (960, 963, 966, 969, 972) for c=6 (10, 40, 66)
Mode of the First channel	if SDCCH/8: signalling if TCH/F: speech full rate version 1 if speech is supported, otherwise arbitrary from those supported

26.10.2.4.2   E-GSM or R-GSM signalling / RR / Handover / layer 1 failure

26.10.2.4.2.1   Conformance requirements

During a handover from a channel in the E-GSM or R-GSM band to a channel in the P-GSM band, or the contrary, the MS shall correctly return to the old channel in the case of an handover failure caused by a layer 1 failure on the target cell.

References

3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.4.4.

26.10.2.4.2.2   Test purpose

To check that the MS correctly returns to the old channel in the case of a handover failure caused by a layer 1 failure on the target cell, even if the origin is in the P-GSM band and the target in the E-GSM or R-GSM band.

26.10.2.4.2.3   Method of test

Initial Conditions

    System Simulator:

        E-GSM:

            2 cells with same LAI, default parameters.

                Cell A: The broadcasted BCCH frequency list for Cell A in SYSTEM INFORMATION type 2 and 5 contains the following frequencies: 10, 20, 40, 80, 90, 100, 110 and 120 (encoded in Bit Map 0 format).

            The BCCH carrier number of Cell B is 40. (According to Table 26.1)

        R-GSM:

            2 cells with same LAI, default parameters, except the BCCH carrier number of Cell A is 990, the BCCH carrier number of Cell B is 965.

    Mobile Station:

        E-GSM:

            The MS is in the active state (U10) of a call on a P-GSM channel of cell A. power level = 10.

        R-GSM:

            The MS is in the active state (U10) of a call on a E-GSM channel of cell A, power level = 10.

Specific PICS statements:

-    R-GSM Band (TSPC_Type_GSM_R_Band)

-    TSPC_AddInfo_Full_rate_version_1

PIXIT statements:

-

Foreseen Final State of the MS

The active state (U10) of a mobile call (on cell A), used power level 10.

Test Procedure

If the MS is R-GSM capable, then this test shall be performed using R-GSM, otherwise this test shall be performed using E-GSM.

The MS is in the active state (U10) of a call on a P-GSM channel (on an E-GSM channel for R-GSM testing) of cell A (used power level 10). The SS sends a HANDOVER COMMAND on the main DCCH. The MS shall begin to send access bursts at the commanded power level on the new DCCH (and optionally on SACCH) to cell B (power level 12). With the exception of normal BCCH signalling, the SS does not transmit anything on cell B (thus causing a time-out of T3124). The MS shall re-establish the old link on cell A and send a HANDOVER FAILURE within 3 seconds from the transmission of HANDOVER COMMAND, using the old power level.

Maximum Duration of Test

1 minute.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	HANDOVER COMMAND	to an E-GSM or R-GSM channel see specific message contents
2	MS -> SS	HANDOVER ACCESS	Several messages are sent, all with correct Handover References.
3	MS -> SS	HANDOVER FAILURE	Sent on old channel, RR cause value = "Abnormal release, unspecified", "Abnormal release, channel unacceptable", "Abnormal release, timer expired", "Abnormal release, no activity on the radio path" or "Protocol error unspecified". Layer 1 header has the same power level as the layer 1 header in step 1. Shall be sent within 3 seconds from the transmission of HANDOVER COMMAND.

Specific Message Contents

E-GSM:

HANDOVER COMMAND

Information Element	Value/remark
As default message contents, except:	
Cell Description	
- BCCH carrier number	40
Channel Description	
- Channel type	TCH/F + ACCHs if supported by the MS
- Timeslot number	arbitrary but not zero
- Training sequence code	chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	arbitrary
- HSN	chosen randomly from the set (1,2...63)
Synchronization Indication IE is not included	
Cell Channel Description IE is not included	
Frequency short list	use range 128 to encode the following frequencies: (1 005, 1 010, 1 015)
Mode of the first channel	Full rate speech version 1 if supported. If not, arbitrary from those supported except signalling.

R-GSM:

HANDOVER COMMAND

Information Element	Value/remark
As default message contents, except:	
Cell Description	
- BCCH carrier number	965
Channel Description	
- Channel type	TCH/F + ACCHs if supported by the MS
- Timeslot number	arbitrary but not zero
- Training sequence code	chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	arbitrary
- HSN	chosen randomly from the set (1,2...63)
Synchronization Indication IE is not included	
Cell Channel Description IE is not included	
Frequency short list	use range 128 to encode the following frequencies: (960, 970, 990)
Mode of the first channel	Full rate speech version 1 if supported. If not, arbitrary from those supported except signalling.

26.10.2.5 E-GSM or R-GSM signalling / RR / Frequency Redefinition

26.10.2.5.1 Conformance requirements

1) To verify that the MS, after receiving a FREQUENCY REDEFINITION message, correctly starts using the new frequencies, and hopping sequence when some E-GSM or R-GSM frequencies are used.

2) The last received Cell Channel Description information element is used to decode the Mobile Allocation IE received on the FREQUENCY REDEFINITION message.

References

3GPP TS 04.08 / 3GPP TS 44.018, subclauses 3.4.5 and 9.1.13.

26.10.2.5.2 Test purpose

1) To verify that the MS, after receiving a FREQUENCY REDEFINITION message, starts using the new frequencies and hopping sequence when some E-GSM or R-GSM frequencies are used.

2) To check that the last received Cell Channel Description information element is used to decode the Mobile Allocation IE received in the FREQUENCY REDEFINITION message.

26.10.2.5.3 Method of test

Initial conditions

    System Simulator:

        1 cell; default parameters.

    Mobile Station:

        The MS is in "idle, updated" state with TMSI allocated.

Specific PICS statements:

    - R-GSM Band (TSPC_Type_GSM_R_Band)

    - TSPC_AddInfo_Full_rate_version_1

PIXIT statements:

    -

Foreseen final state of the MS

"Idle, updated", with TMSI allocated.

Test procedure

If the MS is R-GSM capable, then this test shall be performed using R-GSM, otherwise this test shall be performed using E-GSM.

The test procedure is performed six times.

The System Simulator pages the MS and after the MS has responded with a CHANNEL REQUEST, the simulator assigns a TCH/F if supported otherwise a SDCCH/8. Then the SS sends to MS a FREQUENCY REDEFINITION. The MS shall then use the new frequencies/hopping sequence.

Maximum duration of test

3 minutes.

Expected sequence

The sequence is performed for execution counter c=1 to 6.

Step	Direction	Message	Comments
1	SS->MS	PAGING REQUEST TYPE 1	
2	MS->SS	CHANNEL REQUEST	
3	SS->MS	IMMEDIATE ASSIGNMENT	Hopping channel, Channel type = TCH/F if a TCH is supported otherwise, Channel type=SDCCH/8.
4	MS->SS	PAGING RESPONSE	Sent on the correct channel after establishment of the main signalling link
5	SS->MS	FREQUENCY REDEFINITION	See specific message contents.
6	-----	------------------	The SS checks that the MS is transmitting on the correct frequencies.
7	SS->MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents

E-GSM:

FREQUENCY REDEFINITION

Information Element	Value/remark
As default message contents, except:	
Cell Description	
- BCCH carrier number	40
Channel Description	
- Channel type	Same as in IMMEDIATE ASSIGNMENT
- Timeslot number	Same as in IMMEDIATE ASSIGNMENT
- Training sequence code	Same as in IMMEDIATE ASSIGNMENT
- Hopping	RF hopping channel
- MAIO	arbitrary
- HSN	Same as in IMMEDIATE ASSIGNMENT
Cell Channel Description	for c=1, use range 128 to encode the following 13 frequencies: (980, 981, 982, 983, 990, 991, 992, 993, 994, 1 000, 1 005, 1 010, 1 015)
	for c=2, use range 256 to encode the following 13 frequencies (20, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114, 115)
	for c=3, use range 512 to encode the following 13 frequencies (980, 981, 982, 983, 990, 991, 992, 993, 994, 1 000, 1 005, 1 010, 1 015)
	for c=4, use range 1 024 to encode the following 8 frequencies (0, 30, 40, 66, 80, 1 005, 1 010, 1 015)
	for c=5, use variable Bitmap to encode the following frequencies (980, 981, 982, 983, 990, 991, 992, 993, 994, 1 000, 1 005, 1 010, 1 015)
	for c=6, not present (the mobile station will use the last Cell Channel Description IE received, i.e. the one broadcast in the SYSTEM INFORMATION TYPE 1 message).
Mobile Allocation	indicates the following frequencies:
	for c=1 (1 005, 1 010, 1 015)
	for c=2 (73, 74, 75, 76, 77)
	for c=3 (980, 981, 982, 983)
	for c=4 (30, 40, 1 010, 1 015)
	for c=5 (990, 991, 992, 993, 994)
	for c=6 (30, 50, 70)
Starting time	indicates (current frame number + 100 frames) mod 42432

R-GSM:

FREQUENCY REDEFINITION

Information Element	Value/remark
As default message contents, except:	
Cell Description	
- BCCH carrier number	40
Channel Description	
- Channel type	Same as in IMMEDIATE ASSIGNMENT
- Timeslot number	Same as in IMMEDIATE ASSIGNMENT
- Training sequence code	Same as in IMMEDIATE ASSIGNMENT
- Hopping	RF hopping channel
- MAIO	arbitrary
- HSN	Same as in IMMEDIATE ASSIGNMENT
Cell Channel Description	for c=1, use range 128 to encode the following 13 frequencies: (960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972)
	for c=2, use range 256 to encode the following 13 frequencies (20, 40, 66, 73, 74, 75, 76, 77, 78, 79, 108, 114, 115)
	for c=3, use range 512 to encode the following 13 frequencies (960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972)
	for c=4, use range 1 024 to encode the following 10 frequencies (0, 30, 40, 66, 80, 964, 969, 972, 990, 1020)
	for c=5, use variable Bitmap to encode the following 13 frequencies (960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972)
	for c=6, not present (the mobile station will use the last Cell Channel Description IE received, i.e. the one broadcast in the SYSTEM INFORMATION TYPE 1 message).
Mobile Allocation	indicates the following frequencies:
	for c=1 (964, 969, 972)
	for c=2 (73, 76, 79, 108, 114)
	for c=3 (960, 964, 968, 972)
	for c=4 (30, 40, 969, 972, 990, 1020)
	for c=5 (960, 964, 967, 970, 972)
	for c=6 (30, 50, 70)
Starting time	indicates (current frame number + 100 frames) mod 42432

26.10.3   E-GSM or R-GSM signalling / Structured procedure

26.10.3.1   E-GSM or R-GSM signalling / Structured procedure / Mobile originated call

26.10.3.1.1   Conformance requirement

1) An MS in MM state "idle, updated" and in RR idle mode with a TMSI assigned, when made to initiate a call for a selected teleservice that is supported by the MS, shall start to initiate an immediate assignment procedure by sending the CHANNEL REQUEST message with correct establishment cause.

2) Upon receipt of the ASSIGNMENT COMMAND message, the Mobile Station initiates a local end release of link layer connections, disconnects the physical channels, commands the switching to the assigned channels and initiates the establishment of lower layer connections (this includes the activation of the channels, their connection and the establishment of the data links). After the main signalling link is successfully established, the MS returns an ASSIGNMENT COMPLETE message, specifying cause "normal event", to the network on the main DCCH.

3, 4) The call control entity of the Mobile Station in the "call initiated" state, in the "mobile originating call proceeding" state or in the "call delivered" state, shall, upon receipt of a CONNECT message:

- attach the user connection to the radio path;

- return a CONNECT ACKNOWLEDGE message.

References

    Conformance requirement 1:   3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.3.1.1.

    Conformance requirement 2:   3GPP TS 04.08 / 3GPP TS 44.018 subclauses 3.4.3.1 and 3.4.3.2.

    Conformance requirement 3:   3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.4.3.

    Conformance requirement 4:   3GPP TS 04.08 / 3GPP TS 24.008 subclause 5.2.1.1.6.

    Conformance requirement 5:   3GPP TS 02.07.

    Conformance requirement 6:   3GPP TS 04.08 / 3GPP TS 24.008 subclauses 5.2.1.1.6 and 5.1.3.

26.10.3.1.2   Test purpose

1) To verify that the MS in MM state "idle, updated" and in RR idle mode with a TMSI assigned, when made to initiate a call for a selected teleservice that is supported by the MS as declared in a PICS/PIXIT statement, starts to initiate an immediate assignment procedure by sending the CHANNEL REQUEST message.

2) To verify that subsequently after receipt of an IMMEDIATE ASSIGNMENT message allocating an SDCCH, after completion of establishment of the main signalling link, after having sent a CM SERVICE REQUEST message, after having successfully performed authentication and cipher mode setting procedures, after having sent a SETUP message, after having received a CALL PROCEEDING message followed by an ALERTING message and an ASSIGNMENT COMMAND message allocating an appropriate TCH, the MS sends an ASSIGNMENT COMPLETE message.

3) To verify that subsequently, after the suite of actions specified in test purposes 1 and 2, the MS after receiving a CONNECT message returns a CONNECT ACKNOWLEDGE message.

4) To verify that after the suite of actions specified in test purposes 1 and 2, the MS after receiving a CONNECT message attaches the user connection to the radio path. (This is checked by verifying that there is a point in time after transmission of the first L2 frame containing the (complete) CONNECT message, where the MS is sending appropriate speech or data frames whenever it does not have to transmit or acknowledge an I frame on layer 2 of the FACCH.)

26.10.3.1.3   Method of test

Specific PICS statements:

-    R-GSM Band (TSPC_Type_GSM_R_Band)

-    TSPC_AddInfo_Full_rate_version_1

PIXIT statements:

-    Way to indicate mobile originated alerting.

-.   Way to display the called number

Initial Conditions

    System Simulator:

        1 cell, default parameters.

    Mobile Station:

        The MS is in MM-state "idle, updated" with valid TMSI and CKSN.

Foreseen Final State of the MS

The MS is in MM state "idle updated".

Test procedure

If the MS is R-GSM capable, then this test shall be performed using R-GSM, otherwise this test shall be performed using E-GSM.

The following test is performed for one teleservice supported by the MS:

- A teleservice is selected that is supported by the MS; if the MS supports speech, the selected teleservice is speech. If necessary, the MS is configured for that teleservice.

- The MS is made to initiate a call. The call is established with late assignment. The release of the call is initiated by the MS.

Maximum Duration of Test

1 minute.

Expected Sequence

Step	Direction	Message	Comments
1	MS		The "called number" is entered
3	MS		
4	MS -> SS	CHANNEL REQUEST	Establishment cause is "originating call and the network does not set the NECI bit to 1".
5	SS -> MS	IMMEDIATE ASSIGNMENT	
6	MS -> SS	CM SERVICE REQUEST	Message is contained in SABM.
7	SS -> MS	AUTHENTICATION REQUEST	
8	MS -> SS	AUTHENTICATION RESPONSE	SRES specifies correct value.
9	SS -> MS	CIPHERING MODE COMMAND	SS starts deciphering after sending the message.
10	MS -> SS	CIPHERING MODE COMPLETE	Shall be sent enciphered. All following messages shall be sent enciphered.
11	SS		SS starts ciphering.
12	MS -> SS	SETUP	
13	SS -> MS	CALL PROCEEDING	
14	SS -> MS	ALERTING	
15	MS		Depending on the PICS, an alerting indication is given.
16	SS -> MS	ASSIGNMENT COMMAND	
17	MS -> SS	ASSIGNMENT COMPLETE	
18	SS -> MS	CONNECT	
19	MS -> SS	CONNECT ACKNOWLEDGE	
20	MS		The appropriate bearer channel is through connected in both directions.
21	MS		If the call is a data call, the TCH shall be through connected in both directions.
22	MS		The MS is made to release the call.
23	MS -> SS	DISCONNECT	
24	SS -> MS	RELEASE	
25	MS -> SS	RELEASE COMPLETE	
26	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents:

None.

26.10.3.2   E-GSM or R-GSM signalling / Structured procedures / emergency call

Emergency call establishment can be initiated by an MS whether location updating has been successful or not and whether a SIM is inserted into the MS or not; but only if the MS is equipped for speech.

This subclause is only applicable to an MS supporting speech.

26.10.3.2.1   Conformance requirement

1) The MS in the "idle, updated" state, as after a successful location update, after the number 112 has been entered by user, shall send a CHANNEL REQUEST message with correct establishment cause ("emergency call").

2) After assignment of a dedicated channel the first layer message sent by the MS on the assigned dedicated channel shall be a CM SERVICE REQUEST message specifying the correct IMEI and a non-available CKSN, with CM Service Type "emergency call establishment".

3) After cipher mode setting acceptance by the network, the MS shall send an EMERGENCY SETUP message.

4, 5) The emergency call shall be correctly established. The assignment procedure shall be correctly performed.

6) After receipt of a CONNECT ACKNOWLEDGE message during correct establishment of the emergency call the TCH shall be through connected in both directions if an appropriate TCH is available.

7) The call shall be cleared correctly.

Requirement Reference:

For conformance requirement 1 and 2:

3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.3.1.1;

3GPP TS 04.08 / 3GPP TS 24.008 subclauses 5.2.1 and 4.5.1.5;

3GPP TS 02.30 clause 4.

For conformance requirement 3:

3GPP TS 04.08 / 3GPP TS 24.008, subclause 5.2.1.2.

For conformance requirements 4 and 5:

3GPP TS 04.08 / 3GPP TS 24.008, subclause 5.2.1.1; and

3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.4.3.

For conformance requirement 6:

3GPP TS 04.08 / 3GPP TS 24.008, subclauses 5.2.1.1.6 and 5.1.3.

For conformance requirement 7:

3GPP TS 04.08 / 3GPP TS 24.008, subclause 5.4.

26.10.3.2.2 Test purpose

1) To verify that the MS in the "idle, no IMSI" state (no SIM inserted) when made to call the number 112, sends a CHANNEL REQUEST message with establishment cause "emergency call".

2) To verify that after assignment of a dedicated channel the first layer message sent by the MS on the assigned dedicated channel is a CM SERVICE REQUEST message specifying the correct CKSN and TMSI, with CM Service Type "emergency call establishment".

3) To verify that after receipt of a CM SERVICE ACCEPT message from the SS, the MS sends an EMERGENCY SETUP message.

4) To verify that subsequently, the SS having sent a CALL PROCEEDING message and then an ALERT message and having initiated the assignment procedure, the MS performs correctly that assignment procedure.

5) To verify subsequent correct performance of a connect procedure.

6) To verify that subsequently the MS has through connected the TCH in both directions.

7) To verify that the call is cleared correctly.

This is tested in the following case:

Structured procedures / emergency call / idle, no IMSI / accept case.

26.10.3.2.3 Method of test

Specific PICS statements:

- R-GSM Band (TSPC_Type_GSM_R_Band)

- TSPC_AddInfo_Full_rate_version_1

PIXIT statements:

-

Initial Conditions

System Simulator:

1 cell, default parameters except:

See Table 26.1

Mobile Station:

The MS is in MM-state "idle, no IMSI", no SIM inserted.

Foreseen Final State of the MS

The MS is in MM-state "idle, no IMSI", no SIM inserted.

Test procedure

If the MS is R-GSM capable, then this test shall be performed using R-GSM, otherwise this test shall be performed using E-GSM.

The MS is made to initiate an emergency call. The call is established without authentication, without ciphering, with early assignment. Having reached the active state, the call is cleared by the SS.

Maximum Duration of Test

1 minute.

Expected Sequence

Step	Direction	Message	Comments
1	MS		The "called number" 112 is entered
2	MS -> SS	CHANNEL REQUEST	Establishment cause is "emergency call".
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	MS -> SS	CM SERVICE REQUEST	Message is contained in SABM. The CM service type IE indicates "emergency call establishment". The mobile identity IE specifies the IMEI of the MS. The cipher key sequence number IE indicates "no key is available". The mobile station classmark IE is as specified by the manufacturer in a PICS/PIXIT statement.
5	SS -> MS	CM SERVICE ACCEPT	
6	MS -> SS	EMERGENCY SETUP	
7	SS -> MS	CALL PROCEEDING	
8	SS -> MS	ASSIGNMENT COMMAND	The rate of the channel is one indicated by the EMERGENCY SETUP message.
9	MS -> SS	ASSIGNMENT COMPLETE	
10	SS -> MS	ALERTING	
11	SS -> MS	CONNECT	
12	MS -> SS	CONNECT ACKNOWLEDGE	
13	MS		The TCH is through connected in both directions.
14	SS -> MS	DISCONNECT	
15	MS -> SS	RELEASE	
16	SS -> MS	RELEASE COMPLETE	
17	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents:

None.

26.10.3.3 Default contents of messages

Same as in subclause 26.9.7 except for the following.

ASSIGNMENT COMMAND

E-GSM:

Information element	Value/remark
Description of the first channel	describes non-hopping Bm+ACCHs or Lm+ACCHs as appropriate for the test ARFCN = 990
Power Command	
-	Chosen arbitrarily but within the range supported by the MS.
Frequency list	Omitted
Cell channel description	Omitted
Mode of the first channel	appropriate for one bearer capability chosen for the test
Description of the second channel	Omitted
Mode of the second channel	Omitted
Mobile allocation	Omitted
Starting time	Omitted
Cipher mode setting	Omitted

R-GSM:

Information element	Value/remark
Description of the first channel	describes non-hopping Bm+ACCHs or Lm+ACCHs as appropriate for the test ARFCN = 965
Power Command	
-	Chosen arbitrarily but within the range supported by the MS.
Frequency list	Omitted
Cell channel description	Omitted
Mode of the first channel	appropriate for one bearer capability chosen for the test
Description of the second channel	Omitted
Mode of the second channel	Omitted
Mobile allocation	Omitted
Starting time	Omitted
Cipher mode setting	Omitted

IMMEDIATE ASSIGNMENT

Information element	Value/remark
Page mode	Normal paging
Channel description	describes a valid SDCCH+SACCH in non-hopping mode ARFCN = 40
Request reference	
Random access information	As received from MS
N51, N32, N26	Corresponding to frame number of the CHANNEL REQUEST
Timing advance	Arbitrary
Mobile allocation	Empty (L=0)
Starting time	Omitted

26.10.4 E-GSM or R-GSM signalling / Default message contents

Default SYSTEM INFORMATION:

NOTE: SYSTEM INFORMATION 7, and SYSTEM INFORMATION 8 messages are not used.

SYSTEM INFORMATION type 1 message

Information elements	Value/Remark
Cell Channel Description	
For Cell A	
- Format identifier	Bit Map 0
- Cell Allocation ARFCN	Channel Numbers 20, 30, 50 and 70.
For Cell B	
- Format identifier	Bit Map 0
- Cell Allocation ARFCN	Channel Numbers 10, 12, 40, 60, 62, 63
RACH Control parameters	see below
SI1 Rest octets	see below

SYSTEM INFORMATION type 2 message

Information elements	Value/Remark
BCCH frequency list	
For cell A	
- Format identifier	bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 10, 20, 80, 90, 100, 110 and 120
- EXT-IND	This IE does not carry the complete BA
For cell B	
- Format identifier	bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 10, 36, 40, 114, 118
- EXT-IND	This IE does not carry the complete BA
NCC permitted	see below
RACH control parameters	see below

SYSTEM INFORMATION type 2bis message

E-GSM:

Information elements	Value/Remark
Extended BCCH frequency list	
For cell A	
- Format identifier	range 256
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	988, 990, 1 003
- EXT-IND	This IE does not carry the complete BA
For cell B	
- Format identifier	range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 1 005, 1 010, 1 015
- EXT-IND	This IE does not carry the complete BA
RACH control parameters	see below
SI 2bis rest octets	see below

R-GSM:

Information elements	Value/Remark
Extended BCCH frequency list	
For cell A	
- Format identifier	range 256
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	962, 965, 968, 980, 990
- EXT-IND	This IE does not carry the complete BA
For cell B	
- Format identifier	range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 969, 970, 972, 1005, 1010
- EXT-IND	This IE does not carry the complete BA
RACH control parameters	see below
SI 2bis rest octets	see below

SYSTEM INFORMATION type 3 message

Information elements	Value/Remark
Cell identity	see below
LAI	see below
Control channel description	see below
Cell options	see below
Cell Selection parameters	see below
RACH control parameter	see below
SI3 Rest octets	see below

SYSTEM INFORMATION type 4 message

Information elements	Value/Remark
LAI	see below
Cell selection parameters	see below
RACH control parameters	see below
CBCH Channel Description	see below
CBCH MA	see below
SI4 Rest octets	see below

SYSTEM INFORMATION type 5 message

Information elements	Value/Remark
BCCH frequency list	
For cell A	
- Format identifier	bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 10, 20, 80, 90, 100, 110 and 120
- EXT-IND	This IE does not carry the complete BA
For cell B	
- Format identifier	Bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 10, 36, 40, 114, 118
- EXT-IND	This IE does not carry the complete BA

SYSTEM INFORMATION type 5bis message

E-GSM:

Information elements	Value/Remark
Extension of BCCH frequency list description	
For cell A	
- Format identifier	Range 256
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 988, 990, 1 003
- EXT-IND	This IE does not carry the complete BA
For cell B	
- Format identifier	range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 1 005, 1 010, 1 015
- EXT-IND	This IE does not carry the complete BA

R-GSM:

Information elements	Value/Remark
Extension of BCCH frequency list description	
For cell A	
- Format identifier	Range 256
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 962, 965, 968, 980, 990
- EXT-IND	This IE does not carry the complete BA
For cell B	
- Format identifier	range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	Channels numbers 968, 970, 972, 1005, 1010
- EXT-IND	This IE does not carry the complete BA

SYSTEM INFORMATION type 6 message

Information elements	Value/Remark
Cell identity	see below
LAI	see below
Cell options	see below
NCC permitted	see below

Common contents of information elements in SYSTEM INFORMATION TYPE 1 to 6 messages

(CBCH) Channel Description	Not present
(CBCH) Mobile Allocation	Not present
Cell Identity	
- Cell Identity Value	0001H for cell A, 0002H for cell B
Cell Options	
- Power Control Indicator	Power Control Indicator is not set
- DTX Indicator	MS shall not use DTX
- Radio-Link-Time-out	8 SACCH blocks
Cell Selection Parameters	
- Cell-Reselect-Hysteresis	12 dB
- MX-TXPWR-MAX-CCH	Minimum level
- ACS	No addition cell parameters are present in SYSTEM INFORMATION messages 7 and 8.
- NECI	New establishment causes not supported
- RXLEV-ACCESS-MIN	Minimum level
Control Channel Description	
- Attach-Detach allowed	No Attach/Detach
- BS-AG-BLKS-RES	0 blocks reserved for access grant
- CCCH-CONF	1 basic physical channel used for CCCH, combined with SDCCHs
- BS-PA-MFRMS	5 multiframe periods for transmission of paging messages
- T3212 Time-out value	Infinite
L2 pseudo length	
- System information 1	21
- System information 2	22
- System information 2bis	21
- System information 3	18
- System information 4	12
Location Area Identification	
- Mobile Country Code	001 decimal
- Mobile Network Code	01 decimal
- Location Area Code	0001H
Message Type	
- System information 1	00011001
- System information 2	00011010
- System information 2bis	00000010
- System information 3	00011011
- System information 4	00011100
- System information 5	00011101
- System information 5bis	00000101
- System information 6	00011110
NCC Permitted	0000 0010
RACH Control Parameters	
- Max Retrans	Max 1 retrans
- Tx-integer	5 slots used
- Cell Barred for Access	Cell is not barred
- Call Reestablishment Allowed	Not allowed
- Access Control Class	Access is not barred
- Emergency Call allowed	Yes
SI 1 rest octets	Not used (all bits are set to spare)
SI 2 rest octets	Not used (all bits are set to spare)
SI 3 rest octets	Not used (all bits are set to spare)
SI 4 rest octets	Not used (all bits are set to spare)

Default settings for cell A:

Downlink input level	63 dBmicroVolt emf
Uplink output power	minimum supported by the MS's power class
Propagation profile	static
BCCH/CCCH carrier number	20

Default settings for cell B:

Downlink input level	53 dBmicroVolt emf
Uplink output power	minimum supported by the MS's power class
Propagation profile	static
BCCH/CCCH carrier number	10

Default message contents for other messages

For subclauses 26.10.1 to 26.10.2.5	same as in 26.6.14
For subclause 26.10.3	same as in 26.9.7

26.11 Multiband signalling

26.11.1 General considerations

This subclause applies only to Multiband mobile stations, as defined in 3GPP TS 02.06 subclause 3.2.1.

Conformance requirements of clause 26 fully apply to any Multiband MS in the whole supported band(s) of operation of the mobile station.

A Multiband mobile station has the functionality to perform handover, channel assignment, cell selection and re-selection between all its bands of operation within a PLMN.

A Multiband mobile station shall meet all requirements specified for each individual band. In addition it shall meet the extra functional requirements for multiband mobile stations.

The purpose of this subclause is to test these extra functional requirements for a multiband mobile station.

26.11.2 Multiband signalling / RR

26.11.2.1 Multiband signalling / RR / Immediate assignment procedure

To inform the multiband network of the MSs additional frequency and power capability, the multiband MS has to send a CLASSMARK CHANGE as soon as possible in a connection establishment.

26.11.2.1.1 Conformance requirement

Following a PAGING REQUEST message, the MS shall correctly set up an RR connection on a supported channel described in the IMMEDIATE ASSIGNMENT message. On the MS side, the procedure is terminated when the establishment of the main signalling link is confirmed. When the ES bit is set to 1 in the Classmark 1 or the Classmark 2 information element and the Early Sending Classmark Control bit is set to "high" in SI3 Rest Octets, then the MS shall send, on the first occasion, the CLASSMARK CHANGE message.

During a contention resolution procedure, if the last timeslot of the block containing a L2 UA frame occurs at time T, then the MS shall be ready to transmit the CLASSMARK CHANGE before T + 40 ms.

Reference(s)

3GPP TS 04.08 / 3GPP TS 44.018 subclauses 3.3.1.1.2 and 3.3.1.1.4.

3GPP TS 04.13 subclause 5.2.11.

3GPP TS 05.10 subclause 6.10.

26.11.2.1.2 Test purpose

To verify that the MS can correctly set up a dedicated control channel and that a multi band MS is able to perform early sending of CLASSMARK CHANGE.

To verify the performance requirement on early sending of the CLASSMARK CHANGE message.

26.11.2.1.3   Method of test

Initial Conditions

System Simulator:

For 450/900 MS:

1 cell.

CCCH-CONF is set to "1 basic physical channel used for CCCH not combined with SDCCHs".

BCCH carrier number 263.

For 480/900 MS:

1 cell.

CCCH-CONF is set to "1 basic physical channel used for CCCH not combined with SDCCHs".

BCCH carrier number 310.

For 450/1 800 MS:

1 cell.

CCCH-CONF is set to "1 basic physical channel used for CCCH not combined with SDCCHs".

BCCH carrier number 263.

For 480/1 800 MS:

1 cell.

CCCH-CONF is set to "1 basic physical channel used for CCCH not combined with SDCCHs".

BCCH carrier number 310.

For 900/1 800 MS:

1 cell.

CCCH-CONF is set to "1 basic physical channel used for CCCH not combined with SDCCHs".

BCCH carrier number 20.

For 710/1 900 MS, 750/1 900 MS:

1 cell.

CCCH-CONF is set to "1 basic physical channel used for CCCH not combined with SDCCHs".

BCCH carrier number 457.

For 850/1 900 MS:

1 cell.

CCCH-CONF is set to "1 basic physical channel used for CCCH not combined with SDCCHs".

BCCH carrier number 147.

Mobile Station:

The MS is in the "idle, updated" state, with a TMSI allocated.

Specific PICS statements:

- GSM 450 Band (TSPC_Type_GSM_450_Band)

- Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

- Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

- GSM 480 Band (TSPC_Type_GSM_480_Band)

- DCS 1800 band (TSPC_Type_DCS_Band)

- GSM 750 band (TSPC_Type_GSM_750_Band)

- GSM 710 band (TSPC_Type_GSM_710_Band)

PIXIT statements:

-

Foreseen Final State of the MS

"Idle, updated", with TMSI allocated.

Test Procedure

The test is performed twice, first time in the lower band (BCCH carrier number 20, 263, 310, 457 or 147) and second time in the upper band (BCCH carrier number 20 or 590).

The System Simulator pages the MS and after the MS has responded with a CHANNEL REQUEST message the SS assigns an SDCCH. The MS shall go to the correct channel and send a PAGING RESPONSE message followed by a CLASSMARK CHANGE message. Then the SS initiates RR-release by sending a CHANNEL RELEASE message.

Before the procedure is repeated, the SS is reconfigured to transmit BCCH carrier in the upper band of operation (ARFCN 20 or 590).

Maximum Duration of Test

6 seconds per value of the execution timer and 1 min for reconfiguring the SS.

Expected Sequence

This sequence is performed for execution counter k = 1 to 2.

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	Channel Type: SDCCH/8
4	MS -> SS	SABM (PAGING RESPONSE)	Shall be sent on the correct channel
5	SS -> MS	UA (PAGING RESPONSE)	
6	MS -> SS	CLASSMARK CHANGE	Shall be ready to transmit (see 3GPP TS 05.10 subclause 06.10) within 40 ms after the completion of step 4. Shall indicate the MS frequency and power capabilities Note: In this case 'ready to transmit' shall result in the actual transmission of the Classmark Change 51 frames later (51 * 4.62ms = 235.62 ms). Therefore receipt of the Classmark Change within 250ms of step 4 is required.
7	SS -> MS	CHANNEL RELEASE	

Specific Message Contents

For 450/900 MS:

IMMEDIATE ASSIGNMENT

As default except:

Information element	Value/remark
Channel description	
- Channel Type	SDCCH/8
- Timeslot number	Arbitrary but not zero
- Training sequence code	Arbitrary
- Hopping channel	Single RF
- Channel selector	k=1; ARFCN 263
	k=2; ARFCN 20
Mobile Allocation	empty

PAGING RESPONSE

Information element	Value/remark
Protocol Discriminator	RR management
Ciphering Key Sequence number	
- Key Sequence	Key sequence number previously allocated to MS, or "111" if no key is available
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 450 power capability
	k=2; GSM 900 power capability
Mobile Identity	
- odd/even	Even
- Type of identity	TMSI
- Identity digits	TMSI previously allocated to MS

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 450 power capability
	k=2; GSM 900 power capability
Additional MS Classmark information	
- Band 1 (P-GSM) supported	According to PICS statement
- Band 2 (E-GSM) supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
- GSM 400 Band (GSM 450) supported	According to PICS statement
- GSM400 Associated radio capability	Corresponding to GSM 400 band
- Associated radio capability 1	Corresponding to GSM 900 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band

For 480/900 MS:

IMMEDIATE ASSIGNMENT

As default except:

Information element	Value/remark
Channel description	
- Channel Type	SDCCH/8
- Timeslot number	Arbitrary but not zero
- Training sequence code	Arbitrary
- Hopping channel	Single RF
- Channel selector	k=1; ARFCN 310
	k=2; ARFCN 20
Mobile Allocation	empty

PAGING RESPONSE

Information element	Value/remark
Protocol Discriminator	RR management
Ciphering Key Sequence number	
- Key Sequence	Key sequence number previously allocated to MS, or "111" if no key is available
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 480 power capability
	k=2; GSM 900 power capability
Mobile Identity	
- odd/even	Even
- Type of identity	TMSI
- Identity digits	TMSI previously allocated to MS

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 480 power capability
	k=2; GSM 900 power capability
Additional MS Classmark information	
- Band 1 (P-GSM) supported	According to PICS statement
- Band 2 (E-GSM) supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
- GSM 400 Band (GSM 480) supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 480 band
- Associated radio capability 1	Corresponding to GSM 900 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band

For 450/1 800 MS:

IMMEDIATE ASSIGNMENT

As default except:

Information element	Value/remark
Channel description	
- Channel Type	SDCCH/8
- Timeslot number	Arbitrary but not zero
- Training sequence code	Arbitrary
- Hopping channel	Single RF
- Channel selector	k=1; ARFCN 263
	k=2; ARFCN 590
Mobile Allocation	empty

PAGING RESPONSE

Information element	Value/remark
Protocol Discriminator	RR management
Ciphering Key Sequence number	
- Key Sequence	Key sequence number previously allocated to MS, or "111" if no key is available
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 450 power capability
	k=2; DCS 1 800 power capability
Mobile Identity	
- odd/even	Even
- Type of identity	TMSI
- Identity digits	TMSI previously allocated to MS

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 450 power capability
	k=2; DCS 1 800 power capability
Additional MS Classmark information	
- Band 3 (DCS 1 800) supported	According to PICS statement
- GSM 400 Band (GSM 450) supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 450 band
- Associated radio capability 2	Corresponding to DCS 1 800 band

For 480/1 800 MS:

IMMEDIATE ASSIGNMENT

As default except:

Information element	Value/remark
Channel description	
- Channel Type	SDCCH/8
- Timeslot number	Arbitrary but not zero
- Training sequence code	Arbitrary
- Hopping channel	Single RF
- Channel selector	k=1; ARFCN 310
	k=2; ARFCN 590
Mobile Allocation	empty

PAGING RESPONSE

Information element	Value/remark
Protocol Discriminator	RR management
Ciphering Key Sequence number	
- Key Sequence	Key sequence number previously allocated to MS, or "111" if no key is available
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 480 power capability
	k=2; DCS 1 800 power capability
Mobile Identity	
- odd/even	Even
- Type of identity	TMSI
- Identity digits	TMSI previously allocated to MS

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 480 power capability
	k=2; DCS 1 800 power capability
Additional MS Classmark information	
- Band 3 (DCS 1 800) supported	According to PICS statement
- GSM 400 Band (GSM 480) supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 480 band
- Associated radio capability 2	Corresponding to DCS 1 800 band

For 900/1 800 MS:

IMMEDIATE ASSIGNMENT

As default except:

Information element	Value/remark
Channel description	
- Channel Type	SDCCH/8
- Timeslot number	Arbitrary but not zero
- Training sequence code	Arbitrary
- Hopping channel	Single RF
- Channel selector	k=1; ARFCN 20
	k=2; ARFCN 590
Mobile Allocation	empty

PAGING RESPONSE

Information element	Value/remark
Protocol Discriminator	RR management
Ciphering Key Sequence number	
- Key Sequence	Key sequence number previously allocated to MS, or "111" if no key is available
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 900 power capability
	k=2; DCS 1 800 power capability
Mobile Identity	
- odd/even	Even
- Type of identity	TMSI
- Identity digits	TMSI previously allocated to MS

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 900 power capability
	k=2; DCS 1 800 power capability
Additional MS Classmark information	
- Band 1 (P-GSM) supported	According to PICS statement
- Band 2 (E-GSM) supported	According to PICS statement
- Band 3 (DCS 1 800) supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
- Associated radio capability 1	Corresponding to GSM 900 band
- Associated radio capability 2	Corresponding to DCS 1 800 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band

For 710/1 900 MS, 750/1 900 MS:

IMMEDIATE ASSIGNMENT

As default except:

Information element	Value/remark
Channel description	
- Channel Type	SDCCH/8
- Timeslot number	Arbitrary but not zero
- Training sequence code	Arbitrary
- Hopping channel	Single RF
- Channel selector	k=1; ARFCN 457
	k=2; ARFCN 590
Mobile Allocation	Empty

PAGING RESPONSE

Information element	Value/remark
Protocol Discriminator	RR management
Ciphering Key Sequence number	
- Key Sequence	Key sequence number previously allocated to MS, or "111" if no key is available
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
	k=1; GSM 700 power capability
	k=2; PCS 1 900 power capability
Mobile Identity	
- odd/even	Even
- Type of identity	TMSI
- Identity digits	TMSI previously allocated to MS

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	Corresponding to the frequency band in use
	k=1; GSM 700 power capability
	k=2; GSM 1900 power capability
Additional MS Classmark information	
- GSM 700 Associated radio capability	Corresponding to GSM 700 band
- PCS 1 900 Associated radio capability	Corresponding to PCS 1 900 band

For 850/1 900 MS:

IMMEDIATE ASSIGNMENT

As default except:

Information element	Value/remark
Channel description	
- Channel Type	SDCCH/8
- Timeslot number	Arbitrary but not zero
- Training sequence code	Arbitrary
- Hopping channel	Single RF
- Channel selector	k=1; ARFCN 147
	k=2; ARFCN 590
Mobile Allocation	Empty

PAGING RESPONSE

Information element	Value/remark
Protocol Discriminator	RR management
Ciphering Key Sequence number	
- Key Sequence	Key sequence number previously allocated to MS, or "111" if no key is available
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use k=1; GSM 850 power capability k=2; DCS 1 900 power capability
Mobile Identity	
- odd/even	Even
- Type of identity	TMSI
- Identity digits	TMSI previously allocated to MS

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	Corresponding to the frequency band in use k=1; GSM 850 power capability k=2; DCS 1 900 power capability
Additional MS Classmark information	
- GSM 850 Associated radio capability	Corresponding to GSM 850 band
- PCS 1 900 Associated radio capability	Corresponding to PCS 1 900 band

26.11.2.2   Multiband signalling / RR / Handover

This subclause applies to any multiband mobile stations.

The purpose of this extra section is to test the handover where the target cell uses frequencies outside the frequency band of the serving cell.

26.11.2.2.1   Multiband signalling / RR / Handover / successful / active call / non-synchronized

26.11.2.2.1.1   Conformance requirements

The MS shall correctly apply the handover procedure in the non-synchronized case when a call is in progress and when handover is performed from a TCH/F without frequency hopping in one band towards a TCH/F without frequency hopping in another band.

When the MS releases a TCH or SDCCH and returns to idle mode, it shall, as quickly as possible, camp on the BCCH carrier of the cell whose channel has just been released, ie the BCCH carrier indicated in the HANDOVER COMMAND.

A multi band mobile station shall not consider a HANDOVER COMMAND as invalid because it indicates target channel frequencies that are all in a different frequency band to that of the ARFCN in the Cell Description IE.

References

   3GPP TS 04.08 / 3GPP TS 44.018 subclauses 3.4.4 and 9.1.15.

   3GPP TS 04.13 subclause 5.2.6.2.

   3GPP TS 05.08 subclause 6.7.1.

26.11.2.2.1.2 Test purpose

To test that when the MS is ordered to make a non-synchronized handover it continuously sends access bursts on the main DCCH (and optionally on the SACCH) until it receives a PHYSICAL INFORMATION message from the SS. To test that the MS correctly handles the Timing Advance IE in the PHYSICAL INFORMATION message. To test that the MS activates the new channel correctly and transmits the HANDOVER COMPLETE message without undue delay. To test that upon release of the TCH, the mobile camps on the BCCH carrier of the cell indicated in the HANDOVER COMMAND.

26.11.2.2.1.3 Method of test

Initial Conditions

For execution counter M =1, 2

System Simulator:

For 450/900 MS: 2 cells, A and B with same LAI, default parameters except:

> Cell A has:

>> BCCH ARFCN = 263

>> Cell Allocation = (259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291)

> Cell B has:

>> BCCH ARFCN = 20

>> Cell Allocation = (10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 75, 76, 108, 114)

The frame numbers of cells A and B shall be different by 100.

The timebase of cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

For 480/900 MS: 2 cells, A and B with same LAI, default parameters except:

> Cell A has:

>> BCCH ARFCN = 310

>> Cell Allocation = (306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338)

> Cell B has:

>> BCCH ARFCN = 20

>> Cell Allocation = (10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 75, 76, 108, 114)

The frame numbers of cells A and B shall be different by 100.

The timebase of cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

For 450/1 800 MS: 2 cells, A and B with same LAI, default parameters except:

> Cell A has:

>> BCCH ARFCN = 263

>> Cell Allocation = (259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291)

> Cell B has:

>> BCCH ARFCN = 764

>> Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844)

The frame numbers of cells A and B shall be different by 100.

The timebase of cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

For 480/1 800 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 310

Cell Allocation = (306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338)

Cell B has:

BCCH ARFCN = 764

Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844)

The frame numbers of cells A and B shall be different by 100.

The timebase of cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

For 900/1 800 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 20

Cell Allocation = (10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 75, 76, 108, 114)

Cell B has:

BCCH ARFCN = 764

Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844)

The frame numbers of cells A and B shall be different by 100.

The timebase of cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

For 710/1 900 MS, 750/1 900 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 457

Cell Allocation = (447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508)

Cell B has:

BCCH ARFCN = 764

Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 803, 804, 806)

The frame numbers of cells A and B shall be different by 100.

The timebase of cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

For 850/1 900 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 147

Cell Allocation = (137, 144, 147, 153, 161, 169, 172, 173, 179, 186, 193, 200, 201, 202, 203, 235, 241)

Cell B has:

BCCH ARFCN = 764

Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 803, 804, 806)

The frame numbers of cells A and B shall be different by 100.

The timebase of cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

Mobile Station:

> The MS is in the active state (U10) of a call on cell A. (for execution counter M = 1) and on cell B (for execution counter M=2).

For execution counter M = 3

System Simulator:

For 450/900 MS: 2 cells, A and B with different LAI, default parameters except:

> Cell A has:
>
>> BCCH ARFCN = 263
>>
>> Cell Allocation = (259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291)
>
> Cell B has:
>
>> LAI = 0003 H
>>
>> BCCH ARFCN = 20
>>
>> Cell Allocation = (10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 75, 76, 108, 114)
>
> The frame numbers of cells A and B shall be the same. The timebase of cells A and B shall be such that the edges of their timeslots are coincident at the antenna connector. ie cells A and B shall be fully synchronised.

For 480/900 MS: 2 cells, A and B with different LAI, default parameters except:

> Cell A has:
>
>> BCCH ARFCN = 310
>>
>> Cell Allocation = (306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338)
>
> Cell B has:
>
>> LAI = 0003 H
>>
>> BCCH ARFCN = 20
>>
>> Cell Allocation = (10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 75, 76, 108, 114)
>
> The frame numbers of cells A and B shall be the same. The timebase of cells A and B shall be such that the edges of their timeslots are coincident at the antenna connector. ie cells A and B shall be fully synchronised.

For 450/1 800 MS: 2 cells, A and B with different LAI, default parameters except:

> Cell A has:
>
>> BCCH ARFCN = 263
>>
>> Cell Allocation = (259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291)
>
> Cell B has:
>
>> LAI = 0003 H
>>
>> BCCH ARFCN = 764
>>
>> Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844)
>
> The frame numbers of cells A and B shall be the same. The timebase of cells A and B shall be such that the edges of their timeslots are coincident at the antenna connector. ie cells A and B shall be fully synchronised.

For 480/1 800 MS: 2 cells, A and B with different LAI, default parameters except:

Cell A has:

BCCH ARFCN = 310

Cell Allocation = (306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338)

Cell B has:

LAI = 0003 H

BCCH ARFCN = 764

Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844)

The frame numbers of cells A and B shall be the same. The timebase of cells A and B shall be such that the edges of their timeslots are coincident at the antenna connector. ie cells A and B shall be fully synchronised.

For 900/1 800 MS: 2 cells, A and B with different LAI, default parameters except:

Cell A has:

BCCH ARFCN = 20

Cell Allocation = (10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 75, 76, 108, 114)

Cell B has:

LAI = 0003 H

BCCH ARFCN = 764

Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844)

The frame numbers of cells A and B shall be the same. The timebase of cells A and B shall be such that the edges of their timeslots are coincident at the antenna connector. ie cells A and B shall be fully synchronised.

For 710/1 900 MS, 750/1 900 MS: 2 cells, A and B with different LAI, default parameters except:

Cell A has:

BCCH ARFCN = 457

Cell Allocation = (447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508)

Cell B has:

LAI = 0003 H

BCCH ARFCN = 764

Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 803, 804, 806)

The frame numbers of cells A and B shall be the same. The timebase of cells A and B shall be such that the edges of their timeslots are coincident at the antenna connector. ie cells A and B shall be fully synchronised.

For 850/1 900 MS: 2 cells, A and B with different LAI, default parameters except:

Cell A has:

BCCH ARFCN = 147

Cell Allocation = (137, 144, 147, 153, 161, 169, 172, 173, 179, 186, 193, 200, 201, 202, 203, 235, 241)

Cell B has:

LAI = 0003 H

BCCH ARFCN = 764

Cell Allocation = (739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 803, 804, 806)

The frame numbers of cells A and B shall be the same. The timebase of cells A and B shall be such that the edges of their timeslots are coincident at the antenna connector. ie cells A and B shall be fully synchronised.

Mobile Station:

The MS is succesfully registered in the LA of cell A and the MS is in the active state (U10) of a call on cell A.

Specific PICS statements:

- GSM 450 Band (TSPC_Type_GSM_450_Band)

- Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

- Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

- GSM 480 Band (TSPC_Type_GSM_480_Band)

- DCS 1800 band (TSPC_Type_DCS_Band)

- GSM 750 band (TSPC_Type_GSM_750_Band)

- GSM 710 band (TSPC_Type_GSM_710_Band)

PIXIT statements:

-

Foreseen Final State of the MS

For execution counter M = 1:

The active state (U10) of a call on cell B.

For execution counter M = 2:

The active state (U10) of a call on cell A.

For execution counter M = 3:

The MM idle state on cell A.

Test Procedure

The MS is in the active state (U10) of a call on cell A. The SS sends a HANDOVER COMMAND on the main DCCH. The MS shall begin to send access bursts on the new DCCH (and optionally on the SACCH) of the target cell. The SS observes the access bursts and after receiving n (n being randomly drawn between values according to table 26.6-2 of subclause 26.6.5) access bursts, the SS sends one PHYSICAL INFORMATION message with a Timing Advance as specified in table 26.6-1 of subclause 26.6.5. The MS shall activate the channel in sending and receiving mode. The MS shall establish a signalling link. The MS shall be ready to transmit a HANDOVER COMPLETE message, before "**x**" ms after the end of the PHYSICAL INFORMATION message, but not before a UA frame has been sent by the SS.

The term "ready to transmit" is defined in 3GPP TS 04.13. The value of "**x**" depends upon the target channel and is specified in the specific message contents section.

For execution counter M = 3, the call is then released and then the SS sends a CHANNEL RELEASE message. It is then checked for 2 minutes that the MS does not access Cell B.

Maximum Duration of Test

5 minutes, including 1 minute for any necessary operator actions.

Expected Sequence

This sequence is performed for an execution counter M = 1, 2, 3 for an MS which supports TCH/F.

Steps after step 7 are only performed for execution counter M = 3.

Step	Direction	Message	Comments
0	MS -> SS		The MS and SS are in the active state of a call on the channel described below.
1	SS -> MS	HANDOVER COMMAND	See Specific message contents
2	MS -> SS	HANDOVER ACCESS	Repeated on every burst of the uplink main DCCH (and optionally on the SACCH) until reception of PHYSICAL INFORMATION. Handover Reference as included in the HANDOVER COMMAND.
3	SS -> MS	PHYSICAL INFORMATION	Sent after reception of n HANDOVER ACCESS messages. See specific message contents.
4	MS -> SS	SABM	Sent without information field
5	SS -> MS	UA	
6	MS -> SS	HANDOVER COMPLETE	The message shall be ready to be transmitted before "x" ms after the completion of step 3.
7	MS -> SS		The MS and SS are in the active state of a call on the channel described below.
			steps 8-10 are only performed for execution counter M = 3.
8	SS -> MS	RELEASE COMPLETE	
9	SS -> MS	CHANNEL RELEASE	
10	SS		The SS checks that for a period of 2 minutes, the MS does not access cell B.

Specific Message Contents **For Mobiles Supporting Speech**

In case of 450/900 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	
Multiband reporting	0
For Cell A	
- Format notation	Bit map 0
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 3, 20, 29, 62, 84, 89, 99 and 119

For M = 1:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	20
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	263
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not Zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Synchronization Indication IE is not included.	
Channel Mode IE is not included.	
Frequency List after time	
- Frequency List	Allocates the following 12 frequencies (259, 261, 263, 265, 277, 279, 281, 283, 285, 287, 289, 291)

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing advance	Arbitrarily selected but different to default value.

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in hopping mode on cell A.

For M = 3:

Step 0: The MS and SS are using a full rate TCH in hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	263
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronisation Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronisation Indication	'Non synchronised'.
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

In case of 480/900 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Bit map 0
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 3, 20, 29, 62, 84, 89, 99 and 119

For M = 1:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	20
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	310
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not Zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Synchronization Indication IE is not included.	
Channel Mode IE is not included.	
Frequency List after time	
- Frequency List	Allocates the following 12 frequencies (306, 308, 310, 312, 324, 326, 328, 330, 332, 334, 336, 338)

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing advance	Arbitrarily selected but different to default value.

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in hopping mode on cell A.

For M = 3:

Step 0: The MS and SS are using a full rate TCH in hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	310
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronisation Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronisation Indication	'Non synchronised'.
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

In case of 450/1 800 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 810 and 870

For M = 1:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	263
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not Zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Synchronization Indication IE is not included.	
Channel Mode IE is not included.	
Frequency List after time	
- Frequency List	Allocates the following 12 frequencies (259, 261, 263, 265, 277, 279, 281, 283, 285, 287, 289, 291)

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing advance	Arbitrarily selected but different to default value.

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in hopping mode on cell A.

For M = 3:

Step 0: The MS and SS are using a full rate TCH in hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	263
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronisation Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronisation Indication	'Non synchronised'.
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

In case of 480/1 800 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 810 and 870

For M = 1:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	310
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not Zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Synchronization Indication IE is not included.	
Channel Mode IE is not included.	
Frequency List after time	
- Frequency List	Allocates the following 12 frequencies (306, 308, 310, 312, 324, 326, 328, 330, 332, 334, 336, 338)

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing advance	Arbitrarily selected but different to default value.

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in hopping mode on cell A.

For M = 3:

Step 0: The MS and SS are using a full rate TCH in hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	310
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronisation Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronisation Indication	'Non synchronised'.
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

In case of 900/1 800 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 810 and 870

For M = 1:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	20
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not Zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency Channel Sequence IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Synchronization Indication IE is not included.	
Channel Mode IE is not included.	
Frequency Channel Sequence after time	
- Frequency Channel Sequence	Allocates the following 12 frequencies (10, 17, 20, 26, 59, 66, 73, 74, 75, 76,108, 114)

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing advance	Arbitrarily selected but different to default value.

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in hopping mode on cell A.

For M = 3:

Step 0: The MS and SS are using a full rate TCH in hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	20
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily,but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronisation Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronisation Indication	'Non synchronised'.
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

In case of 710/1 900 MS, 750/1 900 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 800 and 810

For M = 1:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	457
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not Zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency Channel Sequence IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Synchronization Indication IE is not included.	
Channel Mode IE is not included.	
Frequency List after time	
- Frequency List	Allocates the following 12 frequencies (447, 454, 457, 463, 496, 498, 500, 501, 502, 503, 506, 508)

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing advance	Arbitrarily selected but different to default value.

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in hopping mode on cell A.

For M = 3:

Step 0: The MS and SS are using a full rate TCH in hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	457
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronisation Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronisation Indication	'Non synchronised'.
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

In case of 850/1 900 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 800 and 810

For M = 1:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	147
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not Zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency Channel Sequence IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Synchronization Indication IE is not included.	
Channel Mode IE is not included.	
Frequency List after time	
- Frequency List	Allocates the following 12 frequencies (137, 144, 147, 153, 186, 193, 200, 201, 202, 203, 235, 241)

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing advance	Arbitrarily selected but different to default value.

Step 6: x = 500.

Step 7: The MS and SS are using a full rate TCH in hopping mode on cell A.

For M = 3:

Step 0: The MS and SS are using a full rate TCH in hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	147
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronisation Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronisation Indication	'Non synchronised'.
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH in non hopping mode on cell B.

26.11.2.2.2 Multiband signalling / RR / Handover / layer 1 failure

26.11.2.2.2.1 Conformance requirements

During a handover from a channel in the lower band to a channel in the upper band, or the contrary, the MS shall correctly return to the old channel in the case of an handover failure caused by a layer 1 failure on the target cell.

References

3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.4.4.

26.11.2.2.2.2 Test purpose

To check that the MS correctly returns to the old channel in the case of an handover failure caused by a layer 1 failure on the target cell, if the origin is in the lower band and the target is in the upper band or the contrary.

26.11.2.2.2.3 Method of test

Initial Conditions

System Simulator:

For 450/900 MS: 2 cells, A and B with same LAI, default parameters except:

    Cell A has:

        BCCH ARFCN = 263.

    Cell B has:

      BCCH ARFCN = 20.

For 480/900 MS: 2 cells, A and B with same LAI, default parameters except:

    Cell A has:

        BCCH ARFCN = 310.

    Cell B has:

        BCCH ARFCN = 20.

For 450/1 800 MS: 2 cells, A and B with same LAI, default parameters except:

    Cell A has:

        BCCH ARFCN = 263.

    Cell B has:

        BCCH ARFCN = 764.

For 480/1 800 MS: 2 cells, A and B with same LAI, default parameters except:

    Cell A has:

        BCCH ARFCN = 310.

    Cell B has:

        BCCH ARFCN = 764.

For 900/1 800 MS: 2 cells, A and B with same LAI, default parameters except:

    Cell A has:

BCCH ARFCN = 20.

Cell B has:

BCCH ARFCN = 764.

For 710/1 900 MS, 750/1 900 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 457.

Cell B has:

BCCH ARFCN = 764.

For 850/1 900 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 147.

Cell B has:

BCCH ARFCN = 764.

Mobile Station:

The MS is in the active state (U10) of a call on cell A. Used power level is the maximum supported by the MS in the band in use.

Specific PICS statements:

- GSM 450 Band (TSPC_Type_GSM_450_Band)

- Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

- Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

- GSM 480 Band (TSPC_Type_GSM_480_Band)

- DCS 1800 band (TSPC_Type_DCS_Band)

- GSM 750 band (TSPC_Type_GSM_750_Band)

- GSM 710 band (TSPC_Type_GSM_710_Band)

PIXIT statements:

-

Foreseen Final State of the MS

The active state (U10) of a mobile call on cell A. Used power level is the maximum supported by the MS in the band in use.

Test Procedure

The MS is in the active state (U10) of a call on cell A. The SS sends a HANDOVER COMMAND on the main DCCH. The MS shall begin to send access bursts on the new DCCH (and optionally on the SACCH) to cell B. With the exception of normal BCCH signalling, the SS does not transmit anything on cell B (thus causing a time-out of T3124). The MS shall re-establish the old link on cell A and send a HANDOVER FAILURE within 3 seconds from the transmission of HANDOVER COMMAND, using the old Power Control Level.

Maximum Duration of Test

5 minutes, including 1 minute for any necessary operator actions.

Expected Sequence

Step	Direction	Message	Comments
0	SS	-	The SS records the old Power Control Level in the layer 1 header of the last SACCH message sent by the MS before step 1.
1	SS -> MS	HANDOVER COMMAND	Channel description: non-hopping, full rate. Synchronisation Indication: non synchronised.
2	MS -> SS	HANDOVER ACCESS	Several messages are sent, all with correct Handover References.
3	MS -> SS	HANDOVER FAILURE	Sent on old channel, RR cause value ="Abnormal release, unspecified", "Abnormal release, channel unacceptable", "Abnormal release, timer expired", "Abnormal release, no activity on the radio path" or "Protocol error unspecified".Shall be sent within 3 seconds from the transmission of HANDOVER COMMAND.
4	SS	-	The SS checks that the PowerControl Level reported in the layer 1 header of the SACCH message that is sent in the first SACCH multiframe following the SABM is the same as in step 0.

Specific Message Contents

For 450/900 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Bit map 0
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 3, 20, 29, 62, 84, 89, 99 and 119

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	20
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

For 480/900 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Bit map 0
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 3, 20, 29, 62, 84, 89, 99 and 119

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	20
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

For 450/1 800 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 810 and 870

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

For 480/1 800 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 810 and 870

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

For 900/1 800 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 810 and 870

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

For 710/1 900 MS, 750/1 900 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 800 and 810

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

For 850/1 900 MS:

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 764, 780, 800 and 810

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	764
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF.
- ARFCN	Chosen arbitrarily from Cell Allocation for cell B.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

26.11.2.2.3 Multiband signalling / RR / Handover / Multiband BCCH / successful / active call / non synchronized

26.11.2.2.3.1 Conformance requirements

This test relates to cells supporting frequencies in GSM 400, GSM 710, GSM 750, GSM 850, GSM 900, DCS 1800 and PCS 1900 bands.

The MS shall correctly apply the handover procedure in the non synchronized case when a call is in progress and when handover is performed from a TCH/F without frequency hopping in one band towards a TCH/F either with frequency hopping or not in another band.

References

3GPP TS 04.08 / 3GPP TS 44.018 subclauses 3.4.4 and 9.1.15.

3GPP TS 04.13 subclause 5.2.6.2.

3GPP TS 05.08 subclause 6.7.1.

26.11.2.2.3.2 Test purpose

To test that when the MS is ordered to make a non synchronized handover it sends continuously access bursts on the main DCCH (and optionally on the SACCH) until it receives a PHYSICAL INFORMATION message from the SS. To test that the MS correctly handles the Timing Advance IE in the PHYSICAL INFORMATION. To test that the MS activates the new channel correctly and transmits the HANDOVER COMPLETE message without undue delay.

26.11.2.2.3.3 Method of test

Initial Conditions

For execution counter M = 1, 2.

System Simulator:

For 450/900 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 263

GSM 450 frequencies: 259, 263, 267, 271, 275, 279, 283, 291.

GSM 900 frequencies: 10, 20, 34, 45, 52, 66, 74, 114.

Cell B has:

BCCH ARFCN = 268

GSM 450 frequencies: 260, 261, 268, 277, 281, 287, 288, 289.

GSM 900 frequencies: 14, 17, 32, 59, 73, 76, 87, 108.

For 480/900 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 310

GSM 480 frequencies: 306, 310, 314, 318, 322, 326, 332, 338.

GSM 900 frequencies: 10, 20, 34, 45, 52, 66, 74, 114.

Cell B has:

BCCH ARFCN = 315

GSM 480 frequencies: 307, 308, 315, 324, 328, 334, 335, 336.

GSM 900 frequencies: 14, 17, 32, 59, 73, 76, 87, 108.

For 450/1 800 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 263

GSM 450 frequencies: 259, 263, 267, 271, 275, 279, 283, 291.

DCS 1 800 frequencies: 739, 746, 756, 761, 771, 782, 798, 832.

Cell B has:

BCCH ARFCN = 268

GSM 450 frequencies: 260, 261, 268, 277, 281, 287, 288, 289.

DCS 1 800 frequencies: 743, 749, 758, 764, 779, 791, 829, 844.

For 480/1 800 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 310

GSM 480 frequencies: 306, 310, 314, 318, 322, 326, 332, 338.

DCS 1 800 frequencies: 739, 746, 756, 761, 771, 782, 798, 832.

Cell B has:

BCCH ARFCN = 315

GSM 480 frequencies: 307, 308, 315, 324, 328, 334, 335, 336.

DCS 1 800 frequencies: 743, 749, 758, 764, 779, 791, 829, 844.

For 900/1 800 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 20

GSM 900 frequencies: 10, 20, 34, 45, 52, 66, 74, 114.

DCS 1 800 frequencies: 739, 746, 756, 761, 771, 782, 798, 832.

Cell B has:

BCCH ARFCN = 32

GSM 900 frequencies: 14, 17, 32, 59, 73, 76, 87, 108.

DCS 1 800 frequencies: 743, 749, 758, 764, 779, 791, 829, 844.

For 710/1 900 MS, 750/1 900 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 457

GSM 710, GSM 750 frequencies: 447, 457, 471, 482, 489, 498, 501, 508.

PCS 1 900 frequencies: 739, 746, 756, 761, 771, 782, 798, 804.

Cell B has:

BCCH ARFCN = 469

GSM 710, GSM 750 frequencies: 451, 454, 469, 496, 500, 503, 505, 506.

PCS 1 900 frequencies: 743, 749, 758, 764, 779, 791, 803, 806.

For 850/1 900 MS: 2 cells, A and B with same LAI, default parameters except:

Cell A has:

BCCH ARFCN = 147

GSM 850 frequencies: 137, 147, 161, 172, 179, 193, 201, 241.

PCS 1 900 frequencies: 739, 746, 756, 761, 771, 782, 798, 804.

Cell B has:

BCCH ARFCN = 159

GSM 850 frequencies: 141, 144, 159, 186, 200, 203, 214, 235.

PCS 1 900 frequencies: 743, 749, 758, 764, 779, 791, 803, 806.

Mobile Station:

For execution counter M = 1, the MS is in the active state (U10) of a call on cell A, using a TCH in the lower band.

For execution counter M = 2, the MS is in the active state (U10) of a call on cell B, using a TCH in the upper band.

Specific PICS statements:

- GSM 450 Band (TSPC_Type_GSM_450_Band)

- Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

- Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

- GSM 480 Band (TSPC_Type_GSM_480_Band)

- DCS 1800 band (TSPC_Type_DCS_Band)

- GSM 750 band (TSPC_Type_GSM_750_Band)

- GSM 710 band (TSPC_Type_GSM_710_Band)

PIXIT statements:

-

Foreseen Final State of the MS

For execution counter M = 1

The active state (U10) of a call with a TCH in the upper band on cell B.

For execution counter M = 2

The active state (U10) of a call in hopping mode in the upper band on cell A.

Test Procedure

The MS is in the active state (U10) of a call. The SS sends a HANDOVER COMMAND on the main DCCH. The MS shall begin to send access bursts on the new DCCH (and optionally on the SACCH) of the target cell. The SS observes the access bursts and after receiving n (n being randomly drawn between values [10-20]) access bursts, the SS sends one PHYSICAL INFORMATION message with an arbitrary Timing Advance. The MS shall activate the channel in sending and receiving mode. The MS shall establish a signalling link. The MS shall be ready to transmit a HANDOVER COMPLETE message, before "**x**" ms after the end of the PHYSICAL INFORMATION message, but not before a UA frame has been sent by the SS.

The term "ready to transmit" is defined in 3GPP TS 04.13. The value of "**x**" depends upon the target channel and is specified in the specific message contents section.

Maximum Duration of Test

5 minutes, including 1 minute for any necessary operator actions.

Expected Sequence

This sequence is performed for an execution counter M = 1 and 2 for an MS which supports TCH/F.

Step	Direction	Message	Comments
0	MS -> SS		M = 1, The MS and SS are using a full rate TCH in lower band, in non hopping mode on cell A. M=2, the MS and SS are using a full rate TCH in upper band, in non hopping mode on cell B.
1	SS -> MS	HANDOVER COMMAND	See Specific message contents
2	MS -> SS	HANDOVER ACCESS	Repeated on every burst of the uplink main DCCH (and optionally on the SACCH) until reception of PHYSICAL INFORMATION. Handover Reference as included in the HANDOVER COMMAND.
3	SS -> MS	PHYSICAL INFORMATION	Sent after reception of n HANDOVER ACCESS messages. See specific message contents.
4	MS -> SS	SABM	Sent without information field
5	SS -> MS	UA	
6	MS -> SS	HANDOVER COMPLETE	The message shall be ready to be transmitted before "x" ms after the completion of step 3.
7	MS -> SS		The MS and SS are in the active state of a call.

For 450/900 MS:

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 268, 282, 284, 287, 290, 293
- EXT-IND	"The information element carries the complete BA"

For M = 1:

Step 0: The MS and SS are using a full rate TCH in the GSM 450 band, in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	268
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel.
- ARFCN	Chosen arbitrarily from the GSM 900 frequencies allocated to the cell.
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in the GSM 900 band, in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in the GSM 900 band, in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	263
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication.	
- Report Observed Time Difference	Shall not be included
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance
Cell Channel Description:	GSM 450 frequencies: 259, 263, 267, 271, 275, 279, 283, 291
	GSM 900 frequencies: 10, 20, 34, 45, 52, 66, 74, 114
Channel Mode IE is not included.	
Mobile Allocation	Indicates GSM 900 frequencies (10, 34, 45, 66, 114).

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing Advance	Arbitrarily selected but different to default value.

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in hopping mode in the GSM 900 band on cell A.

For 480/900 MS:

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 315, 329, 331, 334, 337, 340
- EXT-IND	"The information element carries the complete BA"

For M = 1:

Step 0: The MS and SS are using a full rate TCH in the GSM 480 band, in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	315
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel.
- ARFCN	Chosen arbitrarily from the GSM 900 frequencies allocated to the cell.
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in the GSM 900 band, in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in the GSM 900 band, in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	310
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication.	
- Report Observed Time Difference	Shall not be included
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance
Cell Channel Description:	GSM 480 frequencies: 306, 310, 314, 318, 322, 326, 332, 338
	GSM 900 frequencies: 10, 20, 34, 45, 52, 66, 74, 114
Channel Mode IE is not included.	
Mobile Allocation	Indicates GSM 900 frequencies (10, 34, 45, 66, 114).

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing Advance	Arbitrarily selected but different to default value.

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in hopping mode in the GSM 900 band on cell A.

For 450/1 800 MS:

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 268, 282, 284, 287, 290, 293
- EXT-IND	"The information element carries the complete BA"

For M = 1:

Step 0: The MS and SS are using a full rate TCH in the GSM 450 band, in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	268
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel.
- ARFCN	Chosen arbitrarily from the DCS 1 800 frequencies allocated to the cell.
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in the DCS 1 800 band, in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in the DCS 1 800 band, in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	263
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication.	
- Report Observed Time Difference	Shall not be included
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance
Cell Channel Description:	GSM 450 frequencies: 259, 263, 267, 271, 275, 279, 283, 291
	GSM 1800 frequencies: 739, 746, 756, 761, 771, 782, 798, 832
Channel Mode IE is not included.	
Mobile Allocation	Indicates DCS 1 800 frequencies (739, 756, 761, 782, 832).

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing Advance	Arbitrarily selected but different to default value.

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in hopping mode in the DCS band on cell A.

For 480/1 800 MS:

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 315, 329, 331, 334, 337, 340
- EXT-IND	"The information element carries the complete BA"

For M = 1:

Step 0: The MS and SS are using a full rate TCH in the GSM 480 band, in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	315
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel.
- ARFCN	Chosen arbitrarily from the DCS 1 800 frequencies allocated to the cell.
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in the DCS 1 800 band, in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in the DCS 1 800 band, in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	310
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication.	
- Report Observed Time Difference	Shall not be included
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance
Cell Channel Description	GSM 480 frequencies: 306, 310, 314, 318, 322, 326, 332, 338
	GSM 1800 frequencies: 739, 746, 756, 761, 771, 782, 798, 832
Channel Mode IE is not included.	
Mobile Allocation	Indicates DCS 1 800 frequencies (739, 756, 761, 782, 832).

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing Advance	Arbitrarily selected but different to default value.

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in hopping mode in the DCS band on cell A.

For 900/1 800 MS:

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 32, 80, 90, 100, 110 and 120
- EXT-IND	"The information element carries the complete BA"

For M = 1:

Step 0: The MS and SS are using a full rate TCH in the GSM 900 band, in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	32
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel.
- ARFCN	Chosen arbitrarily from the DCS 1 800 frequencies allocated to the cell.
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in the DCS 1 800 band, in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in the DCS 1 800 band, in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	20
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication.	
- Report Observed Time Difference	Shall not be included
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance
Cell channel description:	GSM 900 frequencies: 10, 20, 34, 45, 52, 66, 74, 114
	GSM 1800 frquencies: 739, 746, 756, 761, 771, 782, 798, 832
Channel Mode IE is not included.	
Mobile Allocation	Indicates DCS 1 800 frequencies (739, 756, 761, 782, 832).

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing Advance	Arbitrarily selected but different to default value.

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in hopping mode in the DCS band on cell A.

For 710/1 900 MS, 750/1 900 MS:

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	128 range
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 447, 457, 469, 480, 499, 504, 507 and 510
- EXT-IND	"The information element carries the complete BA"

For M = 1:

Step 0: The MS and SS are using a full rate TCH in the GSM 710 or GSM 750 band, in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	469
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel.
- ARFCN	Chosen arbitrarily from the PCS 1 900 frequencies allocated to the cell.
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in the PCS 1 900 band, in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in the PCS 1 900 band, in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	457
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication.	
- Report Observed Time Difference	Shall not be included
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance
Cell channel description:	GSM 710, GSM 750 frequencies: 447, 457, 471, 482, 489, 498, 501, 508 PCS 1 900 frquencies: 739, 746, 756, 761, 771, 782, 798, 804
Channel Mode IE is not included.	
Mobile Allocation	Indicates PCS 1 900 frequencies (739, 756, 761, 782, 804).

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing Advance	Arbitrarily selected but different to default value.

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in hopping mode in the PCS band on cell A.

For 850/1 900 MS:

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	128 range
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 137, 147, 159, 207, 217, 227, 237 and 247
- EXT-IND	"The information element carries the complete BA"

For M = 1:

Step 0: The MS and SS are using a full rate TCH in the GSM 850 band, in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	159
Channel description	
- Channel type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel.
- ARFCN	Chosen arbitrarily from the PCS 1 900 frequencies allocated to the cell.
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance.

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in the PCS 1 900 band, in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH in the PCS 1 900 band, in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	147
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Handover Reference	
- Value	Chosen arbitrarily from the range (0, 1..255)
Power command	
- Power Level	Arbitrarily chosen, but different to the one already in use and within the range supported by that type of MS.
Synchronization Indication.	
- Report Observed Time Difference	Shall not be included
- Synchronization Indication	"Non Synchronized".
- Normal Cell Indication	Ignore out of range timing advance
Cell channel description:	GSM 850 frequencies: 137, 147, 161, 172, 179, 193, 201, 241
	PCS 1 900 frquencies: 739, 746, 756, 761, 771, 782, 798, 804
Channel Mode IE is not included.	
Mobile Allocation	Indicates PCS 1 900 frequencies (739, 756, 761, 782, 804).

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except:	
Timing Advance	Arbitrarily selected but different to default value.

Step 6: x = 650 ms.

Step 7: The MS and SS are using a full rate TCH in hopping mode in the DCS band on cell A.

26.11.2.2.4   Multiband signalling / RR / Handover/ Multiband BCCH / Intracell Handover - Interband Assignment

In case of multi-band networks, an intracell change of channel can be requested by upper layers in order to change the channel type (Directed Retry from a channel belonging to one frequency band to a channel belonging to another frequency band), or it may be initiated by the RR-sublayer for an intra cell and inter-band handover for cells supporting GSM 400, GSM 710, GSM750, GSM 850, GSM 900 and DCS 1 800 frequencies. This change is performed using the channel assignment procedure.

26.11.2.2.4.1   Dedicated assignment / successful case

This test is only applicable to an MS supporting a TCH.

26.11.2.2.4.1.1   Conformance requirements

1. Upon receipt of the ASSIGNMENT COMMAND message, the mobile station initiates a local end release of link layer connections, disconnects the physical channels, commands the switching to the assigned channels and

initiates the establishment of lower layer connections (this includes the activation of the channels, their connection and the establishment of the main signalling links).

2. MM-messages and CM-messages using SAPI=0 sent from the mobile station to the network can be duplicated by the data link layer in the following case:

   - a channel change of dedicated channels is required (assignment or handover procedure) and the last layer 2 frame has not been acknowledged by the peer data link layer before the mobile station leaves the old channel;

   - in this case, the mobile station does not know whether the network has received the message correctly. Therefore, the mobile station has to send the message again after the new dedicated channel is established.

3. The MS shall establish the link with the power level specified in the ASSIGNMENT COMMAND message.

   - The MS shall confirm the power control level that it is currently employing in the uplink SACCH L1 header. The indicated value shall be the power control level actually used by the mobile for the last burst of the previous SACCH period.

4. The MS shall apply the hopping frequencies specified in ASSIGNMENT COMMAND message in the Mobile Allocation IE or the Frequency List IE at the time of accessing the new channel using the last received Cell Allocation.

5. After receipt of the ASSIGNMENT COMMAND the MS shall perform the assignment and return an ASSIGNMENT COMPLETE without undue delay.

References

1, 3, 5   3GPP TS 04.08 / 3GPP TS 44.018, subclause 3.4.3.

2.   3GPP TS 04.08 / 3GPP TS 44.018, subclause 3.1.4.3.

4.   3GPP TS 04.08 / 3GPP TS 44.018, subclause 3.4.3;
   3GPP TS 05.08, subclause 4.2.

6.   3GPP TS 04.13, subclause 5.2.4.

26.11.2.2.4.2   Test purpose

1. To verify that upon receipt of an ASSIGNMENT COMMAND, the MS switches to the channel defined in the ASSIGNMENT COMMAND, establishes the link and sends an ASSIGNMENT COMPLETE message. This is tested for an MS supporting TCH in the special cases of a transition.

NOTE: in all cases the old and the new channel assigned belong to different frequency bands.

   1.1 from non-hopping SDCCH in the lower band to hopping TCH/F in the upper band using a different timeslot;

   1.2 from hopping TCH/F in the upper band to non-hopping TCH/F in the lower band using a different timeslot;

   1.3 from non-hopping TCH/F in the lower band to hopping TCH/F in the upper band using a different timeslot.

   1.4 from hopping TCH/F in the upper band to hopping TCH/H in the lower band using a different timeslot; this test purpose is only applicable if the MS supports TCH/H;

   1.5 from hopping TCH/H in the lower band to non-hopping TCH/H in the upper band using a different timeslot; this test purpose is only applicable if the MS supports TCH/H;

   1.6 from non-hopping TCH/H in the upper band to hopping TCH/F in the lower band using a different timeslot; this test purpose is only applicable if the MS supports TCH/H.

2. To verify that an MS supporting TCH, having received an ASSIGNMENT COMMAND, is able in the case of frequency hopping to decode the Mobile Allocation and Frequency List IEs correctly and applies the specified frequencies using the correct Cell Allocation.

3. To verify that after receipt of the ASSIGNMENT COMMAND the MS returns an ASSIGNMENT COMPLETE without undue delay.

26.11.2.2.4.3 Method of test

Initial Conditions

System Simulator:

For 450/900 MS: 1 cell with GSM 450 and GSM 900 frequencies, using a BCCH in the GSM 450 band, default parameters except:

BCCH ARFCN = 263.

System Information 1 Cell Allocation = 259, 263, 267, 271, 275, 279, 283, 291, 10, 20, 34, 45, 52, 66, 76, 114.

For 480/900 MS: 1 cell with GSM 480 and GSM 900 frequencies, using a BCCH in the GSM 480 band, default parameters except:

BCCH ARFCN = 310.

System Information 1 Cell Allocation = 306, 310, 314, 318, 322, 326, 332, 338, 10, 20, 34, 45, 52, 66, 76, 114.

For 450/1 800 MS: 1 cell with GSM 450 and DCS 1 800 frequencies, using a BCCH in the GSM 450 band, default parameters except:

BCCH ARFCN = 263.

System Information 1 Cell Allocation = 259, 263, 267, 271, 275, 279, 283, 291, 739, 746, 756, 761, 771, 782, 798, 832.

For 480/1 800 MS: 1 cell with GSM 480 and DCS 1 800 frequencies, using a BCCH in the GSM 480 band, default parameters except:

BCCH ARFCN = 310.

System Information 1 Cell Allocation = 306, 310, 314, 318, 322, 326, 332, 338, 739, 746, 756, 761, 771, 782, 798, 832.

For 900/1 800 MS: 1 cell with GSM and DCS 1 800 frequencies, using a BCCH in the GSM band, default parameters except:

BCCH ARFCN = 20.

System Information 1 Cell Allocation = 10, 20, 34, 45, 52, 66, 76, 114, 739, 746, 756, 761, 771, 782, 798, 832.

For 710/1 900 MS, 750/1 900 MS: 1 cell with GSM and PCS 1 900 frequencies, using a BCCH in the GSM band, default parameters except:

BCCH ARFCN = 457.

System Information 1 Cell Allocation = 447, 457, 471, 482, 489, 498, 503, 508, 739, 746, 756, 761, 771, 782, 798, 804.

For 850/1 900 MS: 1 cell with GSM and PCS 1 900 frequencies, using a BCCH in the GSM band, default parameters except:

BCCH ARFCN = 147.

System Information 1 Cell Allocation = 137, 147, 161, 172, 179, 193, 203, 241, 739, 746, 756, 761, 771, 782, 798, 804.

NOTE: Cell Allocation IE broadcasted in SYSTEM INFORMATION 1 shall be coded with a format so that frequencies belonging to both lower and upper frequency band can be included. Format Identifier of Cell Channel Description IE will thus be Range 1024.

Mobile Station:

The MS is in the "idle, updated" state with a TMSI allocated.

Specific PICS statements:

- GSM 450 Band (TSPC_Type_GSM_450_Band)

- Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

- Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

- GSM 480 Band (TSPC_Type_GSM_480_Band)

- DCS 1800 band (TSPC_Type_DCS_Band)

- GSM 750 band (TSPC_Type_GSM_750_Band)

- GSM 710 band (TSPC_Type_GSM_710_Band)

- at least one half rate service (TSPC_AddInfo_HalfRate)

PIXIT statements:

-

Foreseen Final State of the MS

"Idle, updated", with TMSI allocated.

Test Procedure

The SS pages the MS and allocates an SDCCH. Then three channels are assigned with ASSIGNMENT COMMANDs messages. Each time the MS shall switch to the assigned channel, establish the link and send an ASSIGNMENT COMPLETE message.

For an MS not supporting TCH/H, the SS initiates the channel release procedure and the test ends here. For an MS supporting TCH/H, the channel assignment procedure is performed another three times, with half rate channels involved, and again it is checked that the MS correctly completes the procedures, before the SS initiates the channel release procedure.

Maximum Duration of Test

60 s.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	See specific message contents.
4	MS -> SS	PAGING RESPONSE	
5	SS -> MS	ASSIGNMENT COMMAND	See specific message contents.
6	MS -> SS	ASSIGNMENT COMPLETE	Sent on the correct channel after establishment of the main signalling link. This message shall be ready to be transmitted before 600 ms after the completion of step 5.
7	SS -> MS	ASSIGNMENT COMMAND	See specific message contents.
8	MS -> SS	ASSIGNMENT COMPLETE	Sent on the correct channel after establishment of the main signalling link. This message shall be ready to be transmitted before 600 ms after the completion of step 7.
9	SS -> MS	ASSIGNMENT COMMAND	See specific message contents.
10	MS -> SS	ASSIGNMENT COMPLETE	Sent on the correct channel after establishment of the main signalling link. This message shall be ready to be transmitted before 600 ms after the completion of step 9.
A			This test part is performed if the MS doesn't support TCH/H (see PICS)
A 11	SS -> MS	CHANNEL RELEASE	The main signalling link is released.
B			This test part is performed if the MS supports TCH/H (see PICS).
B11	SS -> MS	ASSIGNMENT COMMAND	See specific message contents.
B12	MS -> SS	ASSIGNMENT COMPLETE	Sent on the correct channel after establishment of the main signalling link. This message shall be ready to be transmitted before 600 ms after the completion of step 11.
B13	SS -> MS	ASSIGNMENT COMMAND	See specific message contents.
B14	MS -> SS	ASSIGNMENT COMPLETE	Sent on the correct channel after establishment of the main signalling link. This message shall be ready to be transmitted before 600 ms after the completion of step 13.
B15	SS -> MS	ASSIGNMENT COMMAND	See specific message contents.
B16	MS -> SS	ASSIGNMENT COMPLETE	Sent on the correct channel after establishment of the main signalling link. This message shall be ready to be transmitted before 600 ms after the completion of step 15.
B17	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents

For 450/900 MS:

Step 3

IMMEDIATE ASSIGNMENT:

As default message contents except Channel Description	
- Channel Type	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	N, chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM 450 part of the list.

Step 5

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+1) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Frequency list IE	Not included
Channel Mode	
- Mode	Signalling
Mobile Allocation	Indicates only GSM 900 frequencies of the CA (broadcast on the BCCH). (10, 20, 45, 52, 66, 114)
Starting Time	Not included

Step 7

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+2) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM 450 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Cell Channel Description	Range 1024 format encodes: (271, 275, 279, 283, 291, 10, 20, 34, 45, 52, 66, 76, 114.).
Mobile Allocation	Not included
Starting Time	Not included

Step 9

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+3) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF Hopping Channel
- MAIO	Chosen arbitrarily from the set (O, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63).
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Mobile Allocation	Indicates GSM 900 frequencies (10, 45, 114).
Starting Time	Not included

Step 11

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+4) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	Not included unless the Channel Mode allocated in step 9 is incompatible for a Half Rate Channel Type.
Frequency list IE	Not included
Cell Channel Description	Range 1024 format encodes: (259, 263, 267, 271, 275, 279, 283, 291, 10, 20, 34, 45, 52, 66, 76, 114).
Mobile Allocation	Indicates frequencies (259, 263, 267, 271, 275, 279, 283, 291).
Starting Time	Not included

Step 13

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+5) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the BCCH in the GSM 900 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	signalling
Frequency list IE	Not included
Cell Channel Description	Not included
Mobile Allocation	Not included
Starting Time	
	not included

Step 15

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type	TCH/F
TDMA offset	Chosen arbitrarily
- Timeslot Number	(N+6) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of GSM 450 frequencies in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Cell Channel Description	Not included
Frequency list IE	Use Range 128 to encode (259, 263, 267, 271, 275, 279, 283, 291).
Mobile Allocation	Not included
Starting Time	Not included

For 480/900 MS:

Step 3

IMMEDIATE ASSIGNMENT:

As default message contents except	
Channel Description	
- Channel Type	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	N, chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM 480 part of the list.

Step 5

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+1) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Frequency list IE	Not included
Channel Mode	
- Mode	Signalling
Mobile Allocation	Indicates only GSM 900 frequencies of the CA (broadcast on the BCCH). (10, 20, 45, 52, 66, 114)
Starting Time	Not included

Step 7

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+2) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM 480 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Cell Channel Description	Range 1024 format encodes: (318, 322, 326, 332, 338, 10, 20, 34, 45, 52, 66, 76, 114.).
Mobile Allocation	Not included
Starting Time	Not included

Step 9

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+3) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF Hopping Channel
- MAIO	Chosen arbitrarily from the set (O, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63).
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Mobile Allocation	Indicates GSM 900 frequencies (10, 45, 114).
Starting Time	Not included

Step 11

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+4) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	Not included unless the Channel Mode allocated in step 9 is incompatible for a Half Rate Channel Type.
Frequency list IE	Not included
Cell Channel Description	Range 1024 format encodes: (306, 310, 314, 318, 322, 326, 332, 338, 10, 20, 34, 45, 52, 66, 76, 114.).
Mobile Allocation	Indicates frequencies (306, 310, 314, 318, 322, 326, 332, 338).
Starting Time	Not included

Step 13

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+5) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the BCCH in the GSM 900 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	signalling
Frequency list IE	Not included
Cell Channel Description	Not included
Mobile Allocation	Not included
Starting Time	not included

Step 15

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type	TCH/F
TDMA offset	Chosen arbitrarily
- Timeslot Number	(N+6) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of GSM 480 frequencies in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Cell Channel Description	Not included
Frequency list IE	Uses Range 128 to encode (306, 310, 314, 318, 322, 326, 332, 338).
Mobile Allocation	Not included
Starting Time	Not included

For 450/1 800 MS:

Step 3

IMMEDIATE ASSIGNMENT:

As default message contents except	
Channel Description	
- Channel Type	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	N, chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM 450 part of the list.

Step 5

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+1) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Frequency list IE	Not included
Channel Mode	
- Mode	Signalling
Mobile Allocation	Indicates only DCS 1 800 frequencies of the CA (broadcast on the BCCH). (739, 746, 761, 771, 782, 832)
Starting Time	Not included

Step 7

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+2) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM 450 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Cell Channel Description	Range 1024 format encodes: (271, 275, 279, 283, 291, 739, 746, 756, 761, 771, 782, 798, 832.).
Mobile Allocation	Not included
Starting Time	Not included

Step 9

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+3) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF Hopping Channel
- MAIO	Chosen arbitrarily from the set (O, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63).
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Mobile Allocation	Indicates DCS frequencies (739, 761, 832).
Starting Time	Not included

Step 11

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+4) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	Not included unless the Channel Mode allocated in step 9 is incompatible for a Half Rate Channel Type.
Frequency list IE	Not included
Cell Channel Description	Range 1024 format encodes: (259, 263, 267, 271, 275, 279, 283, 291, 739, 746, 756, 761, 771, 782, 798, 832.).
Mobile Allocation	Indicates frequencies (259, 263, 267, 271, 275, 279, 283, 291).
Starting Time	Not included

Step 13

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+5) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the BCCH in the DCS 1 800 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	signalling
Frequency list IE	Not included
Cell Channel Description	Not included
Mobile Allocation	Not included
Starting Time	
	not included

Step 15

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type	TCH/F
TDMA offset	Chosen arbitrarily
- Timeslot Number	(N+6) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of GSM 450 frequencies in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Cell Channel Description	Not included
Frequency list IE	Use Range 128 to encode (259, 263, 267, 271, 275, 279, 283, 291).
Mobile Allocation	Not included
Starting Time	Not included

For 480/1 800 MS:

Step 3

IMMEDIATE ASSIGNMENT:

As default message contents except	
Channel Description	
- Channel Type	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	N, chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM 480 part of the list.

Step 5

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+1) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Frequency list IE	Not included
Channel Mode	
- Mode	Signalling
Mobile Allocation	Indicates only DCS 1 800 frequencies of the CA (broadcast on the BCCH). (739, 746, 761, 771, 782, 832)
Starting Time	Not included

Step 7

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+2) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM 480 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Cell Channel Description	Range 1024 format encodes: (318, 322, 326, 332, 338, 739, 746, 756, 761, 771, 782, 798, 832.).
Mobile Allocation	Not included
Starting Time	Not included

Step 9

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+3) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF Hopping Channel
- MAIO	Chosen arbitrarily from the set (O, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63).
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Mobile Allocation	Indicates DCS frequencies (739, 761, 832).
Starting Time	Not included

Step 11

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+4) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	Not included unless the Channel Mode allocated in step 9 is incompatible for a Half Rate Channel Type.
Frequency list IE	Not included
Cell Channel Description	Range 1024 format encodes: (306, 310, 314, 318, 322, 326, 332, 338, 739, 746, 756, 761, 771, 782, 798, 832.).
Mobile Allocation	Indicates frequencies (306, 310, 314, 318, 322, 326, 332, 338).
Starting Time	Not included

Step 13

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+5) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the BCCH in the DCS 1 800 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	signalling
Frequency list IE	Not included
Cell Channel Description	Not included
Mobile Allocation	Not included
Starting Time	
	not included

Step 15

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type	TCH/F
TDMA offset	Chosen arbitrarily
- Timeslot Number	(N+6) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of GSM 480 frequencies in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Cell Channel Description	Not included
Frequency list IE	Use Range 128 to encode (306, 310, 314, 318, 322, 326, 332, 338).
Mobile Allocation	Not included
Starting Time	Not included

For 900/1 800 MS:

Step 3

IMMEDIATE ASSIGNMENT:

As default message contents except	
Channel Description	
- Channel Type	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	N, chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM part of the list.

Step 5

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+1) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Frequency list IE	Not included
Channel Mode	
- Mode	Signalling
Mobile Allocation	Indicates only DCS 1 800 frequencies of the CA (broadcast on the BCCH). (739, 746, 761, 771, 782, 832)
Starting Time	Not included

Step 7

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+2) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Cell Channel Description	Range 1024 format encodes: (45, 52, 66, 76, 114, 739, 746, 756, 761, 771, 782, 798, 832.).
Mobile Allocation	Not included
Starting Time	Not included

Step 9

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+3) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF Hopping Channel
- MAIO	Chosen arbitrarily from the set (O, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63).
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Mobile Allocation	Indicates DCS frequencies (739, 761, 832).
Starting Time	Not included

Step 11

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+4) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	Not included unless the Channel Mode allocated in step 9 is incompatible for a Half Rate Channel Type.
Frequency list IE	Not included
Cell Channel Description	Range 1024 format encodes: (10, 20, 34, 45, 52, 66, 76, 114, 739, 746, 756, 761, 771, 782, 798, 832.).
Mobile Allocation	Indicates frequencies (10, 20, 34, 45, 52, 66, 76, 114).
Starting Time	Not included

Step 13

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+5) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the BCCH in the DCS 1 800 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	signalling
Frequency list IE	Not included
Cell Channel Description	Not included
Mobile Allocation	Not included
Starting Time	not included

Step 15

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type	TCH/F
TDMA offset	Chosen arbitrarily
- Timeslot Number	(N+6) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of GSM frequencies in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Cell Channel Description	Not included
Frequency list IE	Uses Bitmap 0 to indicate (10, 20, 34, 45, 52, 66, 76, 114).
Mobile Allocation	Not included
Starting Time	Not included

For 710/1 900 MS, 750/1 900 MS:

Step 3

IMMEDIATE ASSIGNMENT:

As default message contents except	
Channel Description	
- Channel Type	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	N, chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM part of the list.

Step 5

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+1) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Frequency list IE	Not included
Channel Mode	
- Mode	Signalling
Mobile Allocation	Indicates only PCS 1 900 frequencies of the CA (broadcast on the BCCH). (739, 746, 761, 771, 782, 804)
Starting Time	Not included

Step 7

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+2) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Cell Channel Description	Range 1024 format encodes: (482, 489, 498, 503, 508, 739, 746, 756, 761, 771, 782, 798, 804).
Mobile Allocation	Not included
Starting Time	Not included

Step 9

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+3) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF Hopping Channel
- MAIO	Chosen arbitrarily from the set (O, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63).
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Mobile Allocation	Indicates PCS frequencies (739, 761, 804).
Starting Time	Not included

Step 11

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+4) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	Not included unless the Channel Mode allocated in step 9 is incompatible for a Half Rate Channel Type.
Frequency list IE	Not included
Cell Channel Description	Range 1024 format encodes: (447, 457, 471, 482, 489, 498, 503, 508, 739, 746, 756, 761, 771, 782, 798, 804).
Mobile Allocation	Indicates frequencies (447, 457, 471, 482, 489, 498, 503, 508).
Starting Time	Not included

Step 13

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+5) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the BCCH in the PCS 1 900 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	Signalling
Frequency list IE	Not included
Cell Channel Description	Not included
Mobile Allocation	Not included
Starting Time	
	not included

Step 15

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type	TCH/F
TDMA offset	Chosen arbitrarily
- Timeslot Number	(N+6) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of GSM frequencies in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Cell Channel Description	Not included
Frequency list IE	Uses 128 range to indicate (447, 457, 471, 482, 489, 498, 503, 508).
Mobile Allocation	Not included
Starting Time	Not included

For 850/1 900 MS:

Step 3

IMMEDIATE ASSIGNMENT:

As default message contents except	
Channel Description	
- Channel Type	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	N, chosen arbitrarily
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM part of the list.

Step 5

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+1) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Frequency list IE	Not included
Channel Mode	
- Mode	Signalling
Mobile Allocation	Indicates only PCS 1 900 frequencies of the CA (broadcast on the BCCH). (739, 746, 761, 771, 782, 804)
Starting Time	Not included

Step 7

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+2) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the common BCCH in the GSM part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Cell Channel Description	Range 1024 format encodes: (172, 179, 193, 203, 241, 739, 746, 756, 761, 771, 782, 798, 804).
Mobile Allocation	Not included
Starting Time	Not included

Step 9

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	(N+3) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF Hopping Channel
- MAIO	Chosen arbitrarily from the set (O, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63).
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Frequency list IE	Not Included
Mobile Allocation	Indicates PCS frequencies (739, 761, 804).
Starting Time	Not included

Step 11

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+4) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	Not included unless the Channel Mode allocated in step 9 is incompatible for a Half Rate Channel Type.
Frequency list IE	Not included
Cell Channel Description	Range 1024 format encodes: (137, 147, 161, 172, 179, 193, 203, 241, 739, 746, 756, 761, 771, 782, 798, 804).
Mobile Allocation	Indicates frequencies (137, 147, 161, 172, 179, 193, 203, 241).
Starting Time	Not included

Step 13

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type and TDMA offset	TCH/H
- Timeslot Number	(N+5) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	Single RF Channel
- ARFCN	chosen arbitrarily from CA of the BCCH in the PCS 1 900 part of the list.
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	Signalling
Frequency list IE	Not included
Cell Channel Description	Not included
Mobile Allocation	Not included
Starting Time	
	not included

Step 15

ASSIGNMENT COMMAND:

Channel Description	
- Channel Type	TCH/F
TDMA offset	Chosen arbitrarily
- Timeslot Number	(N+6) mod 8
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of GSM frequencies in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1 to 63)
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Cell Channel Description	Not included
Frequency list IE	Uses 128 range to indicate (137, 147, 161, 172, 179, 193, 203, 241).
Mobile Allocation	Not included
Starting Time	Not included

26.11.2.3   Multiband signalling / RR / Measurement reporting

This test applies to any multiband MSs supporting simultaneous multiband operation.

26.11.2.3.1   Conformance requirements

The MS shall continuously send MEASUREMENT REPORT messages on every SACCH blocks and the measurement valid indication shall be set to valid (0) within the second block at the latest. After 20 s the values in the MEASUREMENT REPORT message shall contain measurement results for up to the 6 strongest BCCH carriers among those with known and allowed NCC part of BSIC on which the mobile is asked to report. For a multi band MS the number of neighbour cells, for each frequency band supported, which shall be included is indicated by the parameter MULTIBAND_REPORTING.

References

3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.4.1.2.

3GPP TS 05.08 subclause 8.4.

26.11.2.3.2   Test purpose

To test that, when the SS gives information about neighbouring cells, the MS reports the appropriate results and correctly orders the BA list made from System Information 5 and System Information 5ter.

26.11.2.3.3   Method of test

Initial Conditions

System Simulator:

For 450/900 MS: 8 cells with the following settings:

Transmitter	Level	NCC	BCC	ARFCN	Cell identity
Serving, S1	-60	1	3	259	0001H
Neighbour, N1	-85	1	5	002	0002H
Neighbour, N2	-79	1	7	261	0003H
Neighbour, N3	-75	1	1	263	0004H
Neighbour, N4	-55	1	3	088	0005H
Neighbour, N5	-50	1	5	274	0006H
Neighbour, N6	-45	1	7	114	0007H
Neighbour, N7	-40	1	1	278	0008H

For 480/900 MS: 8 cells with the following settings:

Transmitter	Level	NCC	BCC	ARFCN	Cell identity
Serving, S1	-60	1	3	306	0001H
Neighbour, N1	-85	1	5	002	0002H
Neighbour, N2	-79	1	7	308	0003H
Neighbour, N3	-75	1	1	310	0004H
Neighbour, N4	-55	1	3	088	0005H
Neighbour, N5	-50	1	5	321	0006H
Neighbour, N6	-45	1	7	114	0007H
Neighbour, N7	-40	1	1	325	0008H

For 450/1 800 MS: 8 cells with the following settings:

Transmitter	Level	NCC	BCC	ARFCN	Cell identity
Serving, S1	-60	1	3	259	0001H
Neighbour, N1	-85	1	5	520	0002H
Neighbour, N2	-79	1	7	261	0003H
Neighbour, N3	-75	1	1	263	0004H
Neighbour, N4	-55	1	3	780	0005H
Neighbour, N5	-50	1	5	274	0006H
Neighbour, N6	-45	1	7	880	0007H
Neighbour, N7	-40	1	1	278	0008H

For 480/1 800 MS: 8 cells with the following settings:

Transmitter	Level	NCC	BCC	ARFCN	Cell identity
Serving, S1	-60	1	3	306	0001H
Neighbour, N1	-85	1	5	520	0002H
Neighbour, N2	-79	1	7	308	0003H
Neighbour, N3	-75	1	1	310	0004H
Neighbour, N4	-55	1	3	780	0005H
Neighbour, N5	-50	1	5	321	0006H
Neighbour, N6	-45	1	7	880	0007H
Neighbour, N7	-40	1	1	325	0008H

For 900/1 800 MS: 8 cells with the following settings:

Transmitter	Level	NCC	BCC	ARFCN	Cell Identity
Serving, S1	-60	1	3	002	0001H
Neighbour, N1	-85	1	5	520	0002H
Neighbour, N2	-79	1	7	014	0003H
Neighbour, N3	-75	1	1	020	0004H
Neighbour, N4	-55	1	3	780	0005H
Neighbour, N5	-50	1	5	032	0006H
Neighbour, N6	-45	1	7	880	0007H
Neighbour, N7	-40	1	1	044	0008H

For 710/1 900 MS, 750/1 900 MS: 8 cells with the following settings:

Transmitter	Level	NCC	BCC	ARFCN	Cell Identity
Serving, S1	-60	1	3	439	0001H
Neighbour, N1	-85	1	5	520	0002H
Neighbour, N2	-79	1	7	451	0003H
Neighbour, N3	-75	1	1	457	0004H
Neighbour, N4	-55	1	3	780	0005H
Neighbour, N5	-50	1	5	469	0006H
Neighbour, N6	-45	1	7	805	0007H
Neighbour, N7	-40	1	1	481	0008H

For 850/1 900 MS: 8 cells with the following settings:

Transmitter	Level	NCC	BCC	ARFCN	Cell Identity
Serving, S1	-60	1	3	129	0001H
Neighbour, N1	-85	1	5	520	0002H
Neighbour, N2	-79	1	7	141	0003H
Neighbour, N3	-75	1	1	147	0004H
Neighbour, N4	-55	1	3	780	0005H
Neighbour, N5	-50	1	5	159	0006H
Neighbour, N6	-45	1	7	805	0007H
Neighbour, N7	-40	1	1	171	0008H

With the exception of the Cell Allocation, the rest of the parameters for all eight cells are the same as the default settings and default SYSTEM INFORMATION TYPE 1, 2 and 4 message contents for cell A. The Cell Allocation for

the serving cell is the same as the default setting for cell A. The Cell Allocations for the neighbour cells need have only one entry, consisting of the ARFCN of that cell's BCCH.

Mobile Station:

The MS is in the active state of a call (U10).

Specific PICS statements:

- GSM 450 Band (TSPC_Type_GSM_450_Band)

- Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

- Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

- GSM 480 Band (TSPC_Type_GSM_480_Band)

- DCS 1800 band (TSPC_Type_DCS_Band)

- GSM 750 band (TSPC_Type_GSM_750_Band)

- GSM 710 band (TSPC_Type_GSM_710_Band)

PIXIT statements:

-

Foreseen Final State of the MS

Active state of a call (U10).

Test Procedure

This test procedure is performed three times.

With the MS having a call in progress, the SS sends SYSTEM INFORMATION TYPE 5, 5ter & 6 on the SACCH. All 8 of the BCCHs "on air" are indicated in the BA. The MS shall send MEASUREMENT REPORTs back to the SS, and it shall be indicated in these that measurement results for the 6 strongest carriers, on which the mobile is asked to report (indicated by the parameter MULTIBAND_REPORTING), have been obtained.

Maximum Duration of Test

5 minutes, including 1 minute for any necessary operator actions.

Expected Sequence

This sequence is performed for execution counter, k = 1, 2, 3.

Since SYSTEM INFORMATION TYPE 5, SYSTEM INFORMATION TYPE 5ter, SYSTEM INFORMATION TYPE 6 and MEASUREMENT REPORT are sent continuously, a table is not applicable in this test. The interval between 2 successive Layer 2 frames containing MEASUREMENT REPORTs shall not exceed one Layer 2 frame.

Specific Message Contents

For 450/900 MS:

SYSTEM INFORMATION TYPE 2ter:

Information Element	value/remark
As defaults except: Neighbour Cells Description 2 Multiband Reporting	k=1, 3: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell. k=2: Normal reporting of six strongest cells, irrespective of the band used.

SYSTEM INFORMATION TYPE 3:

Information Element	value/remark
as default except:	SI 3 rest octets
- SI 2ter indicator	System Information 2ter is available
- Early Classmark Sending Control	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 5:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5.
Neighbour Cells Description	
- Format Identifier	k=1, 2: Range 128
	k=3: Bit map 0
- BCCH Allocation Sequence	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 261, 263, 274, 278
	k=3: ARFCN 2, 88, 114
- EXT IND	Information Element carries the complete BA.

SYSTEM INFORMATION TYPE 5ter:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5ter.
- Neighbour Cells Description 2	
- Multiband reporting	k=1, 3: Normal reporting of six strongest cells, irrespective of the band used
	k=2: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell.
- Format notation	Range 512
- BA_IND	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 2, 88, 114
	k=3: ARFCN 261, 263, 274, 278

MEASUREMENT REPORT:

Information Element	value/remark
Protocol Discriminator	RR Management
Transaction Identifier	0000
Message Type	MEASUREMENT REPORT
Measurement Results	
BA-used	1
DTX-used	DTX was not used
RXLEV-FULL-SERVING-CELL	See note 1
RXLEV-SUB-SERVING-CELL	See note 1
MEAS-VALID	See note 3
RXQUAL-FULL-SERVING-CELL	See note 1
RXQUAL-SUB-SERVING-CELL	See note 1
NO-NCELL-M	6 neighbour cell measurement results
RXLEV-NCELL-1	See note 1
BCCH-FREQ-NCELL-1	See note 2
BSIC-NCELL-1	Corresponds to that of BCCH-FREQ-NCELL-1
RXLEV-NCELL-2	See note 1
BCCH-FREQ-NCELL-2	See note 2
BSIC-NCELL-2	Corresponds to that of BCCH-FREQ-NCELL-2
RXLEV-NCELL-3	See note 1
BCCH-FREQ-NCELL-3	See note 2
BSIC-NCELL-3	Corresponds to that of BCCH-FREQ-NCELL-3
RXLEV-NCELL-4	See note 1
BCCH-FREQ-NCELL-4	See note 2
BSIC-NCELL-4	Corresponds to that of BCCH-FREQ-NCELL-4
RXLEV-NCELL-5	See note 1
BCCH-FREQ-NCELL-5	See note 2
BSIC-NCELL-5	Corresponds to that of BCCH-FREQ-NCELL-5
RXLEV-NCELL-6	See note 1
BCCH-FREQ-NCELL-6	See note 2
BSIC-NCELL-6	Corresponds to that of BCCH-FREQ-NCELL-6

NOTE 1:   These actual values are not checked.
NOTE 2:   k=1; report on ARFCNs 261, 263, 274, 278, 88, 114
        ie: BSIC-NCELL values of 0, 1, 2, 3, 5 and 6 but not 4
        k=2; report on ARFCNs 263, 274, 278, 2, 88, 114
        ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
        k=3; report on ARFCNs 88, 114, 261, 263, 274, 278
        ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
NOTE 3: The Measurement Valid Indication shall be set to valid within the second SACCH block at the latest.	

For 480/900 MS:

SYSTEM INFORMATION TYPE 2ter:

Information Element	value/remark
As defaults except: Neighbour Cells Description 2 Multiband Reporting	 k=1, 3: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell. k=2: Normal reporting of six strongest cells, irrespective of the band used.

SYSTEM INFORMATION TYPE 3:

Information Element	value/remark

as default except:
  - SI 2ter indicator
  - Early Classmark Sending Control
	SI 3 rest octets
	System Information 2ter is available
	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 5:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5.
Neighbour Cells Description	
- Format Identifier	k=1, 2: Range 128
	k=3: Bit map 0
- BCCH Allocation Sequence	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 308, 310, 321, 325
	k=3: ARFCN 2, 88, 114
- EXT IND	Information Element carries the complete BA.

SYSTEM INFORMATION TYPE 5ter:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5ter.
- Neighbour Cells Description 2	
- Multiband reporting	k=1, 3: Normal reporting of six strongest cells, irrespective of the band used
	k=2: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell.
- Format notation	Range 512
- BA_IND	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 2, 88, 114
	k=3: ARFCN 308, 310, 321, 325

MEASUREMENT REPORT:

Information Element	value/remark
Protocol Discriminator	RR Management
Transaction Identifier	0000
Message Type	MEASUREMENT REPORT
Measurement Results	
BA-used	1
DTX-used	DTX was not used
RXLEV-FULL-SERVING-CELL	See note 1
RXLEV-SUB-SERVING-CELL	See note 1
MEAS-VALID	See note 3
RXQUAL-FULL-SERVING-CELL	See note 1
RXQUAL-SUB-SERVING-CELL	See note 1
NO-NCELL-M	6 neighbour cell measurement results
RXLEV-NCELL-1	See note 1
BCCH-FREQ-NCELL-1	See note 2
BSIC-NCELL-1	Corresponds to that of BCCH-FREQ-NCELL-1
RXLEV-NCELL-2	See note 1
BCCH-FREQ-NCELL-2	See note 2
BSIC-NCELL-2	Corresponds to that of BCCH-FREQ-NCELL-2
RXLEV-NCELL-3	See note 1
BCCH-FREQ-NCELL-3	See note 2
BSIC-NCELL-3	Corresponds to that of BCCH-FREQ-NCELL-3
RXLEV-NCELL-4	See note 1
BCCH-FREQ-NCELL-4	See note 2
BSIC-NCELL-4	Corresponds to that of BCCH-FREQ-NCELL-4
RXLEV-NCELL-5	See note 1
BCCH-FREQ-NCELL-5	See note 2
BSIC-NCELL-5	Corresponds to that of BCCH-FREQ-NCELL-5
RXLEV-NCELL-6	See note 1
BCCH-FREQ-NCELL-6	See note 2
BSIC-NCELL-6	Corresponds to that of BCCH-FREQ-NCELL-6

NOTE 1: These actual values are not checked.
NOTE 2: k=1; report on ARFCNs 308, 310, 321, 325, 88, 114
      ie: BSIC-NCELL values of 0, 1, 2, 3, 5 and 6 but not 4
      k=2; report on ARFCNs 310, 321, 325, 2, 88, 114
      ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
      k=3; report on ARFCNs 88, 114, 308, 310, 321, 325
      ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
NOTE 3: The Measurement Valid Indication shall be set to valid within the second SACCH block at the latest.	

For 450/1 800 MS:

SYSTEM INFORMATION TYPE 2ter:

Information Element	value/remark
As defaults except: Neighbour Cells Description 2 Multiband Reporting	 k=1, 3: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell. k=2: Normal reporting of six strongest cells, irrespective of the band used.

SYSTEM INFORMATION TYPE 3:

Information Element	value/remark

as default except:
  - SI 2ter indicator
  - Early Classmark Sending Control
	SI 3 rest octets
	System Information 2ter is available
	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 5:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5.
Neighbour Cells Description	
- Format Identifier	k=1, 2: Range 128
	k=3: Range 512
- BCCH Allocation Sequence	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 261, 263, 274, 278
	k=3: ARFCN 520, 780, 880
- EXT IND	Information Element carries the complete BA.

SYSTEM INFORMATION TYPE 5ter:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5ter.
- Neighbour Cells Description 2	
- Multiband reporting	k=1, 3: Normal reporting of six strongest cells, irrespective of the band used
	k=2: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell.
- Format notation	Range 512
- BA_IND	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 520, 780, 880
	k=3: ARFCN 261, 263, 274, 278

MEASUREMENT REPORT:

Information Element	value/remark
Protocol Discriminator	RR Management
Transaction Identifier	0000
Message Type	MEASUREMENT REPORT
Measurement Results	
BA-used	1
DTX-used	DTX was not used
RXLEV-FULL-SERVING-CELL	See note 1
RXLEV-SUB-SERVING-CELL	See note 1
MEAS-VALID	See note 3
RXQUAL-FULL-SERVING-CELL	See note 1
RXQUAL-SUB-SERVING-CELL	See note 1
NO-NCELL-M	6 neighbour cell measurement results
RXLEV-NCELL-1	See note 1
BCCH-FREQ-NCELL-1	See note 2
BSIC-NCELL-1	Corresponds to that of BCCH-FREQ-NCELL-1
RXLEV-NCELL-2	See note 1
BCCH-FREQ-NCELL-2	See note 2
BSIC-NCELL-2	Corresponds to that of BCCH-FREQ-NCELL-2
RXLEV-NCELL-3	See note 1
BCCH-FREQ-NCELL-3	See note 2
BSIC-NCELL-3	Corresponds to that of BCCH-FREQ-NCELL-3
RXLEV-NCELL-4	See note 1
BCCH-FREQ-NCELL-4	See note 2
BSIC-NCELL-4	Corresponds to that of BCCH-FREQ-NCELL-4
RXLEV-NCELL-5	See note 1
BCCH-FREQ-NCELL-5	See note 2
BSIC-NCELL-5	Corresponds to that of BCCH-FREQ-NCELL-5
RXLEV-NCELL-6	See note 1
BCCH-FREQ-NCELL-6	See note 2
BSIC-NCELL-6	Corresponds to that of BCCH-FREQ-NCELL-6

NOTE 1:   These actual values are not checked.
NOTE 2:   k=1; report on ARFCNs 261, 263, 274, 278, 780, 880
        ie: BSIC-NCELL values of 0, 1, 2, 3, 5 and 6 but not 4
        k=2; report on ARFCNs 263, 274, 278, 520, 780, 880
        ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
        k=3; report on ARFCNs 780, 880, 261, 263, 274, 278
        ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
NOTE 3: The Measurement Valid Indication shall be set to valid within the second SACCH block at the latest.	

For 480/1 800 MS:

SYSTEM INFORMATION TYPE 2ter:

Information Element	value/remark
As defaults except: Neighbour Cells Description 2 Multiband Reporting	 k=1, 3: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell. k=2: Normal reporting of six strongest cells, irrespective of the band used.

SYSTEM INFORMATION TYPE 3:

Information Element	value/remark
as default except:	SI 3 rest octets
- SI 2ter indicator	System Information 2ter is available
- Early Classmark Sending Control	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 5:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5.
Neighbour Cells Description	
- Format Identifier	k=1, 2: Range 128
	k=3: Range 512
- BCCH Allocation Sequence	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 308, 310, 321, 325
	k=3: ARFCN 520, 780, 880
- EXT IND	Information Element carries the complete BA.

SYSTEM INFORMATION TYPE 5ter:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5ter.
- Neighbour Cells Description 2	
- Multiband reporting	k=1, 3: Normal reporting of six strongest cells, irrespective of the band used
	k=2: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell.
- Format notation	Range 512
- BA_IND	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 520, 780, 880
	k=3: ARFCN 308, 310, 321, 325

MEASUREMENT REPORT:

Information Element	value/remark
Protocol Discriminator	RR Management
Transaction Identifier	0000
Message Type	MEASUREMENT REPORT
Measurement Results	
BA-used	1
DTX-used	DTX was not used
RXLEV-FULL-SERVING-CELL	See note 1
RXLEV-SUB-SERVING-CELL	See note 1
MEAS-VALID	See note 3
RXQUAL-FULL-SERVING-CELL	See note 1
RXQUAL-SUB-SERVING-CELL	See note 1
NO-NCELL-M	6 neighbour cell measurement results
RXLEV-NCELL-1	See note 1
BCCH-FREQ-NCELL-1	See note 2
BSIC-NCELL-1	Corresponds to that of BCCH-FREQ-NCELL-1
RXLEV-NCELL-2	See note 1
BCCH-FREQ-NCELL-2	See note 2
BSIC-NCELL-2	Corresponds to that of BCCH-FREQ-NCELL-2
RXLEV-NCELL-3	See note 1
BCCH-FREQ-NCELL-3	See note 2
BSIC-NCELL-3	Corresponds to that of BCCH-FREQ-NCELL-3
RXLEV-NCELL-4	See note 1
BCCH-FREQ-NCELL-4	See note 2
BSIC-NCELL-4	Corresponds to that of BCCH-FREQ-NCELL-4
RXLEV-NCELL-5	See note 1
BCCH-FREQ-NCELL-5	See note 2
BSIC-NCELL-5	Corresponds to that of BCCH-FREQ-NCELL-5
RXLEV-NCELL-6	See note 1
BCCH-FREQ-NCELL-6	See note 2
BSIC-NCELL-6	Corresponds to that of BCCH-FREQ-NCELL-6

NOTE 1:   These actual values are not checked.
NOTE 2:   k=1; report on ARFCNs 308, 310, 321, 325, 780, 880
        ie: BSIC-NCELL values of 0, 1, 2, 3, 5 and 6 but not 4
        k=2; report on ARFCNs 310, 321, 325, 520, 780, 880
        ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
        k=3; report on ARFCNs 780, 880, 308, 310, 321, 325
        ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
NOTE 3: The Measurement Valid Indication shall be set to valid within the second SACCH block at the latest.	

For 900/1 800 MS:

SYSTEM INFORMATION TYPE 2ter:

Information Element	value/remark
As defaults except: Neighbour Cells Description 2 Multiband Reporting	 k=1, 3: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell. k=2: Normal reporting of six strongest cells, irrespective of the band used.

SYSTEM INFORMATION TYPE 3:

Information Element	value/remark

as default except:
  - SI 2ter indicator
  - Early Classmark Sending Control
	SI 3 rest octets
	System Information 2ter is available
	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 5:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5.
Neighbour Cells Description	
- Format Identifier	k=1, 2: Bit map 0
	k=3: Range 512
- BCCH Allocation Sequence	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 14, 20, 32, 44
	k=3: ARFCN 520, 780, 880
- EXT IND	Information Element carries the complete BA.

SYSTEM INFORMATION TYPE 5ter:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5ter.
- Neighbour Cells Description 2	
- Multiband reporting	k=1, 3: Normal reporting of six strongest cells, irrespective of the band used
	k=2: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell.
- Format notation	Range 512
- BA_IND	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 520, 780, 880
	k=3: ARFCN 14, 20, 32, 44

MEASUREMENT REPORT:

Information Element	value/remark
Protocol Discriminator	RR Management
Transaction Identifier	0000
Message Type	MEASUREMENT REPORT
Measurement Results	
BA-used	1
DTX-used	DTX was not used
RXLEV-FULL-SERVING-CELL	See note 1
RXLEV-SUB-SERVING-CELL	See note 1
MEAS-VALID	See note 3
RXQUAL-FULL-SERVING-CELL	See note 1
RXQUAL-SUB-SERVING-CELL	See note 1
NO-NCELL-M	6 neighbour cell measurement results
RXLEV-NCELL-1	See note 1
BCCH-FREQ-NCELL-1	See note 2
BSIC-NCELL-1	Corresponds to that of BCCH-FREQ-NCELL-1
RXLEV-NCELL-2	See note 1
BCCH-FREQ-NCELL-2	See note 2
BSIC-NCELL-2	Corresponds to that of BCCH-FREQ-NCELL-2
RXLEV-NCELL-3	See note 1
BCCH-FREQ-NCELL-3	See note 2
BSIC-NCELL-3	Corresponds to that of BCCH-FREQ-NCELL-3
RXLEV-NCELL-4	See note 1
BCCH-FREQ-NCELL-4	See note 2
BSIC-NCELL-4	Corresponds to that of BCCH-FREQ-NCELL-4
RXLEV-NCELL-5	See note 1
BCCH-FREQ-NCELL-5	See note 2
BSIC-NCELL-5	Corresponds to that of BCCH-FREQ-NCELL-5
RXLEV-NCELL-6	See note 1
BCCH-FREQ-NCELL-6	See note 2
BSIC-NCELL-6	Corresponds to that of BCCH-FREQ-NCELL-6

NOTE 1: These actual values are not checked.
NOTE 2: k=1; report on ARFCNs 14, 20, 32, 44, 780, 880
      ie: BSIC-NCELL values of 0, 1, 2, 3, 5 and 6 but not 4
      k=2; report on ARFCNs 20, 32, 44, 520, 780, 880
      ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
      k=3; report on ARFCNs 780, 880, 14, 20, 32, 44
      ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
NOTE 3: The Measurement Valid Indication shall be set to valid within the second SACCH block at the latest.	

For 710/1 900 MS, 750/1 900 MS:

SYSTEM INFORMATION TYPE 2ter:

Information Element	value/remark
As defaults except: Neighbour Cells Description 2 Multiband Reporting	 k=1, 3: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell. k=2: Normal reporting of six strongest cells, irrespective of the band used.

SYSTEM INFORMATION TYPE 3:

Information Element	value/remark

as default except:
  - SI 2ter indicator
  - Early Classmark Sending Control
	SI 3 rest octets
	System Information 2ter is available
	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 5:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5.
Neighbour Cells Description	
- Format Identifier	k=1, 2: 128 range
	k=3: Range 512
- BCCH Allocation Sequence	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 451, 457, 469, 481
	k=3: ARFCN 520, 780, 805
- EXT IND	Information Element carries the complete BA.

SYSTEM INFORMATION TYPE 5ter:

Information Element	Value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5ter.
- Neighbour Cells Description 2	
- Multiband reporting	k=1, 3: Normal reporting of six strongest cells, irrespective of the band used
	k=2: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell.
- Format notation	Range 512
- BA_IND	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 520, 780, 805
	k=3: ARFCN 451, 457, 469, 481

MEASUREMENT REPORT:

Information Element	value/remark
Protocol Discriminator	RR Management
Transaction Identifier	0000
Message Type	MEASUREMENT REPORT
Measurement Results	
BA-used	1
DTX-used	DTX was not used
RXLEV-FULL-SERVING-CELL	See note 1
RXLEV-SUB-SERVING-CELL	See note 1
MEAS-VALID	See note 3
RXQUAL-FULL-SERVING-CELL	See note 1
RXQUAL-SUB-SERVING-CELL	See note 1
NO-NCELL-M	6 neighbour cell measurement results
RXLEV-NCELL-1	See note 1
BCCH-FREQ-NCELL-1	See note 2
BSIC-NCELL-1	Corresponds to that of BCCH-FREQ-NCELL-1
RXLEV-NCELL-2	See note 1
BCCH-FREQ-NCELL-2	See note 2
BSIC-NCELL-2	Corresponds to that of BCCH-FREQ-NCELL-2
RXLEV-NCELL-3	See note 1
BCCH-FREQ-NCELL-3	See note 2
BSIC-NCELL-3	Corresponds to that of BCCH-FREQ-NCELL-3
RXLEV-NCELL-4	See note 1
BCCH-FREQ-NCELL-4	See note 2
BSIC-NCELL-4	Corresponds to that of BCCH-FREQ-NCELL-4
RXLEV-NCELL-5	See note 1
BCCH-FREQ-NCELL-5	See note 2
BSIC-NCELL-5	Corresponds to that of BCCH-FREQ-NCELL-5
RXLEV-NCELL-6	See note 1
BCCH-FREQ-NCELL-6	See note 2
BSIC-NCELL-6	Corresponds to that of BCCH-FREQ-NCELL-6

NOTE 1:   These actual values are not checked.
NOTE 2:   k=1; report on ARFCNs 451, 457, 469, 481, 780, 805
        ie: BSIC-NCELL values of 0, 1, 2, 3, 5 and 6 but not 4
        k=2; report on ARFCNs 457, 469, 481, 520, 780, 805
        ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
        k=3; report on ARFCNs 780, 805, 451, 457, 469, 481
        ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0
NOTE 3: The Measurement Valid Indication shall be set to valid within the second SACCH block at the latest.	

For 850/1 900 MS:

SYSTEM INFORMATION TYPE 2ter:

Information Element	value/remark
As defaults except: Neighbour Cells Description 2 Multiband Reporting	 k=1, 3: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell. k=2: Normal reporting of six strongest cells, irrespective of the band used.

SYSTEM INFORMATION TYPE 3:

Information Element	value/remark

as default except:
  - SI 2ter indicator
  - Early Classmark Sending Control
	SI 3 rest octets
	System Information 2ter is available
	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 5:

Information Element	value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5.
Neighbour Cells Description	
- Format Identifier	k=1, 2: 128 range
	k=3: Range 512
- BCCH Allocation Sequence	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 141, 147, 159, 171
	k=3: ARFCN 520, 780, 805
- EXT IND	Information Element carries the complete BA.

SYSTEM INFORMATION TYPE 5ter:

Information Element	Value/remark
Protocol Discriminator	RR management
Message Type	Sys Info 5ter.
- Neighbour Cells Description 2	
- Multiband reporting	k=1, 3: Normal reporting of six strongest cells, irrespective of the band used
	k=2: Minimum 3 cells reported from each band supported excluding the frequency band of the serving cell.
- Format notation	Range 512
- BA_IND	1
- BCCH Allocation ARFCN	k=1, 2: ARFCN 520, 780, 805
	k=3: ARFCN 141, 147, 159, 171

MEASUREMENT REPORT:

Information Element	value/remark
Protocol Discriminator	RR Management
Transaction Identifier	0000
Message Type	MEASUREMENT REPORT
Measurement Results	
BA-used	1
DTX-used	DTX was not used
RXLEV-FULL-SERVING-CELL	See note 1
RXLEV-SUB-SERVING-CELL	See note 1
MEAS-VALID	See note 3
RXQUAL-FULL-SERVING-CELL	See note 1
RXQUAL-SUB-SERVING-CELL	See note 1
NO-NCELL-M	6 neighbour cell measurement results
RXLEV-NCELL-1	See note 1
BCCH-FREQ-NCELL-1	See note 2
BSIC-NCELL-1	Corresponds to that of BCCH-FREQ-NCELL-1
RXLEV-NCELL-2	See note 1
BCCH-FREQ-NCELL-2	See note 2
BSIC-NCELL-2	Corresponds to that of BCCH-FREQ-NCELL-2
RXLEV-NCELL-3	See note 1
BCCH-FREQ-NCELL-3	See note 2
BSIC-NCELL-3	Corresponds to that of BCCH-FREQ-NCELL-3
RXLEV-NCELL-4	See note 1
BCCH-FREQ-NCELL-4	See note 2
BSIC-NCELL-4	Corresponds to that of BCCH-FREQ-NCELL-4
RXLEV-NCELL-5	See note 1
BCCH-FREQ-NCELL-5	See note 2
BSIC-NCELL-5	Corresponds to that of BCCH-FREQ-NCELL-5
RXLEV-NCELL-6	See note 1
BCCH-FREQ-NCELL-6	See note 2
BSIC-NCELL-6	Corresponds to that of BCCH-FREQ-NCELL-6
NOTE 1: These actual values are not checked.	
NOTE 2: k=1; report on ARFCNs 141, 147, 159, 171, 780, 805 ie: BSIC-NCELL values of 0, 1, 2, 3, 5 and 6 but not 4 k=2; report on ARFCNs 147, 159, 171, 520, 780, 805 ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0 k=3; report on ARFCNs 780, 805, 141, 147, 159, 171 ie: BSIC-NCELL values of 1, 2, 3, 4, 5 and 6 but not 0	
NOTE 3: The Measurement Valid Indication shall be set to valid within the second SACCH block at the latest.	

26.11.3 Multiband signalling / MM

26.11.3.1 Multiband signalling / MM / Location updating

This procedure is used to register the MS in the network. If it is not performed correctly, no call can be established.

26.11.3.1.1 Location updating / accepted

This test is applicable for any Multiband MSs supporting simultaneous multiband operation.

26.11.3.1.1.1 Conformance requirement

If the network accepts a location updating from the Mobile, the Mobile Station shall, after receiving a Location updating Accept message, store the received LAI, stop timer T3210, reset the attempt counter and set the update status in the SIM to updated.

A mobile station that makes use of System information 2ter (to choose correct cell for location updating) , shall not ignore this message if it has a L2 pseudolength different from 18.

Reference(s)

3GPP TS 04.08 / 3GPP TS 24.008 subclause 4.4.4.6.

26.11.3.1 1.2   Test purpose

To test the behaviour of the MS if the network accepts the location updating of the MS, irrespective of frequency band used.

To test the behaviour of the MS if it receives a System information 2ter with L2pseudolength different from 18.

26.11.3.1.1.3   Method of test

Initial conditions:

    System Simulator:

        Two cells, A and B, belonging to different location areas with location area identification a and b of the same PLMN and using frequencies from different frequency bands.

        IMSI attach/detach is allowed in both cells.

        The T3212 time-out value is 1/10 hour in both cells.

    Mobile Station:

        The MS has a valid TMSI, CKSN (CKSN1). It is "idle updated" on cell A.

Specific PICS statements:

-    GSM 450 Band (TSPC_Type_GSM_450_Band)

-    Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

-    Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

-    GSM 480 Band (TSPC_Type_GSM_480_Band)

-    DCS 1800 band (TSPC_Type_DCS_Band)

-    GSM 750 band (TSPC_Type_GSM_750_Band)

-    GSM 710 band (TSPC_Type_GSM_710_Band)

PIXIT statements:

-

Foreseen final state of the MS

The MS has a valid TMSI and CKSN. It is "idle, updated" on cell A.

Test Procedure

The MS is made to select cell B. A normal location updating is performed in cell B. The channel is released. The MS is made to select cell A. A normal location updating is performed in cell A.

The LOCATION UPDATING ACCEPT message contains neither IMSI nor TMSI.

Maximum duration of test

3 minutes.

Expected sequence

Step	Direction	Message	Comments
1	SS		The RF level of cell A is lowered but kept suitable , and the RF level of cell B is set higher, in order that the MS can choose cell B as a better cell than cell A , if it correctly read the information broadcasted on the BCCH. The following message are received and sent on cell B . "Establishment cause": Location updating.
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	MS -> SS	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = a and "mobile identity" = TMSI.
5	SS -> MS	UA(LOCATION UPDATING REQUEST)	
6	MS -> SS	CLASSMARK CHANGE	Indicating the frequency and power capability of the MS
7	SS -> MS	LOCATION UPDATING ACC	"Mobile identity" IE not included.
8	SS -> MS	CHANNEL RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
9	SS		The RF level of cell B is lowered but kept suitable , and the RF level of cell A is set higher, in order that the MS can choose cell A as a better cell than cell B , if it correctly read the information broadcasted on the BCCH. The following message are received and sent on cell A . "Establishment cause": Location updating
10	MS -> SS	CHANNEL REQUEST	
11	SS -> MS	IMMEDIATE ASSIGNMENT	
12	MS -> SS	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = b and "mobile identity" = TMSI.
13	SS -> MS	UA(LOCATION UPDATING REQUEST)	
14	MS -> SS	CLASSMARK CHANGE	Indicating the frequency and power capability of the MS
15	SS -> MS	LOCATION UPDATING ACC	"Mobile identity" IE not included
16	SS -> MS	CHANNEL RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.

Specific message contents:

SYSTEM INFORMATION 2TER of CELL B

Information element	Value/remark
as default except: L2 pseudolength	= 0

LOCATION UPDATING REQUEST

Information element	Value/remark
as default except: Mobile station Classmark 1	
- ES IND	Controlled Early Classmark Sending option is implemented
- RF power capability	corresponding to frequency band used

CLASSMARK CHANGE

Information element	Value/remark
as default except:	
Mobile station Classmark 2	
-ES IND	Controlled Early Classmark Sending is implemented.
-RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
-Band 1 (P-GSM) supported	According to PICS statement
-Band 2 (E-GSM) supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
-Band 3 (DCS) supported	According to PICS statement, Note
, Note -GSM 400 Band supported	According to PICS statement
-Associated radio capability	Corresponding to GSM 400 band
-Associated radio capability	Corresponding to GSM 900 band
-Associated radio capability	Corresponding to DCS 1 800 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band
- GSM 710 Associated radio capability	Corresponding to GSM 710 band
- GSM 750 Associated radio capability	Corresponding to GSM 750 band
- GSM 850 Associated radio capability	Corresponding to GSM 850 band
- PCS 1 900 Associated radio capability	Corresponding to PCS 1 900 band

NOTE: Due to shared radio frequency channel numbers between GSM 1800 and GSM 1900, the mobile should indicate support for either GSM 1800 band OR GSM 1900 band

26.11.3.1.2 Location updating / periodic

This test is applicable for any Multiband MSs supporting simultaneous multiband operation.

26.11.3.1.2.1 Conformance requirement

1) If the Mobile Station is in service state NO CELL AVAILABLE, LIMITED SERVICE, PLMN SEARCH or PLMN SEARCH-NORMAL SERVICE when the timer expires the location updating procedure is delayed until this service state is left.

2) The T3212 time-out value shall not be changed in the NO CELL AVAILABLE, LIMITED SERVICE, PLMN SEARCH and PLMN SEARCH-NORMAL SERVICE states.

3) If the selected cell is in the location area where the mobile station is registered and IMSI ATTACH is not required and timer T3212 has not expired, then the state is NORMAL SERVICE.

References

    3GPP TS 04.08 / 3GPP TS 24.008 subclauses 4.4.2 and 4.2.1.1.

26.11.3.1.2.2 Test purpose

1) To check that if the PLU timer expires while the MS is out of coverage, the MS informs the network of its return to coverage, irrespective of frequency band used.

2) To check that the PLU timer is not disturbed by cells of forbidden PLMNs.

3) To check that if the PLU timer does not expire while out of coverage and if the mobile returns to the LA where it is updated, the mobile does not inform the network of its return to coverage.

26.11.3.1.2.3 Method of test

Initial conditions

    System Simulator:

    Two cells, A and B, belonging to the same location area but using different frequency bands.

    Cell A is switched on and cell B is switched off.

    T3212 is set to 12 minutes on cell A and cell B.

IMSI attach is allowed in both cells.

Mobile Station:

The MS has a valid TMSI. It is "idle updated" on cell A.

Specific PICS statements:

- GSM 450 Band (TSPC_Type_GSM_450_Band)

- Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

- Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

- GSM 480 Band (TSPC_Type_GSM_480_Band)

- DCS 1800 band (TSPC_Type_DCS_Band)

- GSM 750 band (TSPC_Type_GSM_750_Band)

- GSM 710 band (TSPC_Type_GSM_710_Band)

PIXIT statements:

-

Foreseen final state of the MS

The MS is "idle updated" on cell A.

Test procedure

The MS is deactivated. The MS is then activated and placed in automatic network selection mode. It performs IMSI attach. 1 minute after the end of the IMSI attach procedure, cell A is switched off. 8 minutes after the end of the IMSI attach procedure, cell B is switched on. The MS shall not location update on cell B before 11,75 minutes after the end of the IMSI attach procedure. The MS shall perform a periodic location update on cell B between 11,75 minutes and 12,25 minutes after the end of the IMSI attach procedure.

3 minutes after the end of the periodic location updating procedure, cell B is switched off. 14 minutes after the end of the periodic location updating procedure, cell A is switched on. The MS shall perform a location update on cell A before 17 minutes after the end of the periodic location updating procedure.

Maximum duration of test

35 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is activated in automatic network selection mode
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	MS -> SS	LOCATION UPDATING REQUEST	"location updating type": IMSI attach
5	SS -> MS	UA(LOCATION UPDATING REQUEST)	
6	MS -> SS	CLASSMARK CHANGE	Indicating the frequency and power capability of the MS
7	SS -> MS	LOCATION UPDATING ACC	
8	SS -> MS	CHANNEL RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
9	SS		1 minute after step 6, cell A is switched off
10	SS		8 minutes after step 6, cell B is switched on
11	MS -> SS	CHANNEL REQUEST	This message shall be sent on cell B by the MS between 11 minutes 45s and 12 minutes 15s after step 6.
12	SS -> MS	IMMEDIATE ASSIGNMENT	
13	MS -> SS	LOCATION UPDATING REQUEST	"location updating type": periodic updating
14	SS -> MS	UA(LOCATION UPDATING REQUEST)	
15	MS -> SS	CLASSMARK CHANGE	Indicating the frequency and power capability of the MS
16	SS -> MS	LOCATION UPDATING ACC	
17	SS -> MS	CHANNEL RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
18	SS		3 minutes after step 13, cell B is switched off
19	SS		14 minutes after step 13, cell A is switched on.
20	MS -> SS	CHANNEL REQUEST	This message shall be sent on cell A by the MS before 17 minutes after step 13.
21	SS -> MS	IMMEDIATE ASSIGNMENT	
22	MS -> SS	LOCATION UPDATING REQUEST	"Location updating type" = periodic
23	SS -> MS	UA(LOCATION UPDATING REQUEST)	
24	MS -> SS	CLASSMARK CHANGE	Indicating the frequency and power capability of the MS
25	SS -> MS	LOCATION UPDATING ACC	
26	SS -> MS	CHANNEL RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.

Specific message contents

LOCATION UPDATING REQUEST

Information element	Value/remark
as default except:	
Mobile station Classmark 1	
- ES IND	Controlled Early Classmark Sending option is implemented
- RF power capability	corresponding to frequency band used

CLASSMARK CHANGE

Information element	Value/remark
as default except:	
Mobile station Classmark 2	
-ES IND	Controlled Early Classmark Sending is implemented.
-RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
-Band 1 (P-GSM) supported	According to PICS statement
-Band 2 (E-GSM) supported	According to PICS statement
-Band 3 (DCS) supported	According to PICS statement, Note
-GSM 400 Band supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
-Associated radio capability	Corresponding to GSM 400 band
-Associated radio capability	Corresponding to GSM 900 band
-Associated radio capability	Corresponding to DCS 1 800 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band
- GSM 710 Associated radio capability	Corresponding to GSM 710 band
- GSM 750 Associated radio capability	Corresponding to GSM 750 band
- GSM 850 Associated radio capability	Corresponding to GSM 850 band
- PCS 1 900 Associated radio capability	Corresponding to PCS 1 900 band

NOTE: Due to shared radio frequency channel numbers between GSM 1800 and GSM 1900, the mobile should indicate support for either GSM 1800 band OR GSM 1900 band

26.11.4   Multiband signalling / CC

Reserved for future use.

26.11.5   Multiband signalling / Structured procedures

These tests applies only to multiband mobile stations.

26.11.5.1   Multiband signalling / Structured procedures / MS originated call / early assignment

26.11.5.1.1   Conformance requirements

1) An MS in MM state "idle, updated" and in RR idle mode, when made to initiate a call, if it provides a human interface, shall display the dialled number.

2) An MS in MM state "idle, updated" and in RR idle mode, when made to initiate a call for a selected teleservice that is supported by the MS, shall start to initiate the immediate assignment procedure by sending a CHANNEL REQUEST message with correct establishment cause.

3) After the initial message the multiband MS shall send a CLASSMARK CHANGE message in the uplink block followed direct after the Layer 2 UA message sent from the network. The CLASSMARK CHANGE message shall contain information elements Mobile Station Classmark 2 and Mobile Station Classmark 3.

4) Subsequently after establishment of an MM connection, the MS shall send a SETUP message with correct parameters.

5) The call control entity of the Mobile Station in the "call initiated" state, in the "mobile originating call proceeding" state or in the "call delivered" state, shall, upon receipt of a CONNECT message:

   - attach the user connection to the radio path;

   - return a CONNECT ACKNOWLEDGE message.

6) Subsequently when the network initiates call clearing by sending a DISCONNECT message, the MS shall proceed to release the call by sending a RELEASE message.

7) On receipt of a CHANNEL RELEASE message, the MS shall disconnect the main signalling link.

References

Conformance requirement 1: 3GPP TS 02.07.

Conformance requirement 2: 3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.3.1.1.

Conformance requirement 3: 3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.3.1.1.4.

Conformance requirement 4: 3GPP TS 04.08 / 3GPP TS 24.008 subclause 5.2.1.1.

Conformance requirement 5: 3GPP TS 04.08 / 3GPP TS 24.008 subclause 5.2.1.6.

Conformance requirement 6: 3GPP TS 04.08 / 3GPP TS 24.008 subclause 5.4.4.

Conformance requirement 7: 3GPP TS 04.08 / 3GPP TS 44.018, subclause 3.4.13.1.

26.11.5.1.2 Test purpose

1) To verify that the MS in MM state "idle, updated" with a TMSI assigned, when made to initiate a call for a selected teleservice that is supported by the MS as declared in a PICS/PIXIT statement, displays the dialled number in the way described in a PICS/PIXIT statement.

2) To verify that the MS in MM state "idle, updated" and in RR idle mode, with a TMSI assigned, when made to initiate a call for a selected teleservice that is supported by the MS as declared in a PICS/PIXIT statement, starts to initiate an immediate assignment procedure by sending the CHANNEL REQUEST message with correct establishment cause.

3) To verify that a multiband MS is able to send an early CLASSMARK CHANGE on the DCCH uplink.

4) To verify that subsequently after receipt of an IMMEDIATE ASSIGNMENT message allocating an SDCCH, after completion of establishment of the main signalling link, after having sent a CM SERVICE REQUEST message, after having successfully performed the authentication and cipher mode setting procedures, the MS sends a SETUP message with correct parameters.

5) To verify that subsequently, after receipt of a CALL PROCEEDING message and of an HANDOVER COMMAND message allocating an appropriate TCH in another band, after having completed the traffic channel early assignment procedure by replying with the HANDOVER COMPLETE message, after receipt of an ALERTING message and a CONNECT message, the MS returns a CONNECT ACKNOWLEDGE message.

   To verify that subsequently the MS has attached the user connection to the radio path. (This is checked by verifying that there is a point in time after transmission of the first L2 frame containing the (complete) CONNECT message, where the MS is sending appropriate speech or data frames whenever it does not have to transmit or acknowledge an I frame on layer 2 of the FACCH.)

6) To verify that subsequently upon the network initiating call clearing by sending a DISCONNECT message, the MS proceed to release the call with RELEASE.

7) To verify that subsequently, on receipt of a RELEASE COMPLETE message followed by a CHANNEL RELEASE message, the MS disconnects the main signalling link.

26.11.5.1.3 Method of test

Initial Conditions

System Simulator:

For 450/900 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 450 cell with default parameters.

Cell B is a GSM 900 cell with default parameters.

For 480/900 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 480 cell with default parameters.

Cell B is a GSM 900 cell with default parameters.

For 450/1800 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 450 cell with default parameters.

Cell B is a DCS 1 800 cell with default parameters.

For 480/1800 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 480 cell with default parameters.

Cell B is a DCS 1 800 cell with default parameters.

For 900/1 800 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 900 cell with default parameters.

Cell B is a DCS 1 800 cell with default parameters.

For 710/1900 MS, 750/1900 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 710 or GSM 750 cell with default parameters.

Cell B is a PCS 1 900 cell with default parameters.

For 850/1900 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 850 cell with default parameters.

Cell B is a PCS 1 900 cell with default parameters.

Mobile Station:

The MS is in MM-state idle, updated on cell A with valid TMSI.

Specific PICS statements:

- GSM 450 Band (TSPC_Type_GSM_450_Band)

- Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

- Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

- GSM 480 Band (TSPC_Type_GSM_480_Band)

- DCS 1800 band (TSPC_Type_DCS_Band)

- GSM 750 band (TSPC_Type_GSM_750_Band)

- GSM 710 band (TSPC_Type_GSM_710_Band)

PIXIT statements:

- Way to indicate mobile originated alerting.

-. Way to display the called number

Foreseen Final State of the MS

The MS is in MM-state idle, updated on cell B with valid TMSI.

Test procedure

The following test is performed for one teleservice supported by the MS:

- A teleservice is selected that is supported by the MS; if the MS supports speech, the selected teleservice is speech. If necessary, the MS is configured for that teleservice.

- The MS is made to initiate a call on any frequency band supported by the MS. The call is established with early assignment. Having reached the active state, the call is cleared by the SS.

Maximum Duration of Test

1 minute.

Expected Sequence

Step	Direction	Message	Comments
1	MS		The "called number" is entered
2	MS -> SS	CHANNEL REQUEST	Establishment cause is "originating call and the network does not set the NECI bit to 1".
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	MS -> SS	CM SERVICE REQUEST	Message is contained in SABM. Indicating early sending of CLASSMARK CHANGE
5	SS -> MS	UA (CM SERVICE REQUEST)	
6	MS -> SS	CLASSMARK CHANGE	Indicating the frequency and power capability of the MS
7	SS -> MS	AUTHENTICATION REQUEST	
8	MS -> SS	AUTHENTICATION RESP	SRES specifies correct value.
9	SS -> MS	CIPHERING MODE COMMAND	SS starts deciphering after sending the message.
10	MS -> SS	CIPHERING MODE COMPLETE	Shall be sent enciphered. All following messages shall be sent enciphered.
11	SS		SS starts ciphering.
12	MS -> SS	SETUP	
13	SS -> MS	CALL PROCEEDING	
14	SS -> MS	HANDOVER COMMAND	See specific message contents below.
15	MS -> SS	HANDOVER ACCESS	May or may not be sent. The sending of the
	MS -> SS	HANDOVER ACCESS	HANDOVER ACCESS is optional as indicated in
	MS -> SS	HANDOVER ACCESS	HANDOVER COMMAND.
	MS -> SS	HANDOVER ACCESS	Handover Reference is included in the HANDOVER COMMAND.
			Before completion of the 4 access bursts on the new DCCH, additional access bursts may also be sent on the SACCH
16	MS -> SS	SABM	Sent without information field
17	SS -> MS	UA	
18	MS -> SS	HANDOVER COMPLETE	
19	SS -> MS	ALERTING	
20	MS		Depending on the PIXIT, an alerting indication is given
21	SS -> MS	CONNECT	
22	MS -> SS	CONNECT ACKNOWLEDGE	
23	MS		The appropriate bearer channel is through connected in both directions.
24	SS -> MS	DISCONNECT	
25	MS -> SS	RELEASE	
26	SS -> MS	RELEASE COMPLETE	
27	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents:

For 450/900 MS:

CM SERVICE REQUEST

as default except:

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

as default except:

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 1 (P-GSM) supported	According to PICS statement
- Band 2 (E-GSM) supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
- GSM 400 Band supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 450 band
- Associated radio capability 1	Corresponding to GSM 900 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	20
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	50
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is optional
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the First Channel	appropriate for the selected bearer service

For 480/900 MS:

CM SERVICE REQUEST

as default except:

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

as default except:

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 1 (P-GSM) supported	According to PICS statement
- Band 2 (E-GSM) supported	According to PICS statement
- GSM 400 Band supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 400 band
- Associated radio capability 1	Corresponding to GSM 900 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	20
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	50
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is optional
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the First Channel	appropriate for the selected bearer service

For 450/1 800 MS:

CM SERVICE REQUEST

as default except:

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

as default except:

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 3 (DCS 1 800) supported	According to PICS statement
- GSM 400 Band supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 450 band
- Associated radio capability 2	Corresponding to DCS 1 800 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is optional
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the First Channel	appropriate for the selected bearer service

For 480/1 800 MS:

CM SERVICE REQUEST

as default except:

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

as default except:

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 3 (DCS 1 800) supported	According to PICS statement
- GSM 400 Band supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 480 band
- Associated radio capability 2	Corresponding to DCS 1 800 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is optional
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the First Channel	appropriate for the selected bearer service

For 900/1 800 MS:

CM SERVICE REQUEST

as default except:

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

as default except:

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 1 (P-GSM) supported	According to PICS statement
- Band 2 (E-GSM) supported	According to PICS statement
- Band 3 (DCS 1 800) supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
- Associated radio capability 1	Corresponding to GSM 900 band
- Associated radio capability 2	Corresponding to DCS 1 800 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is optional
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the First Channel	appropriate for the selected bearer service

For 710/1 900 MS, 750/1 900 MS:

CM SERVICE REQUEST

as default except:

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

as default except:

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- GSM 710 Associated radio capability	Corresponding to GSM 710 band
- GSM 750 Associated radio capability	Corresponding to GSM 750 band
- PCS 1 900 Associated radio capability	Corresponding to PCS 1 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is optional
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the First Channel	appropriate for the selected bearer service

For 850/1 900 MS:

CM SERVICE REQUEST

as default except:

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

as default except:

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- GSM 850 Associated radio capability	Corresponding to GSM 850
- PCS 1 900 Associated radio capability	Corresponding to PCS 1 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is optional
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the First Channel	appropriate for the selected bearer service

26.11.5.2 Structured procedures / MS terminated call / late assignment

26.11.5.2.1 Conformance requirement

1) After the initial message the multiband MS shall send a CLASSMARK CHANGE message in the uplink block followed direct after Layer 2 UA message sent from the network.

2) The MS shall acknowledge the SETUP message with a CALL CONFIRMED message, if compatibility checking was successful, the MS is not busy, and the user does not refuse the call.

3) The MS on acceptance of the call sends a CONNECT, otherwise user alerting is initiated.

4) The MS indicates acceptance of a call by sending a CONNECT message.

5) HANDOVER COMMAND is answered by HANDOVER COMPLETE.

6) For speech calls:

    The mobile station shall attach the user connection at latest when sending the connect message, except if there is no compatible radio resource available at this time. In this case the attachment shall be delayed until such a resource becomes available.

    For data calls:

    The mobile station shall attach the user connection when receiving the CONNECT ACKNOWLEDGE message from the network.

Requirement reference:

Conformance requirement 1:	3GPP TS 04.08 / 3GPP TS 44.018, subclause 3.3.1.1.4.
Conformance requirements 2, 3, 4:	3GPP TS 04.08 / 3GPP TS 24.008, subclauses 5.2.2.3.1, 5.2.2.3.2 and 5.2.2.5.
Conformance requirement 5:	3GPP TS 04.08 / 3GPP TS 44.018, subclause 3.4.4.3.
Conformance requirement 6:	3GPP TS 04.08 / 3GPP TS 24.008, subclause 5.2.2.9.

26.11.5.2.2 Test purpose

1) To verify that a multiband MS is able to send an early CLASSMARK CHANGE message on the DCCH uplink.

2) To verify that the MS in "Idle, Updated" state with a TMSI assigned, after being paged by the network on the correct paging subchannel, after initiating the immediate assignment procedure by sending the CHANNEL

REQUEST message, after receipt of an IMMEDIATE ASSIGNMENT message allocating an SDCCH, after having established the main signalling link, after having sent a PAGING RESPONSE message, after having performed successful authentication and cipher mode setting procedures, after receipt of a SETUP message containing a signal information element, returns a CALL CONFIRMED message followed by:

- an ALERTING message;

- or a CONNECT message.

3) To verify that in the situation of test purpose 1, if the MS sends an ALERTING message, the MS generates an alerting indication in the way described in a PIXIT statement.

4) To verify that subsequently the MS, if it had not yet sent a CONNECT message, upon acceptance of the call, sends a CONNECT message.

5) To verify that subsequently after receipt of an HANDOVER COMMAND ALLOCATING A tch IN another band, the MS sends an HANDOVER COMPLETE message.

6) To verify that subsequently the MS:

- if the call is a speech call: after sending the HANDOVER COMPLETE message has through connected the TCH in both directions (this is checked by verifying that after transmission of the first L2 frame containing the (complete) HANDOVER COMPLETE message, the MS is sending appropriate speech or data frames whenever it does not have to transmit or acknowledge an I frame on layer 2 of the FACCH).

- if the call is a data call: after receipt of a subsequent CONNECT ACKNOWLEDGE message through connects the TCH in both directions (this is checked by verifying that there is a point in time after transmission of the first L2 frame containing the (complete) CONNECT ACKNOWLEDGE message, where the MS is sending appropriate speech or data frames whenever it does not have to transmit or acknowledge an I frame on layer 2 of the FACCH).

26.11.5.2.3 Method of test

Initial Conditions

System Simulator:

For 450/900 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 450 cell with default parameters.

Cell B is a GSM 900 cell with default parameters.

For 480/900 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 480 cell with default parameters.

Cell B is a GSM 900 cell with default parameters.

For 450/1 800 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 450 cell with default parameters.

Cell B is a DCS 1 800 cell with default parameters.

For 480/1 800 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 480 cell with default parameters.

Cell B is a DCS 1 800 cell with default parameters.

For 900/1 800 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 900 cell with default parameters.

Cell B is a DCS 1 800 cell with default parameters.

For 710/1 900 MS, 750/1 900 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 710 or GSM 750 cell with default parameters.

Cell B is a PCS 1 900 cell with default parameters.

For 850/1 900 MS:

2 cells, A and B, with same LAI.

Cell A is a GSM 850 cell with default parameters.

Cell B is a PCS 1 900 cell with default parameters.

Mobile Station:

The MS is in MM-state idle, updated on cell A with valid TMSI.

Specific PICS statements:

- GSM 450 Band (TSPC_Type_GSM_450_Band)

- Standard GSM Band (P-GSM) (TSPC_Type_GSM_P_Band)

- Extended GSM Band (E-GSM) (TSPC_Type_GSM_E_Band)

- GSM 480 Band (TSPC_Type_GSM_480_Band)

- DCS 1800 band (TSPC_Type_DCS_Band)

- GSM 750 band (TSPC_Type_GSM_750_Band)

- GSM 710 band (TSPC_Type_GSM_710_Band)

PIXIT statements:

- Way to indicate mobile originated alerting.

-. Way to display the called number

Foreseen Final State of the MS

The MS is in MM-state idle, updated on cell B with valid TMSI.

Test procedure

A teleservice is selected that is supported by the MS; if the MS supports speech, the selected teleservice is speech. If necessary, the MS is configured for that teleservice.

The MS is paged on any frequency band supported by the MS and a MT call is established with late assignment (after CONNECT). The release of the call is initiated by the MS.

Maximum Duration of Test

40 s.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	Sent on the correct paging subchannel
2	MS -> SS	CHANNEL REQUEST	Establishment cause indicates "answer to paging".
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	MS -> SS	PAGING RESPONSE	Message is contained in SABM.
5	SS -> MS	UA (PAGING RESPONSE)	
6	MS -> SS	CLASSMARK CHANGE	Indicating the frequency and power capability of the MS
7	SS -> MS	AUTHENTICATION REQUEST	
8	MS -> SS	AUTHENTICATION RESP	SRES specifies correct value.
9	SS -> MS	CIPHERING MODE COMMAND	SS starts deciphering after sending the message.
10	MS -> SS	CIPHERING MODE COMPLETE	Shall be sent enciphered. All following messages shall be sent enciphered.
11	SS		SS starts ciphering.
12	SS -> MS	SETUP	Message contains the signal IE.
13	MS -> SS	CALL CONFIRMED	
A14	MS -> SS	CONNECT	
B14	MS -> SS	ALERTING	
B15	MS		An alerting indication as defined in an PIXIT statement is given by the MS.
B16	MS		The MS is made to accept the call in the way described in a PIXIT statement.
B18	MS -> SS	CONNECT	
19	SS -> MS	HANDOVER COMMAND	See specific message contents below.
20	MS -> SS	HANDOVER ACCESS	Handover Reference is included in the
21	MS -> SS	HANDOVER ACCESS	HANDOVER COMMAND.
22	MS -> SS	HANDOVER ACCESS	
23	MS -> SS	HANDOVER ACCESS	Before completion of the 4 access bursts on the new DCCH, additional access bursts may also be sent on the SACCH
24	MS -> SS	SABM	Sent without information field
25	SS -> MS	UA	
26	MS -> SS	HANDOVER COMPLETE	
27	MS		If the call is a speech call, the TCH shall be through connected in both directions.
28	SS -> MS	CONNECT ACKNOWLEDGE	
29	MS		If the call is a data call, the MS shall through connect the TCH in both directions
30	MS		The MS is made to release the call.
31	MS -> SS	DISCONNECT	
32	SS -> MS	RELEASE	
33	MS -> SS	RELEASE COMPLETE	
34	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents:

For 450/900 MS:

PAGING RESPONSE

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 1 (P-GSM) supported	According to PICS statement
- Band 2 (E-GSM) supported	According to PICS statement
- GSM 400 Band supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 450 band
- Associated radio capability 1	Corresponding to GSM 900 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	20
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	50
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is mandatory.
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the first channel	appropriate for the selected bearer service

For 480/900 MS:

PAGING RESPONSE

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 1 (P-GSM) supported	According to PICS statement
- Band 2 (E-GSM) supported	According to PICS statement
- GSM 400 Band supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 480 band
- Associated radio capability 1	Corresponding to GSM 900 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	20
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	50
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is mandatory.
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the first channel	appropriate for the selected bearer service

For 450/1 800 MS:

PAGING RESPONSE

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 3 (DCS 1 800) supported	According to PICS statement
- GSM 400 Band supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 450 band
- Associated radio capability 2	Corresponding to DCS 1 800 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is mandatory.
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the first channel	appropriate for the selected bearer service

For 480/1 800 MS:

PAGING RESPONSE

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 3 (DCS 1 800) supported	According to PICS statement
- GSM 400 Band supported	According to PICS statement
- GSM 400 Associated radio capability	Corresponding to GSM 480 band
- Associated radio capability 2	Corresponding to DCS 1 800 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is mandatory.
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the first channel	appropriate for the selected bearer service

For 900/1 800 MS:

PAGING RESPONSE

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- Band 1 (P-GSM) supported	According to PICS statement
- Band 2 (E-GSM) supported	According to PICS statement
- Band 3 (DCS 1 800) supported	According to PICS statement
- R-Band (R-GSM) supported	According to PICS statement
- Associated radio capability 1	Corresponding to GSM 900 band
- Associated radio capability 2	Corresponding to DCS 1 800 band
- R-Band Associated radio capability	Corresponding to R-GSM 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is mandatory.
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the first channel	appropriate for the selected bearer service

For 710/1 900 MS, 750/1 900 MS:

PAGING RESPONSE

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- GSM 710 Associated radio capability	Corresponding to GSM 710 band
- GSM 750 Associated radio capability	Corresponding to GSM 750 band
- PCS 1 900 Associated radio capability	Corresponding to PCS 1 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is mandatory.
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the first channel	appropriate for the selected bearer service

For 850/1 900 MS:

PAGING RESPONSE

Information element	Value/remark
Mobile station Classmark 2	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark	
- ES IND	Shall indicate early autonomous sending of CLASSMARK CHANGE
- RF power capability	corresponding to the frequency band in use
Additional MS Classmark information	
- GSM 850 Associated radio capability	Corresponding to GSM 850 band
- PCS 1 900 Associated radio capability	Corresponding to PCS 1 900 band

HANDOVER COMMAND

Information element	Value/remark
Protocol Discriminator	RR management
Cell Description	
- NCC	1
- BCC	5
- BCCH Carrier Number	590
Channel description	
- Channel type	TCH/F + ACCH's
- Timeslot number	Arbitrary value
- Training sequence code	Chosen arbitrarily
- Hopping	Single RF channel
- ARFCN	650
Handover Reference	Chosen arbitrarily from the range (0,1...255)
Power Command & Access type	
- Power level	Arbitrarily chosen, but different to the one already in use and within the range supported by the MS.
- Access type control	Sending of HANDOVER ACCESS is mandatory.
Synchronization Indication	pre-synchronized; ROT=0; NCI=0.
Timing Advance	same as in IMMEDIATE ASSIGNMENT
Mode of the first channel	appropriate for the selected bearer service

26.11.6 Multiband signalling / Default messages contents

Default SYSTEM INFORMATION

The following parameters shall be coded into the system information messages. Parameters shall be coded according to 3GPP TS 04.08 / 3GPP TS 44.018.

SYSTEM INFORMATION TYPE 2bis, SYSTEM INFORMATION TYPE 5bis, SYSTEM INFORMATION TYPE 7 and SYSTEM INFORMATION TYPE 8 messages are not used.

For 450/900 MS:

SYSTEM INFORMATION TYPE 1

Information Element	Value/remark
Cell channel description	
For Cell A	
- Format identifier	Range 128
- Cell Allocation ARFCN	ARFCN 263, 267, 275 and 279
For Cell B	
- Format identifier	Bit map 0
- Cell Allocation ARFCN	ARFCN 20, 30, 50 and 70
RACH control parameters	see below
SI1 rest octets	see below

SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 282, 284, 287, 290, 293
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
- EXT-IND	"This IE carries the complete BA"
NCC permitted	see below
RACH control parameters	see below

SYSTEM INFORMATION TYPE 2ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 1024
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
For Cell B	
- Format notation	Range 128
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 282, 284, 287, 290, 293
SI 2ter rest octets	see below

SYSTEM INFORMATION TYPE 3

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Control Channel Description	see below
Cell options	see below
Cell selection parameters	see below
RACH control parameters	see below
SI3 rest octets	
SI 2ter Indicator	System Information 2ter is available
Early Sending Classmark Control	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 4

Information Element	Value/remark
Location Area Identification	see below
Cell selection parameters	see below
RACH control parameters	see below
CBCH Channel Description	see below
CBCH Mobile Allocation	see below
SI4 rest octets	see below

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 282, 284, 287, 290, 293
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
- EXT-IND	This IE carries the complete BA

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2 Multiband reporting For Cell A	0
- Format notation	Range 1024
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
For Cell B	
- Format notation	Range 128
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 282, 284, 287, 290, 293

SYSTEM INFORMATION TYPE 6

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Cell options	see below
NCC permitted	see below

Common contents of information elements in SYSTEM INFORMATION TYPE 1 to 6 messages.

CBCH Channel Description	Not present
CBCH Mobile Allocation	Not present
Cell identity	
CI VALUE	0001H for cell A, 0002H for cell B
Cell options	
Power Control Indicator	power control indicator is not set
DTX Indicator	MS shall not use DTX
RADIO LINK TIME-OUT	8 SACCH blocks
Cell selection parameters	
CELL RESELECT HYSTERESIS	12 dB
MS-TXPWR-MAX-CCH	Minimum level
RXLEV-ACCESS-MIN	Minimum level
ACS	There are no additional cell parameters included in SI7 and SI8
NECI	New establishment cause not supported
Control Channel Description	
ATT	No Attach/Detach
BS-AG-BLKS-RES	0 blocks reserved
CCCH-CONF	Combined CCCH/SDCCH
BS-PA-MFRMS	5 multiframes
T3212	Infinite
L2 pseudo length	
SI 1	21
SI 2	22
SI 2ter	18
SI 3	18
SI 4	12
Location Area Identification	
MCC	001 decimal
MNC	01 decimal
LAC	0001H
Message Type	
SI 1	00011001
SI 2	00011010
SI 2ter	00000011
SI 3	00011011
SI 4	00011100
SI 5	00011101
SI 5ter	00000110
SI 6	00011110
NCC permitted	00000010
RACH control parameters	
MAX RETRANS	Max 1 retrans
TX-INTEGER	5 slots used
CELL BAR ACCESS	Not barred
CALL RE-ESTABLISHMENT	Not Allowed
EMERGENCY CALL	Allowed
ACCESS CONTROL CLASS (0...9, 11...15)	None Barred
SI 1 rest octets	Not used (all bits are set to spare)
SI 2 rest octets	Not used (all bits are set to spare)
SI 2ter rest octets	Not used (all bits are set to spare)
SI 4 rest octets	Not used (all bits are set to spare)

Default settings for cell A

Downlink input level	63 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 263

Default settings for cell B

Downlink input level	53 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 20

For 480/900 MS:

SYSTEM INFORMATION TYPE 1

Information Element	Value/remark
Cell channel description	
For Cell A	
- Format identifier	Range 128
- Cell Allocation ARFCN	ARFCN 310, 315, 322, 326
For Cell B	
- Format identifier	Bit map 0
- Cell Allocation ARFCN	ARFCN 20, 30, 50 and 70
RACH control parameters	see below
SI1 rest octets	see below

SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 329, 331, 334, 337, 340
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
- EXT-IND	"This IE carries the complete BA"
NCC permitted	see below
RACH control parameters	see below

SYSTEM INFORMATION TYPE 2ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Bit map 0
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
For Cell B	
- Format notation	Range 128
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 329, 331, 334, 337, 340
SI 2ter rest octets	see below

SYSTEM INFORMATION TYPE 3

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Control Channel Description	see below
Cell options	see below
Cell selection parameters	see below
RACH control parameters	see below
SI3 rest octets	
SI 2ter Indicator	System Information 2ter is available
Early Sending Classmark Control	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 4

Information Element	Value/remark
Location Area Identification	see below
Cell selection parameters	see below
RACH control parameters	see below
CBCH Channel Description	see below
CBCH Mobile Allocation	see below
SI4 rest octets	see below

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 329, 331, 334, 337, 340
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
- EXT-IND	This IE carries the complete BA

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 1024
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
For Cell B	
- Format notation	Range 128
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 329, 331, 334, 337, 340

SYSTEM INFORMATION TYPE 6

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Cell options	see below
NCC permitted	see below

Common contents of information elements in SYSTEM INFORMATION TYPE 1 to 6 messages.

CBCH Channel Description	Not present
CBCH Mobile Allocation	Not present
Cell identity	
CI VALUE	0001H for cell A, 0002H for cell B
Cell options	
Power Control Indicator	power control indicator is not set
DTX Indicator	MS shall not use DTX
RADIO LINK TIME-OUT	8 SACCH blocks
Cell selection parameters	
CELL RESELECT HYSTERESIS	12 dB
MS-TXPWR-MAX-CCH	Minimum level
RXLEV-ACCESS-MIN	Minimum level
ACS	There are no additional cell parameters included in SI7 and SI8
NECI	New establishment cause not supported
Control Channel Description	
ATT	No Attach/Detach
BS-AG-BLKS-RES	0 blocks reserved
CCCH-CONF	Combined CCCH/SDCCH
BS-PA-MFRMS	5 multiframes
T3212	Infinite
L2 pseudo length	
SI 1	21
SI 2	22
SI 2ter	18
SI 3	18
SI 4	12
Location Area Identification	
MCC	001 decimal
MNC	01 decimal
LAC	0001H
Message Type	
SI 1	00011001
SI 2	00011010
SI 2ter	00000011
SI 3	00011011
SI 4	00011100
SI 5	00011101
SI 5ter	00000110
SI 6	00011110
NCC permitted	00000010
RACH control parameters	
MAX RETRANS	Max 1 retrans
TX-INTEGER	5 slots used
CELL BAR ACCESS	Not barred
CALL RE-ESTABLISHMENT	Not Allowed
EMERGENCY CALL	Allowed
ACCESS CONTROL CLASS (0...9, 11...15)	None Barred
SI 1 rest octets	Not used (all bits are set to spare)
SI 2 rest octets	Not used (all bits are set to spare)
SI 2ter rest octets	Not used (all bits are set to spare)
SI 4 rest octets	Not used (all bits are set to spare)

Default settings for cell A

Downlink input level	63 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 310

Default settings for cell B

Downlink input level	53 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 20

For 450/1 800 MS:

SYSTEM INFORMATION TYPE 1

Information Element	Value/remark
Cell channel description	
For Cell A	
- Format identifier	Range 128
- Cell Allocation ARFCN	ARFCN 263, 267, 275 and 279
For Cell B	
- Format identifier	Range 512
- Cell Allocation ARFCN	ARFCN 590, 650, 750 and 850
RACH control parameters	see below
SI1 rest octets	see below

SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 282, 284, 287, 290, 293
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
- EXT-IND	"This IE carries the complete BA"
NCC permitted	see below
RACH control parameters	see below

SYSTEM INFORMATION TYPE 2ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
For Cell B	
- Format notation	Range 128
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 282, 284, 287, 290, 293
SI 2ter rest octets	see below

SYSTEM INFORMATION TYPE 3

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Control Channel Description	see below
Cell options	see below
Cell selection parameters	see below
RACH control parameters	see below
SI3 rest octets	
SI 2ter Indicator	System Information 2ter is available
Early Sending Classmark Control	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 4

Information Element	Value/remark
Location Area Identification	see below
Cell selection parameters	see below
RACH control parameters	see below
CBCH Channel Description	see below
CBCH Mobile Allocation	see below
SI4 rest octets	see below

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 282, 284, 287, 290, 293
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
- EXT-IND	This IE carries the complete BA

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
For Cell B	
- Format notation	Range 128
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 261, 263, 282, 284, 287, 290, 293

SYSTEM INFORMATION TYPE 6

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Cell options	see below
NCC permitted	see below

Common contents of information elements in SYSTEM INFORMATION TYPE 1 to 6 messages.

CBCH Channel Description	Not present
CBCH Mobile Allocation	Not present
Cell identity	
CI VALUE	0001H for cell A, 0002H for cell B
Cell options	
Power Control Indicator	power control indicator is not set
DTX Indicator	MS shall not use DTX
RADIO LINK TIME-OUT	8 SACCH blocks
Cell selection parameters	
CELL RESELECT HYSTERESIS	12 dB
MS-TXPWR-MAX-CCH	Minimum level
RXLEV-ACCESS-MIN	Minimum level
ACS	There are no additional cell parameters included in SI7 and SI8
NECI	New establishment cause not supported
Control Channel Description	
ATT	No Attach/Detach
BS-AG-BLKS-RES	0 blocks reserved
CCCH-CONF	Combined CCCH/SDCCH
BS-PA-MFRMS	5 multiframes
T3212	Infinite
L2 pseudo length	
SI 1	21
SI 2	22
SI 2ter	18
SI 3	18
SI 4	12
Location Area Identification	
MCC	001 decimal
MNC	01 decimal
LAC	0001H
Message Type	
SI 1	00011001
SI 2	00011010
SI 2ter	00000011
SI 3	00011011
SI 4	00011100
SI 5	00011101
SI 5ter	00000110
SI 6	00011110
NCC permitted	00000010
RACH control parameters	
MAX RETRANS	Max 1 retrans
TX-INTEGER	5 slots used
CELL BAR ACCESS	Not barred
CALL RE-ESTABLISHMENT	Not Allowed
EMERGENCY CALL	Allowed
ACCESS CONTROL CLASS (0...9, 11...15)	None Barred
SI 1 rest octets	Not used (all bits are set to spare)
SI 2 rest octets	Not used (all bits are set to spare)
SI 2ter rest octets	Not used (all bits are set to spare)
SI 4 rest octets	Not used (all bits are set to spare)

Default settings for cell A

Downlink input level	63 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 263

Default settings for cell B

Downlink input level	53 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 590

For 480/1 800 MS:

SYSTEM INFORMATION TYPE 1

Information Element	Value/remark
Cell channel description	
For Cell A	
- Format identifier	Range 128
- Cell Allocation ARFCN	ARFCN 310, 315, 322, 326
For Cell B	
- Format identifier	Range 512
- Cell Allocation ARFCN	ARFCN 590, 650, 750 and 850
RACH control parameters	see below
SI1 rest octets	see below

SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 329, 331, 334, 337, 340
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
- EXT-IND	"This IE carries the complete BA"
NCC permitted	see below
RACH control parameters	see below

SYSTEM INFORMATION TYPE 2ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
For Cell B	
- Format notation	Range 128
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 329, 331, 334, 337, 340
SI 2ter rest octets	see below

SYSTEM INFORMATION TYPE 3

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Control Channel Description	see below
Cell options	see below
Cell selection parameters	see below
RACH control parameters	see below
SI3 rest octets	
SI 2ter Indicator	System Information 2ter is available
Early Sending Classmark Control	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 4

Information Element	Value/remark
Location Area Identification	see below
Cell selection parameters	see below
RACH control parameters	see below
CBCH Channel Description	see below
CBCH Mobile Allocation	see below
SI4 rest octets	see below

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Range 128
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 329, 331, 334, 337, 340
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
- EXT-IND	This IE carries the complete BA

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
For Cell B	
- Format notation	Range 128
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 308, 310, 329, 331, 334, 337, 340

SYSTEM INFORMATION TYPE 6

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Cell options	see below
NCC permitted	see below

Common contents of information elements in SYSTEM INFORMATION TYPE 1 to 6 messages.

CBCH Channel Description	Not present
CBCH Mobile Allocation	Not present
Cell identity	
CI VALUE	0001H for cell A, 0002H for cell B
Cell options	
Power Control Indicator	power control indicator is not set
DTX Indicator	MS shall not use DTX
RADIO LINK TIME-OUT	8 SACCH blocks
Cell selection parameters	
CELL RESELECT HYSTERESIS	12 dB
MS-TXPWR-MAX-CCH	Minimum level
RXLEV-ACCESS-MIN	Minimum level
ACS	There are no additional cell parameters included in SI7 and SI8
NECI	New establishment cause not supported
Control Channel Description	
ATT	No Attach/Detach
BS-AG-BLKS-RES	0 blocks reserved
CCCH-CONF	Combined CCCH/SDCCH
BS-PA-MFRMS	5 multiframes
T3212	Infinite
L2 pseudo length	
SI 1	21
SI 2	22
SI 2ter	18
SI 3	18
SI 4	12
Location Area Identification	
MCC	001 decimal
MNC	01 decimal
LAC	0001H
Message Type	
SI 1	00011001
SI 2	00011010
SI 2ter	00000011
SI 3	00011011
SI 4	00011100
SI 5	00011101
SI 5ter	00000110
SI 6	00011110
NCC permitted	00000010
RACH control parameters	
MAX RETRANS	Max 1 retrans
TX-INTEGER	5 slots used
CELL BAR ACCESS	Not barred
CALL RE-ESTABLISHMENT	Not Allowed
EMERGENCY CALL	Allowed
ACCESS CONTROL CLASS	None Barred
(0...9, 11...15)	
SI 1 rest octets	Not used (all bits are set to spare)
SI 2 rest octets	Not used (all bits are set to spare)
SI 2ter rest octets	Not used (all bits are set to spare)
SI 4 rest octets	Not used (all bits are set to spare)

Default settings for cell A

Downlink input level	63 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 310

Default settings for cell B

Downlink input level	53 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 590

For 900/1 800 MS:

SYSTEM INFORMATION TYPE 1

Information Element	Value/remark
Cell channel description	
For Cell A	
- Format identifier	Bit map 0
- Cell Allocation ARFCN	ARFCN 20, 30, 50 and 70
For Cell B	
- Format identifier	Range 512
- Cell Allocation ARFCN	ARFCN 590, 650, 750 and 850
RACH control parameters	see below
SI1 rest octets	see below

SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
- EXT-IND	"This IE carries the complete BA"
NCC permitted	see below
RACH control parameters	see below

SYSTEM INFORMATION TYPE 2ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
For Cell B	
- Format notation	Range 1024
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
SI 2ter rest octets	see below

SYSTEM INFORMATION TYPE 3

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Control Channel Description	see below
Cell options	see below
Cell selection parameters	see below
RACH control parameters	see below
SI3 rest octets	
SI 2ter Indicator	System Information 2ter is available
Early Sending Classmark Control	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 4

Information Element	Value/remark
Location Area Identification	see below
Cell selection parameters	see below
RACH control parameters	see below
CBCH Channel Description	see below
CBCH Mobile Allocation	see below
SI4 rest octets	see below

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	Bit map 0
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
- EXT-IND	This IE carries the complete BA

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 810 and 870
For Cell B	
- Format notation	Range 1024
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 10, 20, 80, 90, 100, 110 and 120

SYSTEM INFORMATION TYPE 6

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Cell options	see below
NCC permitted	see below

Common contents of information elements in SYSTEM INFORMATION TYPE 1 to 6 messages.

CBCH Channel Description	Not present
CBCH Mobile Allocation	Not present
Cell identity	
CI VALUE	0001H for cell A, 0002H for cell B
Cell options	
Power Control Indicator	power control indicator is not set
DTX Indicator	MS shall not use DTX
RADIO LINK TIME-OUT	8 SACCH blocks
Cell selection parameters	
CELL RESELECT HYSTERESIS	12 dB
MS-TXPWR-MAX-CCH	Minimum level
RXLEV-ACCESS-MIN	Minimum level
ACS	There are no additional cell parameters included in SI7 and SI8
NECI	New establishment cause not supported
Control Channel Description	
ATT	No Attach/Detach
BS-AG-BLKS-RES	0 blocks reserved
CCCH-CONF	Combined CCCH/SDCCH
BS-PA-MFRMS	5 multiframes
T3212	Infinite
L2 pseudo length	
SI 1	21
SI 2	22
SI 2ter	18
SI 3	18
SI 4	12
Location Area Identification	
MCC	001 decimal
MNC	01 decimal
LAC	0001H
Message Type	
SI 1	00011001
SI 2	00011010
SI 2ter	00000011
SI 3	00011011
SI 4	00011100
SI 5	00011101
SI 5ter	00000110
SI 6	00011110
NCC permitted	00000010
RACH control parameters	
MAX RETRANS	Max 1 retrans
TX-INTEGER	5 slots used
CELL BAR ACCESS	Not barred
CALL RE-ESTABLISHMENT	Not Allowed
EMERGENCY CALL	Allowed
ACCESS CONTROL CLASS (0...9, 11...15)	None Barred
SI 1 rest octets	Not used (all bits are set to spare)
SI 2 rest octets	Not used (all bits are set to spare)
SI 2ter rest octets	Not used (all bits are set to spare)
SI 4 rest octets	Not used (all bits are set to spare)

Default settings for cell A

Downlink input level	63 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 20

Default settings for cell B

Downlink input level	53 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 590

For 710/1 900 MS, 750/1 900 MS:

SYSTEM INFORMATION TYPE 1

Information Element	Value/remark
Cell channel description	
For Cell A	
- Format identifier	128 range
- Cell Allocation ARFCN	ARFCN 457, 467, 475 and 497
For Cell B	
- Format identifier	Range 512
- Cell Allocation ARFCN	ARFCN 590, 650, 750 and 807
RACH control parameters	see below
SI1 rest octets	see below

SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	128 range
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 447, 457, 480, 499, 504, 507 and 510
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 800 and 810
- EXT-IND	"This IE carries the complete BA"
NCC permitted	see below
RACH control parameters	see below

SYSTEM INFORMATION TYPE 2ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 800 and 810
For Cell B	
- Format notation	Range 1024
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 447, 457, 480, 499, 504, 507 and 510
SI 2ter rest octets	see below

SYSTEM INFORMATION TYPE 3

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Control Channel Description	see below
Cell options	see below
Cell selection parameters	see below
RACH control parameters	see below
SI3 rest octets	
SI 2ter Indicator	System Information 2ter is available
Early Sending Classmark Control	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 4

Information Element	Value/remark
Location Area Identification	see below
Cell selection parameters	see below
RACH control parameters	see below
CBCH Channel Description	see below
CBCH Mobile Allocation	see below
SI4 rest octets	see below

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	128 range
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 447, 457, 480, 499, 504, 507 and 510
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 800 and 810
- EXT-IND	This IE carries the complete BA

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 800 and 810
For Cell B	
- Format notation	Range 1024
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 447, 457, 480, 499, 504, 507 and 510

SYSTEM INFORMATION TYPE 6

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Cell options	see below
NCC permitted	see below

Common contents of information elements in SYSTEM INFORMATION TYPE 1 to 6 messages.

CBCH Channel Description	Not present
CBCH Mobile Allocation	Not present
Cell identity	
CI VALUE	0001H for cell A, 0002H for cell B
Cell options	
Power Control Indicator	power control indicator is not set
DTX Indicator	MS shall not use DTX
RADIO LINK TIME-OUT	8 SACCH blocks
Cell selection parameters	
CELL RESELECT HYSTERESIS	12 dB
MS-TXPWR-MAX-CCH	Minimum level
RXLEV-ACCESS-MIN	Minimum level
ACS	There are no additional cell parameters included in SI7 and SI8
NECI	New establishment cause not supported
Control Channel Description	
ATT	No Attach/Detach
BS-AG-BLKS-RES	0 blocks reserved
CCCH-CONF	Combined CCCH/SDCCH
BS-PA-MFRMS	5 multiframes
T3212	Infinite
L2 pseudo length	
SI 1	21
SI 2	22
SI 2ter	18
SI 3	18
SI 4	12
Location Area Identification	
MCC	001 decimal
MNC	01 decimal
LAC	0001H
Message Type	
SI 1	00011001
SI 2	00011010
SI 2ter	00000011
SI 3	00011011
SI 4	00011100
SI 5	00011101
SI 5ter	00000110
SI 6	00011110
NCC permitted	00000010
RACH control parameters	
MAX RETRANS	Max 1 retrans
TX-INTEGER	5 slots used
CELL BAR ACCESS	Not barred
CALL RE-ESTABLISHMENT	Not Allowed
EMERGENCY CALL	Allowed
ACCESS CONTROL CLASS (0...9, 11...15)	None Barred
SI 1 rest octets	Not used (all bits are set to spare)
SI 2 rest octets	Not used (all bits are set to spare)
SI 2ter rest octets	Not used (all bits are set to spare)
SI 4 rest octets	Not used (all bits are set to spare)

Default settings for cell A

Downlink input level	63 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 457

Default settings for cell B

Downlink input level	53 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 590

For 850/1 900 MS:

SYSTEM INFORMATION TYPE 1

Information Element	Value/remark
Cell channel description	
For Cell A	
- Format identifier	128 range
- Cell Allocation ARFCN	ARFCN 147, 157, 177 and 197
For Cell B	
- Format identifier	Range 512
- Cell Allocation ARFCN	ARFCN 590, 650, 750 and 807
RACH control parameters	see below
SI1 rest octets	see below

SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	128 range
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 137, 147, 207, 217, 227, 237 and 247
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 800 and 810
- EXT-IND	"This IE carries the complete BA"
NCC permitted	see below
RACH control parameters	see below

SYSTEM INFORMATION TYPE 2ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 800 and 810
For Cell B	
- Format notation	Range 1024
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 137, 147, 207, 217, 227, 237 and 247
SI 2ter rest octets	see below

SYSTEM INFORMATION TYPE 3

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Control Channel Description	see below
Cell options	see below
Cell selection parameters	see below
RACH control parameters	see below
SI3 rest octets	
SI 2ter Indicator	System Information 2ter is available
Early Sending Classmark Control	Early Sending is explicitly accepted

SYSTEM INFORMATION TYPE 4

Information Element	Value/remark
Location Area Identification	see below
Cell selection parameters	see below
RACH control parameters	see below
CBCH Channel Description	see below
CBCH Mobile Allocation	see below
SI4 rest octets	see below

SYSTEM INFORMATION TYPE 5

Information Element	Value/remark
BCCH Frequency list	
For Cell A	
- Format identifier	128 range
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 137, 147, 207, 217, 227, 237 and 247
- EXT-IND	"The information element carries the complete BA"
For Cell B	
- Format identifier	Range 512
- BCCH Allocation Sequence	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 800 and 810
- EXT-IND	This IE carries the complete BA

SYSTEM INFORMATION TYPE 5ter

Information Element	Value/remark
Neighbour Cells Description 2	0
Multiband reporting	
For Cell A	
- Format notation	Range 512
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 520, 590, 600, 700, 780, 800 and 810
For Cell B	
- Format notation	Range 1024
- BA_IND	0
- BCCH Allocation ARFCN	ARFCN 137, 147, 207, 217, 227, 237 and 247

SYSTEM INFORMATION TYPE 6

Information Element	Value/remark
Cell identity	see below
Location Area Identification	see below
Cell options	see below
NCC permitted	see below

Common contents of information elements in SYSTEM INFORMATION TYPE 1 to 6 messages.

CBCH Channel Description	Not present
CBCH Mobile Allocation	Not present
Cell identity	
CI VALUE	0001H for cell A, 0002H for cell B
Cell options	
Power Control Indicator	power control indicator is not set
DTX Indicator	MS shall not use DTX
RADIO LINK TIME-OUT	8 SACCH blocks
Cell selection parameters	
CELL RESELECT HYSTERESIS	12 dB
MS-TXPWR-MAX-CCH	Minimum level
RXLEV-ACCESS-MIN	Minimum level
ACS	There are no additional cell parameters included in SI7 and SI8
NECI	New establishment cause not supported
Control Channel Description	
ATT	No Attach/Detach
BS-AG-BLKS-RES	0 blocks reserved
CCCH-CONF	Combined CCCH/SDCCH
BS-PA-MFRMS	5 multiframes
T3212	Infinite
L2 pseudo length	
SI 1	21
SI 2	22
SI 2ter	18
SI 3	18
SI 4	12
Location Area Identification	
MCC	001 decimal
MNC	01 decimal
LAC	0001H
Message Type	
SI 1	00011001
SI 2	00011010
SI 2ter	00000011
SI 3	00011011
SI 4	00011100
SI 5	00011101
SI 5ter	00000110
SI 6	00011110
NCC permitted	00000010
RACH control parameters	
MAX RETRANS	Max 1 retrans
TX-INTEGER	5 slots used
CELL BAR ACCESS	Not barred
CALL RE-ESTABLISHMENT	Not Allowed
EMERGENCY CALL	Allowed
ACCESS CONTROL CLASS (0...9, 11...15)	None Barred
SI 1 rest octets	Not used (all bits are set to spare)
SI 2 rest octets	Not used (all bits are set to spare)
SI 2ter rest octets	Not used (all bits are set to spare)
SI 4 rest octets	Not used (all bits are set to spare)

Default settings for cell A

Downlink input level	63 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 147

Default settings for cell B

Downlink input level	53 dBmicroVolt emf
Uplink output power	Minimum supported by the MS
Propagation profile	Static
BCCH/CCCH	ARFCN 590

Default message contents for other messages

> For subclause 26.11.2 Refer to table 26.6
>
> For subclause 26.11.3 same as in subclause 26.7.
>
> For subclause 26.11.4 no tests yet defined.
>
> For subclause 26.11.5 same as in subclause 26.9.7.

26.12 Enhanced Full Rate signalling

This subclause only applies to MS supporting enhanced full rate speech.

As an EFR mobile station necessarily supports the speech full rate version 1 or both speech full rate version 1 and speech half rate version 1, conformance requirements of clause 26 fully apply to this mobile.

The purpose of this extra section is to test the different procedures which may be impacted when Enhanced full rate speech codec is used.

26.12.1 EFR signalling/ test of the channel mode modify procedure

> NOTE: This test is derived from the tests in subclauses 26.6.7.1 and 26.6.7.2 respectively entitled "Test of the channel mode modify procedure / full rate" and "Test of the channel mode modify procedure / half rate".

26.12.1.1 Conformance requirement

The MS with a TCH/F allocated acknowledges a CHANNEL MODE MODIFY message by sending a CHANNEL MODE MODIFY ACKNOWLEDGE message specifying the new mode and by swithcing to this mode when this one is set to:

- speech full rate or half rate version 1.

- speech full rate or half rate version 2.

- any other mode declared supported by the mobile.

If the mobile station does not support the indicated mode, it shall retain the old mode and return the associated channel mode information in the CHANNEL MODE MODIFY ACKNOWLEDGE message.

References

3GPP TS 02.06, subclause 3.2.3.

3GPP TS 04.08 / 3GPP TS 44.018, subclauses 3.4.6.1.1 and 3.4.6.1.2.

26.12.1.2 Test purpose

To verify that the MS with a TCH/F allocated acknowledges a CHANNEL MODE MODIFY message by sending a CHANNEL MODE MODIFY ACKNOWLEDGE message specifying the new mode and by swithcing to this mode when this one is set to:

- speech full rate or half rate version 1.

- speech full rate or half rate version 2.

- any other mode declared supported by the mobile.

To verify that the MS, in an RR connected state, acknowledges a CHANNEL MODE MODIFY message by sending a CHANNEL MODE MODIFY ACKNOWLEDGE message specifying the old mode when the new mode is not declared as supported by the mobile

26.12.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default parameters.

Mobile Station:

The MS is "idle updated", with TMSI allocated.

Specific PICS statements:

- Speech supported for Full rate version 3 (TSPC_AddInfo_Full_rate_version_3)

- 2.4 k full rate data mode (TSPC__AddInfo_24DataF)

- 4.8 k full rate data mode. (TSPC__AddInfo_48DataF)

- 9.6 k full rate data mode. (TSPC__AddInfo_96Data)

PIXIT statements:

-

Foreseen Final State of the MS

"Idle, updated", with TMSI allocated.

Test procedure

A Mobile Terminated call is initiated, however following the CHANNEL REQUEST received from the Mobile Station, the SS sends an IMMEDIATE ASSIGNMENT to the MS commanding it to go to a TCH/F. This sets the Channel Mode automatically to "Signalling Only".

The SS then sends a series of CHANNEL MODE MODIFY messages to the MS. Each time it is checked that the MS responds with a CHANNEL MODE MODIFY ACKNOWLEDGE message specifying:

- the channel mode that has been specified in the CHANNEL MODE MODIFY message, if the MS supports that mode (this mode then becomes the "channel mode in use"). If necessary, the MS shall be correctly configured in order to accept this mode.

- the channel mode that was in use when the CHANNEL MODE MODIFY message has been received, if the MS does not support the channel mode specified in the CHANNEL MODE MODIFY message.

Maximum Duration of Test

50 s.

Expected Sequence

Step	Direction	Message	Comments
1	SS->MS	PAGING REQUEST TYPE 1	Sent on correct paging subchannel
2	MS->SS	CHANNEL REQUEST	Establishment cause indicates "answer to paging"
3	SS->MS	IMMEDIATE ASSIGNMENT	Assignment to a non hopping TCH/F
4	SS->MS	CHANNEL MODE MODIFY	
5	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
6	SS->MS	CHANNEL MODE MODIFY	
7	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
8	SS->MS	CHANNEL MODE MODIFY	
9	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
10	SS->MS	CHANNEL MODE MODIFY	
11	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
12	SS->MS	CHANNEL MODE MODIFY	
13	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
14	SS->MS	CHANNEL MODE MODIFY	
15	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
16	SS->MS	CHANNEL MODE MODIFY	
17	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
18	SS->MS	CHANNEL MODE MODIFY	
19	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
20	SS->MS	CHANNEL MODE MODIFY	
21	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
22	SS->MS	CHANNEL MODE MODIFY	
23	MS->SS	CHANNEL MODE MODIDY ACKNOWLEDGE	
24	SS->MS	CHANNEL RELEASE	

Specific Message Contents

In step 4 / step 6 /step 8 / step 10 / step 12 / step 14 / step 16 / step 18 / step 20:

CHANNEL MODE MODIFY

Information Element	value/remark
Channel description	describes the already assigned dedicated channel
Channel mode	
Mode	in step 4: speech full or half rate version 2
	in step 6: data 3,6 Kb/s
	in step 8: speech full or half rate version 2
	in step 10:data 6 Kb/s
	in step 12:speech full or half rate version 2
	in step 14:data 12 Kb/s
	in step 16:speech full or half rate version 2
	in step 18:speech full or half rate version 1
	in step 20:speech full or half rate version 2

In step 22 :

CHANNEL MODE MODIFY

Information Element	value/remark
Channel description	describes the already assigned dedicated channel
Channel mode	
Mode	speech full or half rate version3
Multi-Rate configuration	adaptive multirate codec mode chosen arbitrarily (see 3GPP TS 04.08 subclause 10.5.2.21aa)

CHANNEL MODE MODIFY ACKNOWLEDGE

Channel mode	
Mode	in steps 5, 9, 13, 17, 21: speech full rate version 2 in step 7: if TSPC__AddInfo_24DataF: data 3,6 Kb/s else same as in step 5 in step 11: if TSPC__AddInfo_48DataF: data 6,0 Kb/s full rate else same as in step 9 in step 15: if TSPC__AddInfo_96Data: data 12 Kb/s full rate else same as in step 13 in step 19: speech full rate version 2 in step 23: if TSPC_AddInfo_Full_rate_version_3speech full rate version 3 else same as in step 21

26.12.2   EFR signalling/ tests of handover

With the Handover procedure, it is possible to completely alter the channels allocated to a MS. This makes it possible in particular to switch a call in progress from one cell to another. The procedure is always initiated by the network and with the MS in a dedicated mode.

Subclause 26.12.2.1 contains generic test procedures to be used for executing successful Handover tests dealing with EFR mode.

It deals with EFR signalling in the Handover/successful/active call/non synchronised case.

Table 1 contains a summary of the different combinations of parameters which have to be tested, together with a reference to the appropriate generic test procedure. If a test uses a channel rate which the MS under test does not support, the test shall be skipped.

sv1 stands for speech full/half rate version 1.

sv2 stands for speech full/half rate version 2 (enhanced full rate).

Table 1

From	To	Timing Adv.	Start Time	Syn?	State of call	Subclause	Exec Coun- ter
TCH/F, sv2, no FH	TCH/F, sv2, no FH	20	none	no	U10	26.12.2.1	1
TCH/F, sv2, no FH	TCH/F, sv2, FH	arbitrary	none	no	U10	26.12.2.1	2
TCH/F, sv2, FH	TCH/F, sv2, no FH	20	1,1s	no	U10	26.12.2.1	3
TCH/F, sv2, no FH	TCH/F, sv1, no FH	20	none	no	U10	26.12.2.1	4
TCH/F, sv1,no FH	TCH/F, sv2, no FH	arbitrary	none	no	U10	26.12.2.1	5
TCH/F, sv2, no FH	TCH/F, sv1, FH	arbitrary	none	no	U10	26.12.2.1	6
TCH/F, sv1, FH	TCH/F, sv2,FH	20	1,1	no	U10	26.12.2.1	7
TCH/F, sv2, FH	TCH/F, sv1, FH	arbitrary	none	no	U10	26.12.2.1	8
TCH/F, sv1, FH	TCH/F, sv2, no FH	arbitrary	none	no	U10	26.12.2.1	9
TCH/F, sv2, no FH	TCH/H, sv1, FH	arbitrary	none	no	U10	26.12.2.1	10
TCH/H, sv1, FH	TCH/F, sv2, FH	20	1,1	no	U10	26.12.2.1	11
TCH/F, sv2, FH	TCH/H, sv1, FH	arbitrary	none	no	U10	26.12.2.1	12
TCH/H, sv1, FH	TCH/F, sv2, noFH	20	none	no	U10	26.12.2.1	13
TCH/F, sv2, noFH	TCH/H, sv1, noFH	20	none	no	U10	26.12.2.1	14
TCH/H, sv1, noFH	TCH/F, sv2, noFH	20	none	no	U10	26.12.2.1	15

Table 2

	TCH/FS	TCH/HS	SDCCH
n	10-20	5-10	2-5
n: number of access bursts.			

26.12.2.1 EFR signalling / Handover / active call / successful case

NOTE: This test is derived from the one defined in subclause 26.6.5.1 "Handover/successful/active call/non-synchronized".

This test only applies for MS supporting full rate speech version 2 (enhanced full rate speech).

26.12.2.1.1 Conformance requirements

The MS shall correctly apply the handover procedure in the non-synchronized case when:

- a call is in progress; and

- handover is performed from a TCH/F with/without frequency hopping towards a TCH/F with/without frequency hopping; and

- the mode of either the current or the target channel is set to full rate speech version 2 (enhanced full rate speech).

The MS also supporting half rate shall correctly apply the handover procedure in the non-synchronized case when:

- a call is in progress; and

- a handover is performed between a TCH/H with/without frequency hopping and a TCH/F with/without frequency hopping; and

- the mode of the TCH/F is set to full rate speech version 2.

References

3GPP TS 04.08 / 3GPP TS 44.018 subclauses 3.4.4 and 9.1.15.

3GPP TS 04.13 subclause 5.2.6.2.

26.12.2.1.2 Test purpose

To test that the MS shall correctly apply the handover procedure in the non-synchronized case when:

- a call is in progress; and

- handover is performed from a TCH/F with/without frequency hopping towards a TCH/F with/without frequency hopping; and

- the mode of either the current or the target channel is set to full rate speech version 2 (enhanced full rate speech).

To test that the MS also supporting half rate shall correctly apply the handover procedure in the non-synchronized case when:

- a call is in progress; and

- a handover is performed between a TCH/H with/without frequency hopping and a TCH/F with/without frequency hopping; and

- the mode of the TCH/F is set to full rate speech version 2.

26.12.2.1.3 Method of test

Initial Conditions

System Simulator:

2 cells, A and B with same LAI, default parameters except.

Band	Cell A		Cell B		Both Cells
	BCCH ARFCN	Cell Allocation	BCCH ARFCN	Cell Allocation	Format
GSM 450	263	259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291	274	260, 262, 264, 266, 268, 270, 272, 274, 276, 279, 281, 283, 285, 287, 289, 291	Range 128
GSM 480	310	306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338	321	307, 309, 311, 313, 315, 317, 319, 321, 323, 326, 328, 330, 332, 334, 336, 338	Range 128
GSM 710	457	447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508	477	451, 455, 459, 461, 467, 468, 475, 477, 497, 498, 500, 501, 502, 503, 506, 508	Range 128
GSM 750	457	447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508	477	451, 455, 459, 461, 467, 468, 475, 477, 497, 498, 500, 501, 502, 503, 506, 508	Range 128
T-GSM 810	457	447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508	477	451, 455, 459, 461, 467, 468, 475, 477, 497, 498, 500, 501, 502, 503, 506, 508	Range 128
GSM 850	147	137, 144, 147, 153, 161, 169, 172, 173, 179, 186, 193, 200, 201, 202, 203, 235, 241	167	141, 145, 149, 151, 157, 158, 165, 167, 187, 193, 200, 201, 202, 203, 235, 241	Range 128
GSM 900	20	10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 75, 76, 108, 114	40	14, 18, 22, 24, 30, 31, 38, 40, 60, 66, 73, 74, 75, 76, 108, 114	Range 128
DCS 1 800	747	734, 741, 747, 754, 759, 762, 766, 767, 773, 775, 779, 782, 791, 798, 829, 832, 844	764	739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844	Range 256
PCS 1 900	647	634, 641, 647, 654, 659, 662, 666, 667, 673, 675, 679, 682, 691, 698, 729, 732, 744	664	639, 643, 646, 649, 656, 658, 661, 664, 671, 679, 682, 691, 698, 729, 732, 744	Range 256

The frame numbers of cells A and B shall be different by 100.

The timebase of cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

Mobile Station:

The MS is in the active state (U10) of a call on cell A.

Specific PICS statements:

- Speech supported for Half rate version 1 (TSPC_AddInfo_Half_rate_version_1)

PIXIT statements:

-

Foreseen Final State of the MS

The active state (U10) of a call on cell A.

Test Procedure

This procedure is repeated for execution counter M = 1 to 15.

The MS is in the active state (U10) of a call. The SS sends a HANDOVER COMMAND on the main DCCH. The MS shall (at the time defined by the Starting Time information element, if included in the message) begin to send access

bursts on the new DCCH (and optionally on the SACCH) of the target cell. The SS observes the access bursts and after receiving n (n being arbitrarily chosen between values according to table 2 of subclause 26.12.2) access bursts, the SS sends one PHYSICAL INFORMATION message with a Timing Advance as specified in table 1 of subclause 26.12.2. The MS shall activate the channel in sending and receiving mode. The MS shall establish a signalling link. The MS shall be ready to transmit a HANDOVER COMPLETE message, before '**x**' MS after the end of the PHYSICAL INFORMATION message, but not before a UA frame has been sent by the SS.

The term 'ready to transmit' is defined in 3GPP TS 04.13. The value of '**x**' depends upon the target channel and is specified in the specific message contents section.

Maximum Duration of Test

10 minutes, including 1 minute for any necessary operator actions.

Expected Sequence

This sequence is performed for an execution counter M = 1, 2.. 9 for an MS which supports enhanced full speech codec and only TCH/F .

This sequence is performed for an execution counter M = 1, 2.. 15 for an MS which supports enhanced full speech codec and TCH/F and H.

Step	Direction	Message	Comments
0	MS -> SS		The MS and SS are in the active state of a call on the channel described below.
1	SS -> MS	HANDOVER COMMAND	See Specific message contents
2	MS -> SS	HANDOVER ACCESS	Repeated on every burst of the uplink main DCCH (and optionally on the SACCH) until reception of PHYSICAL INFORMATION. Handover Reference as included in the HANDOVER COMMAND. If the HANDOVER COMMAND includes a starting time IE then the first HANDOVER ACCESS message shall be transmitted in the indicated frame (unless the indicated frame is not used by that channel, in which case the next frame used by that channel shall be used)
3	SS -> MS	PHYSICAL INFORMATION	Sent after reception of n HANDOVER ACCESS messages. See specific message contents.
4	MS -> SS	SABM	Sent without information field
5	SS -> MS	UA	
6	MS -> SS	HANDOVER COMPLETE	The message shall be ready to be transmitted before 'x' ms after the completion of step 3.
7	MS -> SS		The MS and SS are in the active state of a call on the TCH described below. The SS checks that the TCH is through connected in the correct mode.

Specific Message Contents

For M = 1:

Step 0: The MS and SS are using a full rate TCH with speech full rate version 2 and in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	See the table below.
Synchronisation Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronisation Indication	'Non synchronised'.
- Normal Cell Indication	Ignore out of range timing advance.

HANDOVER COMMAND	
Band	**BCCH ARFCN**
GSM 450	274
GSM 480	321
GSM 710	477
GSM 750	477
T-GSM 810	477
GSM 850	167
GSM 900	40
DCS 1 800	764
PCS 1 900	664

PHYSICAL INFORMATION

Information Element	**value/remarks**
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH with speech full rate version 2 and in non hopping mode on cell B.

For M = 2:

Step 0: The MS and SS are using a full rate TCH with speech full rate version 2 and in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	**value/remarks**
As default message contents, except: Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	See the table below.
Channel Description	
- Channel Type	TCH/F + ACCHs
- Timeslot number	Chosen arbitrarily, but not Zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Synchronisation Indication IE is not included. Channel Mode IE is not included. Frequency List after time	
- Frequency List	Allocate frequencies as per the table below

HANDOVER COMMAND			
Band	**BCCH ARFCN**	**Frequency Format**	**Frequency List**
GSM 450	263		259, 261, 263, 265, 277, 279, 281, 283, 285, 287, 289, 291
GSM 480	310		306, 308, 310, 312, 324, 326, 328, 330, 332, 334, 336, 338
GSM 710	457		447, 454, 457, 463, 496, 498, 500, 501, 502, 503, 506, 508
GSM 750	457		447, 454, 457, 463, 496, 498, 500, 501, 502, 503, 506, 508
T-GSM 810	457		447, 454, 457, 463, 496, 498, 500, 501, 502, 503, 506, 508
GSM 850	147		137, 144, 147, 153, 186, 193, 200, 201, 202, 203, 235, 241
GSM 900	20		10, 17, 20, 26, 59, 66, 73, 74, 75, 76,108, 114
DCS 1 800	747	Range 256	747, 775, 779, 782, 791, 798, 829, 832, 844
PCS 1 900	647	Range 256	647, 675, 679, 682, 691, 698, 729, 732, 744

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except: Timing advance	Arbitrarily selected but different to default value.

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH with speech full rate version 2 and in hopping mode on cell A.

For M = 3:

Step 0: The MS and SS are using a full rate TCH ith speech full rate version 2 and in hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except: Cell Description 　- Network Colour Code 　- Base Station Colour Code 　- BCCH Carrier Number Synchronisation Indication 　- Report Observed Time Difference 　- Synchronisation Indication 　- Normal Cell Indication Starting Time	 1 5 See the table below. Shall not be included. 'Non synchronised'. Out of range timing advance shall trigger a handover failure procedure. Indicates the frame number of cell B that will occur approximately 1,1 seconds (238 frames have elapsed) after the HANDOVER COMMAND is sent by cell A.

HANDOVER COMMAND	
Band	**BCCH ARFCN**
GSM 450	274
GSM 480	321
GSM 710	477
GSM 750	477
T-GSM 810	477
GSM 850	167
GSM 900	40
DCS 1 800	764
PCS 1 900	664

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH with speech full rate version 2 and in non-hopping mode on cell B.

For M = 4:

Step 0: The MS and SS are using a full rate TCH with full rate speech version 2 and in non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks

As default message contents, except:
Cell Description
    - Network Colour Code
    - Base Station Colour Code
    - BCCH Carrier Number
Synchronisation Indication
    - Report Observed Time Difference
    - Synchronisation Indication
    - Normal Cell Indication
Mode of the first channel
    - Mode
	
	1
	5
	263 See the table below.
	
	Shall not be included.
	'Non synchronised'.
	Ignore out of range timing advance.
	
	speech full rate or half rate version 1

HANDOVER COMMAND	
Band	**BCCH ARFCN**
GSM 450	263
GSM 480	310
GSM 710	457
GSM 750	457
T-GSM 810	457
GSM 850	147
GSM 900	20
DCS 1 800	747
PCS 1 900	647

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH with speech full rate version 1 and in non hopping mode on cell A.

For M = 5:

Step 0: The MS and SS are using a full rate TCH with full rate speech version 1 and in non-hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks

As default message contents, except:
Cell Description
    - Network Colour Code
    - Base Station Colour Code
    - BCCH Carrier Number
Synchronisation Indication
    - Report Observed Time Difference
    - Synchronisation Indication
    - Normal Cell Indication
Mode of the first channel
    - Mode
	
	1
	5
	See the table below.
	
	Shall not be included.
	'Non synchronised'.
	Ignore out of range timing advance.
	
	speech full rate version 2

HANDOVER COMMAND	
Band	**BCCH ARFCN**
GSM 450	274
GSM 480	321
GSM 710	477
GSM 750	477
T-GSM 810	167
GSM 850	477
GSM 900	40
DCS 1 800	764
PCS 1 900	664

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except: Timing advance	 Arbitrarily selected but different to default value.

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH with speech full rate version 2 and in non hopping mode on cell B.

For M = 6:

Step 0: The MS and SS are using a full rate TCH with speech full rate version 2 and non-hopping mode on cell B.

HANDOVER COMMAND

Information Element	value/remarks

As default message contents, except:
Cell Description
   - Network Colour Code
   - Base Station Colour Code
   - BCCH Carrier Number
Channel Description
   - Channel Type
   - Timeslot number
   - Training Sequence Code
   - Hopping
   - MAIO
 	
   - HSN
Synchronisation Indication IE is not included.
Mode of the first channel.
   - Mode
Frequency List after time
   - Frequency List
	
	1
	5
	See the table below.
	
	TCH/F + ACCHs
	Chosen arbitrarily, but not Zero
	Chosen arbitrarily
	RF hopping channel.
	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency List IE.
	Chosen arbitrarily from the set (1,2,..63)
	
	speech full rate or half rate version 1
	
	Allocates frequencies as per the table below

HANDOVER COMMAND				
Band	**BCCH ARFCN**	**Frequency Format**	**Frequency List**
GSM 450	263		259, 261, 263, 265, 277, 279, 281, 283, 285, 287, 289, 291
GSM 480	310		306, 308, 310, 312, 324, 326, 328, 330, 332, 334, 336, 338
GSM 710	457		447, 454, 457, 463, 496, 498, 500, 501, 502, 503, 506, 508
GSM 750	457		447, 454, 457, 463, 496, 498, 500, 501, 502, 503, 506, 508
T-GSM 810	457		447, 454, 457, 463, 496, 498, 500, 501, 502, 503, 506, 508
GSM 850	147		137, 144, 147, 153, 186, 193, 200, 201, 202, 203, 235, 241
GSM 900	20		10, 17, 20, 26, 59, 66, 73, 74, 75, 76,108, 114
DCS 1 800	747	Range 256	747, 775, 779, 782, 791, 798, 829, 832, 844
PCS 1 900	647	Range 256	647, 675, 679, 682, 691, 698, 729, 732, 744

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents, except: Timing advance	 Arbitrarily selected but different to default value.

Step 6: x = 500

Step 7: The MS and SS are using a full rate TCH with speech full rate version 1 and hopping mode on cell A.

For M = 7:

Step 0: The MS and SS are using a full rate TCH with full rate speech version 1 and in hopping mode on cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	1
- Base Station Colour Code	5
- BCCH Carrier Number	See the table below.
Channel Description	
- Channel Type	TCH/F + ACCHs
- TDMA offset	Chosen arbitrarily
- Timeslot number	Chosen arbitrarily, but not Zero
- Training Sequence Code	Chosen arbitrarily
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1,2,..63)
Frequency List after time	
- Frequency List	Allocates frequencies as per the table below
Synchronisation Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronisation Indication	'Non synchronised'.
- Normal Cell Indication	Ignore out of range timing advance.
Starting Time	Indicates the frame number of cell B. that will occur approximately 1,1 seconds (238 frames have elapsed) after the HANDOVER COMMAND is sent by cell A.
Mode of the first channel	
- Mode	speech full rate version 2

HANDOVER COMMAND			
Band	**BCCH ARFCN**	**Frequency Format**	**Frequency List**
GSM 450	274	Range 128	260, 262, 264, 266, 276, 279, 281, 283, 285, 287, 289, 291
GSM 480	321	Range 128	307, 309, 311, 313, 323, 326, 328, 330, 332, 334, 336, 338
GSM 710	477	Range 128	451, 455, 459, 461, 497, 498, 500, 501, 502, 503,506, 508
GSM 750	477	Range 128	451, 455, 459, 461, 497, 498, 500, 501, 502, 503,506, 508
T-GSM 810	477	Range 128	451, 455, 459, 461, 497, 498, 500, 501, 502, 503,506, 508
GSM 850	167	Range 128	141, 145, 149, 151, 187, 193, 200, 201, 202, 203, 235, 241
GSM 900	40	Bit Map 0	14, 18, 22, 24, 60, 66, 73, 74, 75, 76,108, 114
DCS 1 800	764	Range 1024	749, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844
PCS 1 900	664	Range 1024	649, 658, 661, 664, 671, 679, 682, 791, 798, 729, 732, 744

PHYSICAL INFORMATION

Information Element	value/remarks
As default message contents.	

Step 6: x = 750

Step 7: The MS and SS are using a full rate TCH with full rate speech version 2 and in hopping mode on cell B.

For M = 8:

Step 0: The MS and SS are using a full rate TCH with full rate speech version 2 and in hopping mode on cell B.

HANDOVER COMMAND

same as for M = 6

PHYSICAL INFORMATION

same as for M = 6

Step 6: x = 750

Step 7: The MS and SS are using a full rate TCH with speech full rate version 1 and in hopping mode on cell A.

For M = 9:

Step 0: The MS and SS are using a full rate TCH with speech full rate version 1 and in hopping mode on cell A.

HANDOVER COMMAND

same as for M = 5.

PHYSICAL INFORMATION

same as For M = 5.

Step 6: x = 750

Step 7: The MS and SS are using a full rate TCH with speech full rate version 2 and in non hopping mode on cell B.

For M = 10:

Step 0: The MS and SS are using a full rate TCH with full rate speech version 2 and in non hopping mode on cell B.

HANDOVER COMMAND

same as for M = 6 except:

- Channel Description
- Channel Type: TCH/H + ACCHs

PHYSICAL INFORMATION

same as for M = 6

Step 6: x = 750

Step 7: The MS and SS are using a half rate TCH with speech half rate version 1 and in hopping mode on cell A.

For M = 11:

Step 0: The MS and SS are using a half rate TCH with speech half rate version 1 and in hopping mode on cell A.

HANDOVER COMMAND

same as for M = 7

PHYSICAL INFORMATION

same as For M = 7.

Step 6: x = 750

Step 7: The MS and SS are using a full rate TCH with speech full rate version 2 and in hopping mode on cell B.

For M = 12:

Step 0: The MS and SS are using a full rate TCH with full rate speech version 2 and in hopping mode on cell B.

HANDOVER COMMAND

same as for M = 6 except:

Channel Description - Channel Type	TCH/H + ACCHs

PHYSICAL INFORMATION

same as for M = 6

Step 6: x = 750

Step 7: The MS and SS are using a half rate TCH with speech half rate version 1 and in hopping mode on cell A.

For M = 13:

Step 0: The MS and SS are using a half rate TCH with speech half rate version 1 and in hopping mode on cell A.

HANDOVER COMMAND

same as for M = 1 except:

Mode of the first channel - Mode	speech full rate version 2

PHYSICAL INFORMATION

same as For M = 1.

Step 6: x = 750

Step 7: The MS and SS are using a full rate TCH with speech full rate version 2 and in non hopping mode on cell B.

For M = 14:

Step 0: The MS and SS are using a full rate TCH with full rate speech version 2 and in non hopping mode on cell B.

HANDOVER COMMAND

same as for M = 4 except:

Channel Description - Channel Type	TCH/H + ACCHs

PHYSICAL INFORMATION

same as for M = 4

Step 6: x = 750

Step 7: The MS and SS are using a half rate TCH with speech half rate version 1 and in non hopping mode on cell A.

For M = 15:

Step 0: The MS and SS are using a half rate TCH with speech half rate version 1 and in non hopping mode on cell A.

HANDOVER COMMAND

same as for M = 1 except:

Mode of the first channel	
- Mode	speech full rate version 2

PHYSICAL INFORMATION

same as For M = 1.

Step 6: x = 750

Step 7: The MS and SS are using a full rate TCH with speech full rate version 2 and in non hopping mode on cell B.

26.12.3 EFR Signalling / Structured procedures / MS originated call / late assignment

NOTE: this test is derived from the one defined in subclause 26.9.3 and entitled "Structured procedures / MS originated call / late assignment".

26.12.3.1 Conformance requirement

1) The MS shall indicate and include in the mobile originating SETUP for speech call all the speech versions that it supports.

2) Upon receipt of the ASSIGNMENT COMMAND message specifying either speech full rate version 1 or speech full rate version 2 or speech half rate version 1 (for an MS also supporting half rate), the Mobile Station starts a normal channel assignment procedure. It means that the MS initiates a local end release of link layer connections, disconnects the physical channels, commands the switching to the assigned channels and initiates the establishment of lower layer connections (this includes the activation of the channels, their connection and the establishment of the data links). After the main signalling link is successfully established, the MS returns an ASSIGNMENT COMPLETE message, specifying cause 'normal event', to the network on the main DCCH.

3, 4) The call control entity of the Mobile Station in the "call initiated" state, in the "mobile originating call proceeding" state or in the "call delivered" state, shall, upon receipt of a CONNECT message:

- attach the user connection to the radio path;

- return a CONNECT ACKNOWLEDGE message.

References

Conformance requirement 1: 3GPP TS 04.08 / 3GPP TS 24.008 subclauses 10.5.4.5 and 10.5.4.5.1, and 3GPP TS 02.06 subclause 3.2.3.

Conformance requirement 2: 3GPP TS 04.08 / 3GPP TS 44.018 subclauses 3.4.3.1 and 3.4.3.2.

Conformance requirement 3: 3GPP TS 04.08 / 3GPP TS 24.008 subclause 5.2.1.6.

26.12.3.2 Test purpose

1) To verify that the MS indicates and includes in the mobile originating SETUP for speech call all the speech versions that it supports.

2) To verify that subsequently after receipt of an IMMEDIATE ASSIGNMENT message allocating an SDCCH, after completion of establishment of the main signalling link, after having sent a CM SERVICE REQUEST message, after having successfully performed authentication and cipher mode setting procedures, after having sent a SETUP message, after having received a CALL PROCEEDING message followed by an ALERTING message and an ASSIGNMENT COMMAND message allocating either speech full rate version 1 TCH or speech full rate version 2 TCH or speech half rate version 1 TCH (for an MS also supporting half rate version 1), the MS sends an ASSIGNMENT COMPLETE message.

3) To verify that subsequently, after the suite of actions specified in test purposes 1 and 2, the MS after receiving a CONNECT message returns a CONNECT ACKNOWLEDGE message.

4) To verify that after the suite of actions specified in test purposes 1 and 2, the MS after receiving a CONNECT message attaches the user connection to the radio path. (This is checked by verifying that there is a point in time after transmission of the first L2 frame containing the (complete) CONNECT message, where the MS is sending appropriate speech or data frames whenever it doesn't have to transmit or acknowledge an I frame on layer 2 of the FACCH.)

26.12.3.3 Method of test

Specific PICS statements:

- Speech supported for Half rate version 1 (TSPC_AddInfo_Half_rate_version_1)

PIXIT statements:

- Way to indicate mobile originated alerting.

-. Way to display the called number

Initial Conditions

System Simulator:

1 cell, default parameters.

Mobile Station:

The MS is in MM-state "idle, updated" with valid TMSI and CKSN.

Foreseen Final State of the MS

The MS has a MO call in state U10, "active".

Test procedure

The following test is performed for all rates (full rate/half rate) supported by the MS:

The MS is made to initiate a speech call. The call is established with late assignment.

Maximum Duration of Test

3 minutes.

Expected Sequence

This test is repeated for execution counter M = 1, 2 for an MS supporting full rate channels only.

This test is repeated for execution counter M = 1, 2, 3 for an MS supporting both half rate speech version 1 and full rate channels.

Step	Direction	Message	Comments
1	MS		The "called number" is entered
2	MS		
3	MS -> SS	CHANNEL REQUEST	Establishment cause is "originating call and the network does not set the NECI bit to 1".
4	SS -> MS	IMMEDIATE ASSIGNMENT	
5	MS -> SS	CM SERVICE REQUEST	Message is contained in SABM.
6	SS -> MS	AUTHENTICATION REQ	
7	MS -> SS	AUTHENTICATION RESP	SRES specifies correct value.
8	SS -> MS	CIPHER MODE COMMAND	SS starts deciphering after sending the message.
9	MS -> SS	CIPHER MODE COMPLETE	Shall be sent enciphered. All following messages shall be sent enciphered.
10	SS		SS starts ciphering.
11	MS -> SS	SETUP	MS shall indicate and include all the speech versions that it supports.
12	SS -> MS	CALL PROCEEDING	
13	SS -> MS	ALERTING	
14	MS		Depending on the PICS, an alerting indication is given.
15	SS -> MS	ASSIGNMENT COMMAND	
16	MS -> SS	ASSIGNMENT COMPLETE	
17	SS -> MS	CONNECT	
18	MS -> SS	CONNECT ACKNOWLEDGE	
19	MS		The appropriate bearer channel is through connected in both directions.

Specific Message Contents:

For M = 1:

ASSIGNMENT COMMAND

See default message contents subclause 26.12.8.

SETUP

Same contents as subclause 26.12.8 but all the speech versions supported by the MS shall be indicated in octet_3a_etc(s).

For M = 2:

ASSIGNMENT COMMAND

same as for default message contents except:

Mode of the first channel	
- Mode	speech full rate or half rate version 1

SETUP

Same contents as subclause 26.12.8 but all the speech versions supported by the MS shall be indicated in octet_3a_etc(s).

For M = 3:

ASSIGNMENT COMMAND

same as for default message contents except:

Channel Description	
- TDMA offset	TCH/H+ACCHs
Mode of the first channel	
- Mode	speech full rate or half rate version 1

SETUP

same contents as subclause 26.12.8 but the supported speech versions and their preferred order indicated in octet_3a_etc(s) shall be as declared by the manufacturer.

26.12.4 Structured procedures / MS terminated call / I early assignment

NOTE: this test is derived from the one described in subclause 26.9.4 and entitled "Structured procedures / MS terminated call / early assignment".

26.12.4.1 Conformance requirement

1) In acceptance to a SETUP message indicating speech, the MS shall indicate and include in the CALL CONFIRMED message all the speech versions that it supports.

2) Upon receipt of the ASSIGNMENT COMMAND message specifying either speech full rate version 1 or speech full rate version 2 or speech half rate version 1 (for an MS also supporting half rate), the Mobile Station continues a mobile terminating call establishment with early assignment of traffic channel:

   a) by replying to the ASSIGNMENT command with an ASSIGNMENT COMPLETE message; and

   b) by continuing the call establishment by through connecting TCH in both directions if it supports immediate connect or by sending an ALERTING message otherwise.

3) For speech calls, the mobile station shall attach the user connection at latest when sending the connect message, except if there is no compatible radio resource available at this time. In this case the attachment shall be delayed until such a resource becomes available.

References

Conformance requirement 1: 3GPP TS 04.08 / 3GPP TS 24.008 subclauses 10.5.4.5 and 10.5.4.5.1
3GPP TS 02.06 subclause 3.2.3.

Conformance requirement 2: 3GPP TS 04.08 / 3GPP TS 44.018 subclauses 3.4.3.1 and 3.4.3.2.

Conformance requirement 3: 3GPP TS 04.08 / 3GPP TS 24.008 subclause 5.2.2.9.

26.12.4.2 Test purpose

1) To verify that, in acceptance to a SETUP message indicating speech, the MS indicates and includes in the CALL CONFIRMED message all the speech versions that it supports.

2) To verify that upon receipt of the ASSIGNMENT COMMAND message specifying either speech full rate version 1 or speech full rate version 2 or speech half rate version 1 (for an MS also supporting half rate speech version 1), the Mobile Station continues a mobile terminating call establishment with early assignment of traffic channel

   a) by replying to the ASSIGNMENT command with an ASSIGNMENT COMPLETE message; and

   b) by continuing the call establishment by through connecting TCH in both directions if it supports immediate connect or by sending an ALERTING message otherwise.

3) To verify that for speech calls, the mobile station shall attach the user connection at latest when sending the connect message, except if there is no compatible radio resource available at this time. In this case the attachment shall be delayed until such a resource becomes available.

26.12.4.3 Method of test

Specific PICS statements:

- Speech supported for Half rate version 1 (TSPC_AddInfo_Half_rate_version_1)

- Immediate connect supported for all circuit switched basic services. (TSPC_AddInfo_ImmConn)

PIXIT statements:

- Way to indicate alerting.

- Way to make the MS accept an incoming call after alerting.

Initial Conditions

System Simulator:

1 cell, default parameters.

Mobile Station:

The MS is in MM-state "idle, updated" with valid TMSI and CKSN.

Foreseen Final State of the MS

CC state U10-call active.

Test procedure

The following test is performed for all rates (full rate/half rate) supported by the MS:

- A teleservice is selected that is supported by the MS; if the MS supports speech, the selected teleservice is speech. If necessary, the MS is configured for that teleservice.

- The MS is paged and the resulting call is established. Having reached the active state, the MS is made to clear the call.

Maximum Duration of Test

3 minutes.

Expected Sequence

This test is repeated for execution counter M = 1, 2 for an MS supporting full rate channels only.

This test is repeated for execution counter M = 1, 2, 3 for an MS supporting both half rate speech version 1 and full rate channels.

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	Sent on the correct paging subchannel
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	MS -> SS	PAGING RESPONSE	Message is contained in SABM.
5	SS -> MS	AUTHENTICATION REQUEST	
6	MS -> SS	AUTHENTICATION RESPONSE	SRES specifies correct value.
7	SS -> MS	CIPHERING MODE COMMAND	SS starts deciphering after sending the message.
8	MS -> SS	CIPHERING MODE COMPLETE	Shall be sent enciphered. All following messages shall be sent enciphered.
9	SS		SS starts ciphering.
10	SS -> MS	SETUP	Message does not contain the signal IE.
11	MS -> SS	CALL CONFIRMED	MS shall indicate and include all the speech versions that it supports.
			If the MS supports an Immediate connection then branch A applies. If the MS doesn't support an immediate connection then branch B applies.
A12	MS -> SS	CONNECT	sent on the old channel
A13	SS -> MS	ASSIGNMENT COMMAND	
A14	MS -> SS	ASSIGNMENT COMPLETE	
B12	SS -> MS	ASSIGNMENT COMMAND	
B13	MS -> SS	ASSIGNMENT COMPLETE	Sent on the new channel.
B14	MS -> SS	ALERTING	
B15	MS		An alerting indication as defined in an PIXIT statement is given by the MS.
B16	MS		The MS is made to accept the call in the way described in a PIXIT statement.
B17	MS -> SS	CONNECT	
18	MS		the TCH shall be through connected in both directions. in the indicated mode.
19	SS -> MS	CONNECT ACKNOWLEDGE	
20	MS		The MS is made to release the call.
21	MS -> SS	DISCONNECT	
22	SS -> MS	RELEASE	
23	MS -> SS	RELEASE COMPLETE	
24	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents:

For M = 1:

ASSIGNMENT COMMAND

See default message contents subclause 26.12.8.

CALL CONFIRMED

Same contents as subclause 26.12.8 but all the speech versions supported by the MS shall be indicated in octet_3a_etc(s).

For M = 2 :

ASSIGNMENT COMMAND

Same as for default message contents except:

Mode of the first channel	
- Mode	speech full rate or half rate version 1

CALL CONFIRMED

Same contents as subclause 26.12.8 but all the speech versions supported by the MS shall be indicated in octet_3a_etc(s).

For M = 3:

ASSIGNMENT COMMAND

Same as for default message contents except:

Channel Description - TDMA offset Mode of the first channel	TCH/H+ACCHs
- Mode	speech full rate or half rate version 1

CALL CONFIRMED

Same contents as subclause 26.12.8 but all the speech versions supported by the MS shall be indicated in octet_3a_etc(s).

26.12.5 Structured procedures / emergency call

NOTE: This test is derived from the ones described in subclauses 26.9.6.1.1 and 26.9.6.1.2 and respectively entitled "Structured procedures / emergency call / idle updated, preferred channel rate " and "Structured procedures / emergency call / idle updated, non-preferred channel rate".

This test applies to mobiles supporting Enhanced Full Rate speech.

26.12.5.1 Conformance requirement

1) For R97/98 MS: The MS in the "idle, updated" state, as after a successful location update, after the number 112 (for GSM 900 and 1 DCS 800 MS), or 911 (for GSM 710, GSM 750, T_GSM 810, GSM 850, PCS 1 900 MS in USA and Canada), or 08 (for GSM 710, GSM 750, T_GSM 810, GSM 850, PCS 1 900 MS in Mexico) has been entered by user, shall send a CHANNEL REQUEST message with correct establishment cause ("emergency call").

   For R99 MS: When a SIM/USIM containing stored emergency numbers is present, those numbers are identified as emergency numbers. As an optional requirement, the ME shall also identify 112 and 911 as emergency numbers irrespective of whether these are stored in the SIM/USIM. Any other emergency numbers stored in the ME shall be ignored.
   When no emergency numbers are stored within the SIM the following numbers shall be stored in the ME for use as emergency numbers: 112, and 911.
   When no emergency numbers are stored within the USIM the following numbers shall be stored in the ME for use as emergency numbers: 112, and 911.

2) After assignment of a dedicated channel the first layer message sent by the MS on the assigned dedicated channel shall be a CM SERVICE REQUEST message specifying the correct CKSN and TMSI, with CM Service Type "emergency call establishment".

3) Authentication and cipher mode setting shall be performed successfully.

4) After cipher mode setting acceptance by the network, the MS shall send an EMERGENCY SETUP message.

5) The EFR mobile station shall accept channel assignment to a TCH full rate speech version 1 or 2 and if it supports half rate, in addition it shall accept channel assignment to a TCH half rate speech version 1.

6) After receipt of a CONNECT ACKNOWLEDGE message during correct establishment of the emergency call the TCH shall be through connected in both directions if an appropriate TCH is available.

7) The call shall be cleared correctly.

Requirement Reference:

For conformance requirement 1 and 2: 3GPP TS 04.08 / 3GPP TS 44.018 subclause 3.3.1.1,
    3GPP TS 04.08 / 3GPP TS 24.008, subclauses 5.2.1 and 4.5.1.5,
    3GPP TS 02.30, clause 4,,
    3GPP TS 22.101 clause 8.

For conformance requirement 3: 3GPP TS 04.08 / 3GPP TS 44.018, subclause 3.4.7,
    3GPP TS 04.08 / 3GPP TS 24.008, subclause 4.3.2.

For conformance requirement 4: 3GPP TS 04.08 / 3GPP TS 24.008, subclause 5.2.1.1.

For conformance requirement 5: 3GPP TS 04.08 / 3GPP TS 24.008, subclause 5.2.1.1,
3GPP TS 04.08 / 3GPP TS 44.018, subclause 3.4.3,
3GPP TS 02.06, subclause 3.2.3.

For conformance requirement 6: 3GPP TS 04.08 / 3GPP TS 24.008, subclause 5.2.1.6.

For conformance requirement 7: 3GPP TS 04.08 / 3GPP TS 24.008, subclause 5.4.

26.12.5.2 Test purpose

1) To verify that an R97/98 MS supporting speech in the MM state "idle, updated", when made to call the number 112, (for GSM 900 and DCS 1800 MS), or 911 (for GSM 710, GSM 750, T_GSM 810, GSM 850 and PCS 1 900 MS in USA and Canada), or 08 (for GSM 710, GSM 750, T_GSM 810, GSM 850 and PCS 1 900 MS in Mexico) sends a CHANNEL REQUEST message with establishment cause "emergency call".

   To verify that an R99 MS supporting speech in the MM state "idle, updated", when made to call the number 112 or 911, sends a CHANNEL REQUEST message with establishment cause "emergency call".

2) To verify that after assignment of a dedicated channel the first layer message sent by the MS on the assigned dedicated channel is a CM SERVICE REQUEST message specifying the correct CKSN and TMSI, with CM Service Type "emergency call establishment".

3) To verify that authentication and cipher mode setting are performed successfully.

4) To verify that after cipher mode setting acceptance by the SS, the MS sends an EMERGENCY SETUP message.

5) To verify that the EFR mobile station shall both accept channel assignment to a TCH full rate speech versions 1 or 2 and if it supports half rate, in addition it shall accept channel assignment to a TCH half rate speech version 1.

6) To verify that subsequently the MS has through connected the TCH in both directions.

7) To verify that the call is cleared correctly.

26.12.5.3 Method of test

Specific PICS statements:

- Speech supported for Half rate version 1 (GSM HR) (TSPC_AddInfo_Half_rate_version_1)

- Use of R99 Emergency numbers (TSPC_R99_Emerg)

PIXIT statements:

- .

Initial Conditions

System Simulator:

   1 cell, default parameters.

Mobile Station:

   The MS is in MM-state "idle, updated" with valid TMSI and CKSN.

Foreseen Final State of the MS

The MS is in MM-state "idle, updated" with valid TMSI and CKSN.

Test procedure

The MS is made to initiate an emergency call. The call is established with late assignment. Having reached the active state, the call is cleared by the SS. This procedure is repeated so that the assignment is made with all the channel rates and speech versions supported by the mobile station.

Maximum Duration of Test

3 minutes

Expected Sequence

The expected sequence is executed for M = 1 and 2, for a full rate only mobile station which includes the bearer capability IE in the emergency setup message.

The expected sequence is executed for M = 1, 2 and 3, for a dual rate mobile station which includes the bearer capability IE in the emergency setup message.

The expected sequence is executed for M = 1, for a mobile which does not include the bearer capability IE in the emergency setup message.

Step	Direction	Message	Comments
1	MS		The appropriate emergency number is entered
3	MS -> SS	CHANNEL REQUEST	Establishment cause is emergency call establishment.
4	SS -> MS	IMMEDIATE ASSIGNMENT	
5	MS -> SS	CM SERVICE REQUEST	Message is contained in SABM. The CM service type IE indicates "emergency call establishment".
6	SS -> MS	AUTHENTICATION REQUEST	
7	MS -> SS	AUTHENTICATION RESPONSE	SRES specifies correct value.
8	SS -> MS	CIPHERING MODE COMMAND	SS starts deciphering after sending the message.
9	MS -> SS	CIPHERING MODE COMPLETE	Shall be sent enciphered. All following messages shall be sent enciphered.
10	SS		SS starts ciphering.
11	MS -> SS	EMERGENCY SETUP	If the bearer capability IE is including, it shall be checked that all the speech versions supported by the MS are present.
12	SS -> MS	CALL PROCEEDING	
13	SS -> MS	ALERTING	
14	SS -> MS	ASSIGNMENT COMMAND	See specific message contents.
15	MS -> SS	ASSIGNMENT COMPLETE	
16	SS -> MS	CONNECT	
17	MS -> SS	CONNECT ACKNOWLEDGE	
18	MS		The TCH is through connected in both directions in the correct mode.
19	SS -> MS	DISCONNECT	
20	MS -> SS	RELEASE	
21	SS -> MS	RELEASE COMPLETE	
23	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Note: According to the conformance requirements there is no need to execute the test case by dialling the number 08 for an R99 MS.

Specific Message Contents:

For M= 1

ASSIGNMENT COMMAND

same as for default message contents except:

Mode of the first channel	
- Mode	Speech full rate or half rate version 1

For M= 2

ASSIGNMENT COMMAND

same as for default message contents.

For M= 3

ASSIGNMENT COMMAND

same as for default message contents except:

Channel Description	
- TDMA offset	TCH/H+ACCHs
Mode of the first channel	
- Mode	Speech full rate or half rate version 1

26.12.6 EFR Signalling / Directed Retry / Mobile Originated Call

This test is derived from the one defined in subclause 26.9.7 and entitled "Directed Retry / MS originated call".

26.12.6.1   Conformance requirements

The MS shall correctly apply the Directed Retry procedure from SDCCH/8 (no frequency hopping) to TCH/EFR with frequency hopping in the non-synchronized case during call establishment. The call control entity of the Mobile Station in the "mobile originating call proceeding" state shall, upon receipt of a CONNECT message, attach the EFR speech connection to the radio path and return a CONNECT ACKNOWLEDGE message to the SS.

References

3GPP TS 04.08 / 3GPP TS 44.018, subclauses 3.4.4 and 9.1.15.

3GPP TS 04.08 / 3GPP TS 24.008 subclause 5.2.1.6.

3GPP TS 04.13, subclause 5.2.6.2.

26.12.6.2   Test purpose

To test that, when the MS is ordered to perform a non-synchronized handover after the CALL PROCEED message, it continuously sends access bursts on the main DCCH (and optionally on the SACCH) until it receives a PHYSICAL INFORMATION message from the SS. To test that the MS correctly takes the values of the Timing Advance information element in the PHYSICAL INFORMATION message into account. To test that the MS activates the new channel correctly and transmits the HANDOVER COMPLETE message without undue delay. To test that the call control entity of the Mobile Station in the "mobile originating call proceeding" state, upon receipt of a CONNECT message, attaches the EFR speech connection to the radio path and returns a CONNECT ACKNOWLEDGE message to the SS.

26.12.6.3   Method of test

Initial Conditions

System Simulator:

    2 cells A and B with same LAI, default parameters, except:

    Cell A has:

        BCCH ARFCN = See the table below.

        Cell Allocation = Allocate as per the table below. PLMN colour code, NCC = as defaults.

        BS colour code, BCC = as defaults.

        PLMN_PERM = 00001010.

    Cell B has:

        BCCH ARFCN =See the table below.

        Cell Allocation = Allocate as per the table below.

        PLMN colour code, NCC = 3.

        BS colour code, BCC = 0.

Band	Cell A		Cell B		Both Cells
	BCCH ARFCN	Cell Allocation	BCCH ARFCN	Cell Allocation	Format
GSM 450	263	259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291	274	260, 262, 264, 266, 268, 270, 272, 274, 276, 279, 281, 283, 285, 287, 289, 291	Range 128
GSM 480	310	306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338	321	307, 309, 311, 313, 315, 317, 319, 321, 323, 326, 328, 330, 332, 334, 336, 338	Range 128
GSM 710	457	447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508	477	451, 455, 459, 461, 467, 468, 475, 477, 497, 498, 500, 501, 502, 503, 506, 508	Range 128
GSM 750	457	447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508	477	451, 455, 459, 461, 467, 468, 475, 477, 497, 498, 500, 501, 502, 503, 506, 508	Range 128
T-GSM 810	457	447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508	477	451, 455, 459, 461, 467, 468, 475, 477, 497, 498, 500, 501, 502, 503, 506, 508	Range 128
GSM 850	147	137, 144, 147, 153, 161, 169, 172, 173, 179, 186, 193, 200, 201, 202, 203, 235, 241	167	141, 145, 149, 151, 157, 158, 165, 167, 187, 193, 200, 201, 202, 203, 235, 241	Range 128
GSM 900	20	10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 75, 76, 108, 114	40	14, 18, 22, 24, 30, 31, 38, 40, 60, 66, 73, 74, 75, 76, 108, 114	Range 128
DCS 1 800	747	734, 741, 747, 754, 759, 762, 766, 767, 773, 775, 779, 782, 791, 798, 829, 832, 844	764	739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844	Range 512
PCS 1 900	647	634, 641, 647, 654, 659, 662, 666, 667, 673, 675, 679, 682, 691, 698, 729, 732, 744	664	639, 643, 646, 649, 656, 658, 661, 664, 671, 679, 682, 691, 698, 729, 732, 744	Range 512

The timebase of Cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

A non-combined SDCCH is used.

Mobile Station:

 The MS is in the "idle, updated" state, with a TMSI allocated and camped on cell A.

Specific PICS statements:

 -

PIXIT statements:

- Way to indicate mobile originated alerting.

-. Way to display the called number

Foreseen Final State of the MS

"Idle, updated" with TMSI allocated and camped on cell B.

Test Procedure

The MS is made to initiate a speech call on Cell A. After the SS has sent the CALL PROCEEDING message the SS sends a HANDOVER COMMAND message, ordering the MS to switch to cell B. The MS shall then begin to send access bursts on the new DCCH (and optionally on the SACCH) to cell B. The SS observes the access bursts and after receiving n (n being arbitrarily chosen between values according to table 26.6-2 of subclause 26.6.5) access bursts, the

SS sends one PHYSICAL INFORMATION message with an arbitrarily chosen Timing Advance. The MS shall activate the channel in sending and receiving mode. The MS shall establish a signalling link. The MS shall be ready to transmit a HANDOVER COMPLETE message before x ms after the end of the PHYSICAL INFORMATION message, but not before a UA frame has been sent by the SS. After the successful handover procedure the SS sends the ALERTING message. The correct alerting indication shall be given to the user (only applicable if the MS supports this feature). The SS sends the CONNECT message indicating that the call has been answered. The EFR speech channel shall be through connected in both directions. The MS shall send then the CONNECT ACKNOWLEDGE message as the response on the CONNECT message. Having reached the active state, the call is cleared by the SS.

The term "ready to transmit" is defined in 3GPP TS 04.13. The value of "**x**" depends upon the target channel and is specified in the specific message contents section.

Maximum Duration of Test

1 minute, including 30 s for any necessary operator actions.

Expected Sequence

Step	Direction	Message	Comments
1	--------	--------	A MO call is initiated on cell A.
2	MS -> SS	CHANNEL REQUEST	Establishment cause is "originating call and the network does not set the NECI bit to 1".
3	SS -> MS	IMMEDIATE ASSIGNMENT	See specific message contents.
4	MS -> SS	CM SERVICE REQUEST	CM Service Type = Mobile Originating Call Establishment.
5	SS -> MS	AUTHENTICATION REQUEST	
6	MS -> SS	AUTHENTICATION RESPONSE	SRES specifies correct value.
7	SS -> MS	CIPHERING MODE COMMAND	SS starts deciphering after sending the message.
8	MS -> SS	CIPHERING MODE COMPLETE	Shall be sent enciphered. All following messages shall be sent enciphered.
9	SS		SS starts ciphering.
10	MS -> SS	SETUP	EFR speech
11	SS -> MS	CALL PROCEEDING	
12	SS -> MS	HANDOVER COMMAND	See specific message contents.
13	MS -> SS	HANDOVER ACCESS	Repeated on every burst of the uplink main DCCH (and optionally on the SACCH) until reception of PHYSICAL INFORMATION. Handover Reference as included in the HANDOVER COMMAND.
14	SS -> MS	PHYSICAL INFORMATION	Sent after reception of n HANDOVER ACCESS message. Timing Advance is arbitrarily chosen.
15	MS -> SS	SABM	Sent without information field.
16	SS -> MS	UA	
17	MS -> SS	HANDOVER COMPLETE	This message shall be ready to be transmitted before "x" ms after the completion of step 14.
18	SS -> MS	ALERTING	
19	MS		Depending on the PICS, an alerting indication is given.
20	SS -> MS	CONNECT	
21	MS -> SS	CONNECT ACKNOWLEDGE	
22	MS		The EFR speech channel is through connected in both directions.
23	SS -> MS	DISCONNECT	
24	MS -> SS	RELEASE	
25	SS -> MS	RELEASE COMPLETE	
26	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents

IMMEDIATE ASSIGNMENT

Information Element	value/remark
As default message contents except:	
Channel Description	Channel Description.
- Channel Type	SDCCH/8
- TDMA offset	As default message contents.
- Timeslot number	As default message contents.
- Training Sequence Code	Chosen arbitrarily.
- Hopping	Single RF Channel.
- ARFCN	Chosen arbitrarily from the Cell Allocation of Cell A.

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	3
- Base Station Colour Code	0
- BCCH Carrier Number	See the table below.
Channel Description	
- Channel Type	TCH/F + ACCHs
- TDMA offset	Chosen arbitrarily.
- Timeslot number	Chosen arbitrarily but not zero.
- Training Sequence Code	Chosen arbitrarily.
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency List IE.
- HSN	Zero (this gives cyclic hopping).
Synchronization Indication IE is not included	
Frequency list after time	
- Frequency List	Allocate frequencies as per the following table.
Channel Mode IE	Speech (full rate version 2 or half rate version 2).

HANDOVER COMMAND			
Band	**Frequency List**		**BCCH Carrier Number**
	Format	**ARFCNs**	**ARFCN**
GSM 450	Range 128	260, 262, 264, 266, 268, 270, 272, 276, 279, 281, 283, 285, 287, 289, 291	274
GSM 480	Range 128	307, 309, 311, 313, 315, 317, 319, 323, 326, 328, 330, 332, 334, 336, 338	321
GSM 710	Range 128	451, 455, 459, 461, 467, 468, 475, 497, 498, 500, 501, 502, 503, 506, 508	477
GSM 750	Range 128	451, 455, 459, 461, 467, 468, 475, 497, 498, 500, 501, 502, 503, 506, 508	477
T-GSM 810	Range 128	451, 455, 459, 461, 467, 468, 475, 497, 498, 500, 501, 502, 503, 506, 508	477
GSM 850	Range 128	141, 145, 149, 151, 157, 158, 165, 187, 193, 200, 201, 202, 203, 235, 241	167
GSM 900	Bitmap 0	14, 18, 22, 24, 30, 31, 38, 60, 66, 73, 74, 75, 76, 108, 114	40
DCS 1 800	Range 128	746, 779	764
PCS 1 900	Range 128	646, 679	664

Step 17: "**x**" = 500.

26.12.7 EFR Signalling / Directed Retry / Mobile Terminated Call

This test is applicable to all MS which support EFR speech.

NOTE: This test is derived from the one defined in subclause 26.9.8 and entitled "Directed Retry / MS originated call".

26.12.7.1 Conformance requirements

The MS shall correctly apply the Directed Retry procedure from SDCCH/8 with frequency hopping to TCH/EFR with frequency hopping and starting time in the non-synchronized case during call establishment. The call control entity of the Mobile Station in the "call delivered" state shall, if the MS supports immediate connect, continue the call establishment by through-connecting the EFR traffic channel in both directions, or if the MS does not support immediate connect, send an ALERTING message. The MS indicates acceptance of a MT call by sending CONNECT.

The mobile station shall attach the user connection at latest when sending the CONNECT message, except if there is no compatible radio resource available at this time. In this case the attachment shall be delayed until such a resource becomes available.

References

3GPP TS 04.08 / 3GPP TS 44.018, subclauses 3.4.4 and 9.1.15.

3GPP TS 04.08 / 3GPP TS 24.008, subclauses 5.2.2.5, 5.2.2.6 and 5.2.2.9.

3GPP TS 04.13, subclause 5.2.6.2.

26.12.7.2 Test purpose

To test that when the MS is ordered to perform a non-synchronized handover after the CALL CONFIRM message, it continuously sends access bursts on the main DCCH (and optionally on the SACCH) until it receives a PHYSICAL INFORMATION message from the SS. To test that the MS correctly takes the values of the Timing Advance information element in the PHYSICAL INFORMATION message into account. To test that the MS activates the new channel correctly and transmits the HANDOVER COMPLETE message without undue delay. To test that the call control entity of the Mobile Station in the "call delivered" state, if the MS supports immediate connect, continues the call establishment by through-connecting the EFR traffic channel in both directions, or if the MS does not support immediate connect, sends an ALERTING message. To test that the MS indicates acceptance of a MT call by sending CONNECT.

To test that the mobile station attaches the user connection at latest when sending the CONNECT message, except if there is no compatible radio resource available at this time. To test that in this case the attachment is delayed until such a resource becomes available.

26.12.7.3 Method of test

Initial Conditions

System Simulator:

2 cells A and B with same LAI, default parameters, except:

Cell A has:

BCCH ARFCN = See the table below

Cell Allocation = Allocate as per the table below.

PLMN colour code, NCC = as defaults.

BS colour code, BCC = as defaults.

PLMN_PERM = 00001010.

Cell B has:

BCCH ARFCN = See the table below..

Cell Allocation = Allocate as per the table below.

PLMN colour code, NCC = 3.

BS colour code, BCC = 0.

Band	Cell A		Cell B		Both Cells
	BCCH ARFCN	Cell Allocation	BCCH ARFCN	Cell Allocation	Format
GSM 450	263	259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291	274	260, 262, 264, 266, 268, 270, 272, 274, 276, 279, 281, 283, 285, 287, 289, 291	Range 128
GSM 480	310	306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338	321	307, 309, 311, 313, 315, 317, 319, 321, 323, 326, 328, 330, 332, 334, 336, 338	Range 128
GSM 710	457	447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508	477	451, 455, 459, 461, 467, 468, 475, 477, 497, 498, 500, 501, 502, 503, 506, 508	Range 128
GSM 750	457	447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508	477	451, 455, 459, 461, 467, 468, 475, 477, 497, 498, 500, 501, 502, 503, 506, 508	Range 128
T-GSM 810	457	447, 454, 457, 463, 471, 479, 482 ,483 ,489, 496, 498, 500, 501, 502, 503, 506, 508	477	451, 455, 459, 461, 467, 468, 475, 477, 497, 498, 500, 501, 502, 503, 506, 508	Range 128
GSM 850	147	137, 144, 147, 153, 161, 169, 172, 173, 179, 186, 193, 200, 201, 202, 203, 235, 241	167	141, 145, 149, 151, 157, 158, 165, 167, 187, 193, 200, 201, 202, 203, 235, 241	Range 128
GSM 900	20	10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 75, 76, 108, 114	40	14, 18, 22, 24, 30, 31, 38, 40, 60, 66, 73, 74, 75, 76, 108, 114	Range 128
DCS 1 800	747	734, 741, 747, 754, 759, 762, 766, 767, 773, 775, 779, 782, 791, 798, 829, 832, 844	764	739, 743, 746, 749, 756, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844	Range 512
PCS 1 900	647	634, 641, 647, 654, 659, 662, 666, 667, 673, 675, 679, 682, 691, 698, 729, 732, 744	664	639, 643, 646, 649, 656, 658, 661, 664, 671, 679, 682, 691, 698, 729, 732, 744	Range 512

Both cells send SYSTEM INFORMATION TYPE 1 messages containing the complete Cell Allocation of the cell.The timebase of Cells A and B shall be such that the edges of their timeslots are not coincident at the antenna connector.

A non-combined SDCCH is used.

Mobile Station:

> The MS is in the "idle, updated" state, with a TMSI allocated and camped on cell A.

Specific PICS statements:

- Immediate connect supported for all circuit switched basic services. (TSPC_AddInfo_ImmConn)

PIXIT statements:

- Way to indicate alerting.

- Way to make the MS accept an incoming call after alerting.

Foreseen Final State of the MS

"Idle, updated" with TMSI allocated and camped on cell B.

Test Procedure

The MS is paged on Cell A. The MS responds to the PAGING REQUEST message and establishes a mobile terminated speech call on Cell A. If the MS supports immediate connect, it continues the call establishment by through-connecting the traffic channel in both directions, or if the MS does not support immediate connect, it sends an ALERTING message. The MS indicates acceptance of a MT call by sending CONNECT.

After the MS has sent the CALL CONFIRMED message (if the MS supports immediate connect then the MS sends the CONNECT message after the CALL CONFIRMED message on the old channel) the SS sends a HANDOVER COMMAND message, ordering the MS to switch to cell B. The MS shall then begin to send access bursts on the new DCCH (and optionally on the SACCH) to cell B. The SS observes the access bursts and after receiving n (n being arbitrarily chosen between values according to table 26.6-2 of subclause 26.6.5) access bursts, the SS sends one PHYSICAL INFORMATION message with an arbitrarily chosen Timing Advance. The MS shall activate the channel in sending and receiving mode. The MS shall establish a signalling link. The MS shall be ready to transmit a HANDOVER COMPLETE message before x ms after the end of the PHYSICAL INFORMATION message, but not before a UA frame has been sent by the SS. After the successful handover procedure the MS sends the ALERTING message (if the MS runs the immediate connect procedure then the MS does not send an ALERTING message). The correct alerting indication shall be given to the user (only applicable if the MS supports the feature or if the MS is not using the immediate connect procedure). After the MS sent the CONNECT message the EFR speech channel shall be through connected in both directions. The SS sends then the CONNECT ACKNOWLEDGE message as the response on the CONNECT message. Having reached the active state, the call is cleared by the SS.

The term "ready to transmit" is defined in 3GPP TS 04.13. The value of "**x**" depends upon the target channel and is specified in the specific message contents section.

Maximum Duration of Test

1 minute, including 30 s for any necessary operator actions.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	Sent on the correct paging subchannel on cell A.
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	See specific message contents.
4	MS -> SS	PAGING RESPONSE	Message is contained in SABM.
5	SS -> MS	AUTHENTICATION REQUEST	
6	MS -> SS	AUTHENTICATION RESPONSE	SRES specifies correct value.
7	SS -> MS	CIPHERING MODE COMMAND	SS starts deciphering after sending the message.
8	MS -> SS	CIPHERING MODE COMPLETE	Shall be sent enciphered. All following messages shall be sent enciphered.
9	SS		SS starts ciphering.
10	SS -> MS	SETUP	EFR speech.
11	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
A12	MS -> SS	CONNECT	sent on the old channel
A13	SS -> MS	HANDOVER COMMAND	See specific message contents.
A14	MS -> SS	HANDOVER ACCESS	Repeated on every burst of the uplink main DCCH (and optionally on the SACCH) until reception of PHYSICAL INFORMATION. Handover Reference as included in the HANDOVER COMMAND. The first HANDOVER ACCESS message shall be transmitted in the indicated frame (unless the indicated frame is not used by that channel, in which case the next frame used by that channel shall be used).
A15	SS -> MS	PHYSICAL INFORMATION	Sent after reception of n HANDOVER ACCESS message. Timing Advance is arbitrarily chosen.
A16	MS -> SS	SABM	Sent without information field.
A17	SS -> MS	UA	
A18	MS -> SS	HANDOVER COMPLETE	This message shall be ready to be transmitted before "x" ms after the completion of step A15.
B12	SS -> MS	HANDOVER COMMAND	See specific message contents.
B13	MS -> SS	HANDOVER ACCESS	Repeated on every burst of the uplink main DCCH (and optionally on the SACCH) until reception of PHYSICAL INFORMATION. Handover Reference as included in the HANDOVER COMMAND. The first HANDOVER ACCESS message shall be transmitted in the indicated frame (unless the indicated frame is not used by that channel, in which case the next frame used by that channel shall be used).
B14	SS -> MS	PHYSICAL INFORMATION	Sent after reception of n HANDOVER ACCESS message. Timing Advance is arbitrarily chosen.
B15	MS -> SS	SABM	Sent without information field.
B16	SS -> MS	UA	
B17	MS -> SS	HANDOVER COMPLETE	This message shall be ready to be transmitted before "x" ms after the completion of step B14.
B18	MS -> SS	ALERTING	
B19	MS		Gives an alerting indication as defined in a PICS/PIXIT statement is given by the MS
B20	MS		The MS is made to accept the call in the way described in a PICS/PIXIT statement
B21	MS -> SS	CONNECT	
22	MS		The TCH/EFR channel shall be through connected in both directions.
23	SS -> MS	CONNECT ACKNOWLEDGE	
24	SS -> MS	DISCONNECT	
25	MS -> SS	RELEASE	
26	SS -> MS	RELEASE COMPLETE	
27	SS -> MS	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents

IMMEDIATE ASSIGNMENT

Information Element	value/remark
As default message contents except:	
L2 pseudo length	14 octets (11 + contents of the MA).
Channel Description	
- Channel Type	SDCCH/8
- TDMA offset	As default message contents.
- Timeslot number	Arbitrary value, but not zero.
- Training Sequence Code	Chosen arbitrarily.
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Mobile Allocation.
- HSN	Chosen arbitrarily from the set (1,2,..63).
Mobile Allocation	Contents Indicates only three frequencies. See the table below.

IMMEDIATE ASSIGNMENT		
Band	**Mobile Allocation**	
	Length	**Contents**
GSM 450	3 Octets	281, 283, 285
GSM 480	3 Octets	328, 330, 332
GSM 710	3 Octets	500, 501, 502
GSM 750	3 Octets	500, 501, 502
T-GSM 810	3 Octets	500, 501, 502
GSM 850	3 Octets	200, 201, 202
GSM 900	3 Octets	73, 74, 75
DCS 1 800	3 Octets	773, 775, 779
PCS 1 900	3 Octets	673, 675, 679

HANDOVER COMMAND

Information Element	value/remarks
As default message contents, except:	
Cell Description	
- Network Colour Code	3
- Base Station Colour Code	0
- BCCH Carrier Number	See below table
Channel Description	
- Channel Type	TCH/F + ACCHs
- TDMA offset	Chosen arbitrarily.
- Timeslot number	Chosen arbitrarily, but not Zero.
- Training Sequence Code	Chosen arbitrarily.
- Hopping	RF hopping channel.
- MAIO	Chosen arbitrarily from the set (0, 1 to N-1), where N is the number of frequencies encoded in the Frequency List IE.
- HSN	Chosen arbitrarily from the set (1,2,..63).
Frequency List after time	
- Frequency List	Allocate frequencies as per the table below
Synchronization Indication	
- Report Observed Time Difference	Shall not be included.
- Synchronization Indication	"Non synchronized".
- Normal Cell Indication	Ignore out of range timing advance.
Mode of First Channel	Speech (full rate version 2 or half rate version 2).
Starting Time	Indicates the frame number of cell B. that will occur approximately 1,1 seconds (238 frames have elapsed) after the HANDOVER COMMAND is sent by cell A.

HANDOVER COMMAND			
Band	**Frequency List**		**BCCH Carrier Number**
	Format	**ARFCNs**	**ARFCN**
GSM 450	Range 128	260, 262, 264, 266, 276, 279, 281, 283, 285, 287, 289, 291	274
GSM 480	Range 128	307, 309, 311, 313, 323, 326, 328, 330, 332, 334, 336, 338	321
GSM 710	Range 128	451, 455, 459, 461, 497, 498, 500, 501, 502, 503, 506, 508	477
GSM 750	Range 128	451, 455, 459, 461, 497, 498, 500, 501, 502, 503, 506, 508	477
T-GSM 810	Range 128	451, 455, 459, 461, 497, 498, 500, 501, 502, 503, 506, 508	477
GSM 850	Range 128	141, 145, 149, 151, 187, 193, 200, 201, 202, 203, 235, 241	167
GSM 900	Bitmap 0	14, 18, 22, 24, 60, 66, 73, 74, 75, 76, 108, 114	40
DCS 1 800	Range 1 024	749, 758, 761, 764, 771, 779, 782, 791, 798, 829, 832, 844	764
PCS 1 900	Range 1 024	649, 658, 661, 664, 671, 679, 682, 691, 698, 729, 732, 744	664

Step A18 / B17: "**x**" = 750.

26.12.8 Default contents of layer 3 messages for Enhanced Full rate speech tests

Refer to table 26.6, except for:

Contents of ASSIGNMENT COMMAND message:

Protocol Discriminator	RR Management
Skip Indicator	0000
Message Type	00101110
Channel Description	
- Channel Type and TDMA offset	TCH/F + ACCHs
- Timeslot Number	Chosen arbitrarily by the test house
- Training Sequence Code	Chosen arbitrarily by the test house
- Hopping	Single RF channel
- ARFCN	See the table below
Power Command	
- Power level	Chosen arbitrarily by the test house
Mode of the first channel	
- Mode	speech full rate or half rate version 2
All other information elements	Not present

ASSIGNMENT COMMAND	
Band	**Channel Description**
	ARFCN
GSM 450	267
GSM 480	315
GSM 710	467
GSM 750	467
T-GSM 810	467
GSM 850	157
GSM 900	30
DCS 1 800	650
PCS 1 900	650

CALL CONFIRMED

Information element	**Value/remark**
Repeat indicator	Omitted
Bearer capability 1	coding as described in subclause 11.8.2.9
Bearer capability 2	Omitted
Cause	Omitted

Contents of CHANNEL MODE MODIFY message:

Protocol Discriminator	RR Management
Skip Indicator	0000
Message Type	00010000
Channel Description	same as the dedicated channel currently allocated
Channel Mode	
- Mode	speech full rate version 2

Contents of CHANNEL MODE MODIFY ACKNOWLEDGE message:

Protocol Discriminator	RR Management
Skip Indicator	0000
Message Type	00010111
Channel Description	same as the dedicated channel currently allocated
Channel Mode	
- Mode	Speech full rate version 2

Contents of HANDOVER COMMAND message:

Protocol Discriminator	RR Management
Skip Indicator	0000
Message Type	00101011
Cell Description	
- Network Colour Code	1
- Base station Colour Code	5
- BCCH Carrier Number	Set to the BCCH carrier number of cell B. (one of the values from the below table)
Channel Description	
- Channel Type and TDMA offset	TCH/F + ACCHs
- Timeslot Number	Chosen arbitrarily by the test house
- Training Sequence Code	Chosen arbitrarily by the test house
- Hopping	Single RF channel
- ARFCN	Chosen arbitrarily by the test house from those supported on the target cell
Handover Reference	
- Handover Reference Value	Chosen arbitrarily by the test house.
Power Command	
- Power level	Chosen arbitrarily by the test house
Mode of the first channel	
- Mode	speech full/half rate version 2
All other information elements	Not present

HANDOVER COMMAND	
Band	**Cell Description**
	BCCH ARFCN
GSM 450	261, 263, 282, 284, 287, 290, 293
GSM 480	308, 310, 329, 331, 334, 337, 340
GSM 710	447, 457, 480, 499, 504, 507, 510
GSM 750	447, 457, 480, 499, 504, 507, 510
T-GSM 810	447, 457, 480, 499, 504, 507, 510
GSM 850	137, 147, 207, 217, 227, 237, 247
GSM 900	10, 20, 80, 90, 100, 110, 120
DCS 1 800	of 520, 590, 600, 700, 780, 810, 870
PCS 1 900	520, 590, 650, 600, 680, 710, 770

Contents of SETUP message; (MS to SS);

Protocol Discriminator	Call Control
Transaction Identifier	
TI value	any value from the set {0, ..., 6}
TI flag	0
Message Type	0X000101
Other information elements	Not checked
Protocol Discriminator	Call Control
Transaction Identifier	set {0, ..., 6}
TI flag	0
BC repeat indicator	Not present
Bearer capability 1	coding as described in subclause 11.8.2.9
All other information elements	Not present

Contents of SETUP message; (SS to MS for speech teleservice)

Protocol Discriminator	Call Control
Transaction Identifier	
TI value	any value from the set {0, ..., 6}
TI flag	0
Message Type	0X000101
Other information elements	Not checked
Protocol Discriminator	Call Control
Transaction Identifier	set {0, ..., 6}
TI flag	0
BC repeat indicator	Not present
Bearer capability 1	
octet 2	
length	01 H
octet 3	
extension	1
radio channel requirement	01
coding standard	GSM standardized coding
transfer mode	circuit mode
information transfer capability	speech
All other information elements	Not present