

26.11 Multiband signalling

26.11.1 General considerations

This section applies only to Multiband mobile stations, as defined in GSM 02.06 section 3.2.1.

Conformance requirements of section 26 fully apply to any Multiband GSM/DCS 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 section 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 0 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)

GSM 04.08 sections 3.3.1.2.1 and 3.3.1.4.

GSM 04.13 section 5.2.11.

GSM 05.10 section 06.10

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:

1 cell.

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

BCCH carrier number 20.

Mobile Station:

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

Related PICS/PIXIT Statement(s)

Type of MS (Multiband).

Frequency bands supported.

Support rate(s) of TCH: TCH/F and/or TCH/H.

Foreseen Final State of the MS

"Idle, updated", with TMSI allocated.

Test Procedure

The test is performed twice, first time in the GSM 900 band (BCCH carrier number 20) and second time in the DCS 1 800 band (BCCH carrier number 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 number 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, 2.

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	Channel Type: SDCCH/8 Shall be sent on the correct channel Shall be ready to transmit (see GSM 05.10 section 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 ($51 * 4.62\text{ms} = 235.62\text{ ms}$). Therefore receipt of the Classmark Change within 250ms of step 4 is required.
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	MS -> SS	SABM (PAGING RESPONSE)	
5	SS -> MS	UA (PAGING RESPONSE)	
6	MS -> SS	CLASSMARK CHANGE	
7	SS -> MS	CHANNEL RELEASE	

Specific Message Contents

IMMEDIATE ASSIGNMENT

As default except:

Information element	Value/remark
Channel description <ul style="list-style-type: none"> - Channel Type - Timeslot number - Training sequence code - Hopping channel - Channel selector 	SDCCH/8 Arbitrary but not zero Arbitrary Single RF 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 <ul style="list-style-type: none"> - Key Sequence 	Key sequence number previously allocated to MS, or "111" if no key is available
Mobile station Classmark 2 <ul style="list-style-type: none"> - ES IND - RF power capability 	Shall indicate early autonomous sending of CLASSMARK CHANGE corresponding to the frequency band in use k=1; GSM 900 power capability k=2; DCS 1 800 power capability
Mobile Identity <ul style="list-style-type: none"> - odd/even - Type of identity - Identity digits 	Even TMSI TMSI previously allocated to MS

CLASSMARK CHANGE

Information element	Value/remark
Protocol Discriminator	RR management
Mobile station Classmark 2 <ul style="list-style-type: none"> - ES IND - RF power capability 	Shall indicate early autonomous sending of CLASSMARK CHANGE corresponding to the frequency band in use k=1; GSM 900 power capability k=2; DCS 1 800 power capability
Additional MS Classmark information <ul style="list-style-type: none"> - Band 1 (P-GSM) supported - Band 2 (E-GSM) supported - Band 3 (DCS 1 800) supported - Associated radio capability 1 - Associated radio capability 2 	According to PICS/PIXIT statement According to PICS/PIXIT statement According to PICS/PIXIT statement Corresponding to GSM 900 band Corresponding to DCS 1 800 band

26.11.2.2 Multiband signalling / RR / Handover

This section only applies to GSM 900 / DCS 1 800 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

GSM 04.08 sections 3.4.4 and 9.1.15.

GSM 04.13 section 5.2.6.2.

GSM 05.08 section 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 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:

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.

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:

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.

Mobile Station:

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

Related PICS/PIXIT Statements

Supported rate(s) of TCH: TCH/FS and/or TCH/HS.

Support for state U10 of the Call Control protocol.

Support for speech: yes/no

Support of multiband functionality

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 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 section 26.6.5) access bursts, the SS sends one PHYSICAL INFORMATION message with a Timing Advance as specified in table 26.6-1 of section 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 GSM 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 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.
8	SS -> MS	RELEASE COMPLETE	steps 8-10 are only performed for execution counter M = 3.
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**

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 <ul style="list-style-type: none"> - Network Colour Code - Base Station Colour Code - BCCH Carrier Number Channel description <ul style="list-style-type: none"> - Channel type - Timeslot number - Training Sequence Code - Hopping - ARFCN Synchronisation Indication <ul style="list-style-type: none"> - Report Observed Time Difference - Synchronisation Indication - Normal Cell Indication 	1 5 20 TCH/F + ACCHs Chosen arbitrarily, but not zero Chosen arbitrarily Single RF. Chosen arbitrarily from Cell Allocation for cell B. Shall not be included. 'Non synchronised'. 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 GSM 900 band to a channel in the DCS 1 800 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

GSM 04.08 section 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 GSM 900 band and the target is in the DCS 1 800 band or the contrary.

26.11.2.2.2.3 Method of test

Initial Conditions

System Simulator:

2 cells, A and B with same LAI, default parameters except:

Cell A has:
BCCH ARFCN = 20.

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.

Related PICS/PIXIT Statements

Supported rate(s) of TCH: TCH/F.
Support for state U10 of the Call Control protocol.
Support for multiband functionality.

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 at the commanded power level on the new DCCH 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 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 power 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.
2	MS -> SS	HANDOVER ACCESS	SynchronisationIndication: non synchronized.
3	MS -> SS	HANDOVER FAILURE	Several messages are sent, all with correct Handover References.
4	SS	-	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.
			The SS checks that the power 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**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.

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 both GSM and DCS 1800 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 without frequency hopping in another band.

References

GSM 04.08 sections 3.4.4 and 9.1.15.

GSM 04.13 section 5.2.6.2.

GSM 05.08 section 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 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:

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 1800 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 1800 frequencies: 743, 749, 758, 764, 779, 791, 829, 844.

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 GSM 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 DCS 1800 band.

Related PICS/PIXIT Statements

Supported rate(s) of TCH: TCH/FS and/or TCH/HS.

Support for state U10 of the Call Control protocol.

Support for speech: yes/no

Support of multiband functionality

Foreseen Final State of the MS

For execution counter M = 1

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

For execution counter M = 2

The active state (U10) of a call in hopping mode in the DCS 1800 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 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 GSM 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 GSM band, in non hopping mode on cell A. M=2, the MS and SS are using a full rate TCH in DCS 1800 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 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 M = 1:

Step 0: The MS and SS are using a full rate TCH in the GSM 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 1800 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 1800 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 1800 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
Channel Mode IE is not included.	
Mobile Allocation	Indicates DCS 1800 frequencies (743, 758, 764, 791, 844).

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 both GSM and DCS 1800 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. | GSM 04.08, subclause 3.4.3. |
| 2. | GSM 04.08, subclause 3.1.4.3. |
| 4. | GSM 04.08, subclause 3.4.3; GSM 05.08, subclause 4.2. |
| 6. | GSM 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 GSM band to hopping TCH/F in the DCS 1800 band using a different timeslot;
- 1.2 from hopping TCH/F in the DCS 1800 band to non-hopping TCH/F in the GSM band using a different timeslot;
- 1.3 from non-hopping TCH/F in the GSM band to hopping TCH/F in the DCS 1800 band using a different timeslot.
- 1.4 from hopping TCH/F in the DCS 1800 band to hopping TCH/H in the GSM 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 GSM band to non-hopping TCH/H in the DCS 1800 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 DCS 1800 band to hopping TCH/F in the GSM 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:

1 cell with GSM and DCS 1800 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.

NOTE: Cell Allocation IE broadcasted in SYSTEM INFORMATION 1 shall be coded with a format so that frequencies belonging to both GSM and DCS 1800 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.

Related PICS/PIXIT Statements

- TCH supported (Y/N).
- Supported rate(s) of TCH: TCH/F and/or TCH/H.
- The supported channel mode(s) need to be declared.
- Support of multiband functionality.

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	See specific message contents.
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	MS -> SS	PAGING RESPONSE	
5	SS -> MS	ASSIGNMENT COMMAND	
6	MS -> SS	ASSIGNMENT COMPLETE	
7	SS -> MS	ASSIGNMENT COMMAND	See specific message contents. 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.
8	MS -> SS	ASSIGNMENT COMPLETE	
9	SS -> MS	ASSIGNMENT COMMAND	See specific message contents. 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.
10	MS -> SS	ASSIGNMENT COMPLETE	
A			This test part is performed if the MS doesn't support TCH/H (see PICS/PIXIT)
A 11	SS -> MS	CHANNEL RELEASE	
B			This test part is performed if the MS supports TCH/H (see PICS/PIXIT). See specific message contents. 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.
B11	SS -> MS	ASSIGNMENT COMMAND	
B12	MS -> SS	ASSIGNMENT COMPLETE	
B13	SS -> MS	ASSIGNMENT COMMAND	
B14	MS -> SS	ASSIGNMENT COMPLETE	
B15	SS -> MS	ASSIGNMENT COMMAND	
B16	MS -> SS	ASSIGNMENT COMPLETE	
B17	SS -> MS	CHANNEL RELEASE	

Specific Message Contents**Step 3****IMMEDIATE ASSIGNMENT:**

As default message contents except Channel Description <ul style="list-style-type: none"> - Channel Type TDMA offset - Timeslot Number - Training Sequence Code - Hopping - ARFCN 	SDCCH/8 Chosen arbitrarily N, chosen arbitrarily Chosen arbitrarily Single RF Channel chosen arbitrarily from CA of the common BCCH in the GSM part of the list.
--	---

Step 5

ASSIGNMENT COMMAND:

Channel Description	TCH/F
- Channel Type and TDMA offset	(N+1) mod 8
- Timeslot Number	Chosen arbitrarily
- Training Sequence Code	RF hopping channel
- Hopping	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE.
- MAIO	Chosen arbitrarily from the set (1 to 63)
- HSN	
Power Command	Chosen arbitrarily but with a changed value.
- Power level	Not included
Frequency list IE	
Channel Mode	Signalling
- Mode	Indicates only DCS 1800 frequencies of the CA (broadcast on the BCCH).
Mobile Allocation	(739, 746, 761, 771, 782, 832)
Starting Time	Not included

Step 7

ASSIGNMENT COMMAND:

Channel Description	TCH/F
- Channel Type and TDMA offset	(N+2) mod 8
- Timeslot Number	Chosen arbitrarily
- Training Sequence Code	Single RF Channel
- Hopping	chosen arbitrarily from CA of the common BCCH in the GSM part of the list.
- ARFCN	
Power Command	Chosen arbitrarily but with a changed value.
- Power level	A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS
Channel Mode	Not Included
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 <ul style="list-style-type: none"> - Channel Type and TDMA offset - Timeslot Number - Training Sequence Code - Hopping - MAIO - HSN Power Command <ul style="list-style-type: none"> - Power level Channel Mode Frequency list IE Mobile Allocation Starting Time	TCH/F $(N+3) \bmod 8$ Chosen arbitrarily RF Hopping Channel Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE. Chosen arbitrarily from the set (1 to 63). Chosen arbitrarily but with a changed value. A non-signalling mode arbitrarily selected from the full rate capabilities declared for the MS Not Included Indicates DCS frequencies (739, 761, 832). Not included
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Step 11**ASSIGNMENT COMMAND:**

Channel Description <ul style="list-style-type: none"> - Channel Type and TDMA offset - Timeslot Number - Training Sequence Code - Hopping - MAIO - HSN Power Command <ul style="list-style-type: none"> - Power level Channel Mode Frequency list IE Cell Channel Description Mobile Allocation Starting Time	TCH/H $(N+4) \bmod 8$ Chosen arbitrarily RF hopping channel Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of frequencies in the Mobile Allocation IE. Chosen arbitrarily from the set (1 to 63) Chosen arbitrarily but with a changed value. Not included Not included Range 1024 format encodes: (10, 20, 34, 45, 52, 66, 76, 114, 739, 746, 756, 761, 771, 782, 798, 832.). Indicates frequencies (10, 20, 34, 45, 52, 66, 76, 114). Not included
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Step 13**ASSIGNMENT COMMAND:**

Channel Description	TCH/H
- Channel Type and TDMA offset	(N+5) mod 8
- Timeslot Number	Chosen arbitrarily
- Training Sequence Code	Single RF Channel
- Hopping	chosen arbitrarily from CA of the BCCH in the DCS 1800 part of the list.
- ARFCN	
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	TCH/F
- Channel Type	Chosen arbitrarily
TDMA offset	(N+6) mod 8
- Timeslot Number	Chosen arbitrarily
- Training Sequence Code	RF hopping channel
- Hopping	Chosen arbitrarily from the set (0, 1 to N-1) where N is the number of GSM frequencies in the Frequency List IE.
- MAIO	Chosen arbitrarily from the set (1 to 63)
- HSN	
Power Command	
- Power level	Chosen arbitrarily but with a changed value.
Channel Mode	A non-signalling mode arbitrarily selected from the half 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

26.11.2.3 Multiband signalling / RR / Measurement reporting

This test applies to multiband GSM 900/DCS 1 800 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 seconds 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

GSM 04.08 section 3.4.1.2, GSM 05.08 section 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:
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

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).

Related PICS/PIXIT Statements

Support for state U10 of the Call Control protocol.

Type of MS (multiband GSM 900/DCS 1 800 MS supporting simultaneous multiband operation).

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

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

SYSTEM INFORMATION TYPE 5ter:

Information Element	value/remark
Protocol Discriminator Message Type Neighbour Cells Description 2 Multiband reporting Format notation BA_IND BCCH Allocation ARFCN	RR management Sys Info 5ter. 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. Range 512 1 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-NCCELL-M	6 neighbour cell measurement results
RXLEV-NCCELL-1	See note 1
BCCH-FREQ-NCCELL-1	See note 2
BSIC-NCCELL-1	Corresponds to that of BCCH-FREQ-NCCELL-1
RXLEV-NCCELL-2	See note 1
BCCH-FREQ-NCCELL-2	See note 2
BSIC-NCCELL-2	Corresponds to that of BCCH-FREQ-NCCELL-2
RXLEV-NCCELL-3	See note 1
BCCH-FREQ-NCCELL-3	See note 2
BSIC-NCCELL-3	Corresponds to that of BCCH-FREQ-NCCELL-3
RXLEV-NCCELL-4	See note 1
BCCH-FREQ-NCCELL-4	See note 2
BSIC-NCCELL-4	Corresponds to that of BCCH-FREQ-NCCELL-4
RXLEV-NCCELL-5	See note 1
BCCH-FREQ-NCCELL-5	See note 2
BSIC-NCCELL-5	Corresponds to that of BCCH-FREQ-NCCELL-5
RXLEV-NCCELL-6	See note 1
BCCH-FREQ-NCCELL-6	See note 2
BSIC-NCCELL-6	Corresponds to that of BCCH-FREQ-NCCELL-6

NOTE 1: These actual values are not checked.

NOTE 2: k=1; report on ARFCNs 14, 20, 32, 44, 780, 880
 ie: BSIC-NCCELL 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-NCCELL 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-NCCELL 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 Multiband GSM 900 / DCS 1 800 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)

GSM 04.08 section 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. It is "idle updated" on cell A.

Related PICS/PIXIT statement(s)

Frequency bands supported (P-GSM, E-GSM, DCS 1 800).

Foreseen final state of the MS

The MS has a valid TMSI. 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 .
2	MS -> SS	CHANNEL REQUEST	"Establishment cause": Location updating.
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 .
10	MS -> SS	CHANNEL REQUEST	"Establishment cause": Location updating
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 - RF power capability	Controlled Early Classmark Sending option is implemented corresponding to frequency band used

CLASSMARK CHANGE

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

26.11.3.1.2 Location updating / periodic

This test is applicable for Multiband GSM 900 / DCS 1 800 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

- 1 GSM 04.08 section 4.4.2.
- 2 GSM 04.08 section 4.4.2.
- 3 GSM 04.08 section 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.

Related PICS/PIXIT statements

Frequency bands supported (P-GSM, E-GSM, DCS 1 800).

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 - RF power capability	Controlled Early Classmark Sending option is implemented 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. corresponding to the frequency band in use
-RF power capability Additional MS Classmark information -Band 1 (P-GSM) supported -Band 2 (E-GSM) supported -Band 3 (DCS) supported -Associated radio capability -Associated radio capability	According to PICS/PIXIT statement According to PICS/PIXIT statement According to PICS/PIXIT statement Corresponding to GSM 900 band Corresponding to DCS 1 800 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: GSM 02.07.
 Conformance requirement 2: GSM 04.08 section 3.3.1.
 Conformance requirement 3: GSM 04.08 section 3.3.1.4
 Conformance requirement 4: GSM 04.08 section 5.2.1.1.
 Conformance requirement 5: GSM 04.08 section 5.2.1.6.
 Conformance requirement 6: GSM 04.08 section 5.4.4.
 Conformance requirement 7: GSM 04.08, section 3.5.1.

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**Related PICS/PIXIT Statements**

- Interface to the human user (p1 = Y/N).
- Way to display the called number (only applicable if the MS has an interface to the human user).
- Way to indicate alerting (only applicable if the MS supports the feature).
- Way to make the MS accept an incoming call after alerting (possibly dependent on teleservice and configuration).
- Supported teleservices.
- Classmark.
- Frequency bands supported.

Initial Conditions**System Simulator:**

- 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.

Mobile Station:

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

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 HANDOVER ACCESS is optional as indicated in HANDOVER COMMAND.
	MS -> SS	HANDOVER ACCESS	
	MS -> SS	HANDOVER ACCESS	Handover Reference is included in the HANDOVER COMMAND.
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 PICS, 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:**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/PIXIT statement
- Band 2 (E-GSM) supported	According to PICS/PIXIT statement
- Band 3 (DCS 1 800) supported	According to PICS/PIXIT statement
- Associated radio capability 1	Corresponding to GSM 900 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

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:	GSM 04.08, section 3.3.1.4.
Conformance requirements 2, 3, 4:	GSM 04.08, sections 5.2.2.3.1, 5.2.2.3.2 and 5.2.2.5.
Conformance requirement 5:	GSM 04.08, section 3.4.3.1.
Conformance requirement 6:	GSM 04.08, section 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 PICS/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

Related PICS/PIXIT statements

- Interface to the human user (p1 = Y/N).
- Way to display the called number (only applicable if the MS has an interface to the human user).
- Way to indicate alerting (only applicable if the MS supports the feature).
- Way to make the MS accept an incoming call after alerting (possibly dependent on teleservice and configuration).
- Supported teleservices.
- Classmark.
- Frequency bands supported.
- Immediate connect supported (Y/N).

Initial Conditions

System Simulator:

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.

Mobile Station:

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

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 seconds.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	Sent on the correct paging subchannel Establishment cause indicates "answer to paging".
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	Message is contained in SABM.
4	MS -> SS	PAGING RESPONSE	
5	SS -> MS	UA (PAGING RESPONSE)	Indicating the frequency and power capability of the MS
6	MS -> SS	CLASSMARK CHANGE	
7	SS -> MS	AUTHENTICATION REQUEST	
8	MS -> SS	AUTHENTICATION RESP	
9	SS -> MS	CIPHERING MODE COMMAND	SRES specifies correct value. SS starts deciphering after sending the message.
10	MS -> SS	CIPHERING MODE COMPLETE	
11	SS		Shall be sent enciphered. All following messages shall be sent enciphered. SS starts ciphering. Message contains the signal IE.
12	SS -> MS	SETUP	
13	MS -> SS	CALL CONFIRMED	
A14	MS -> SS	CONNECT	
B14	MS -> SS	ALERTING	An alerting indication as defined in an PICS/PIXIT statement is given by the MS. The MS is made to accept the call in the way described in a PICS/PIXIT statement.
B15	MS		
B16	MS		
B18	MS -> SS	CONNECT	
19	SS -> MS	HANDOVER COMMAND	See specific message contents below. Handover Reference is included in the HANDOVER COMMAND.
20	MS -> SS	HANDOVER ACCESS	
21	MS -> SS	HANDOVER ACCESS	Sent without information field
22	MS -> SS	HANDOVER ACCESS	
23	MS -> SS	HANDOVER ACCESS	If the call is a speech call, the TCH shall be through connected in both directions.
24	MS -> SS	SABM	
25	SS -> MS	UA	
26	MS -> SS	HANDOVER COMPLETE	
27	MS		If the call is a data call, the MS shall through connect the TCH in both directions The MS is made to release the call.
28	SS -> MS	CONNECT ACKNOWLEDGE	
29	MS		
30	MS		
31	MS -> SS	DISCONNECT	The main signalling link is released.
32	SS -> MS	RELEASE	
33	MS -> SS	RELEASE COMPLETE	
34	SS -> MS	CHANNEL RELEASE	

Specific Message Contents:**PAGING RESPONSE**

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

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/PIXIT statement
- Band 2 (E-GSM) supported	According to PICS/PIXIT statement
- Band 3 (DCS 1 800) supported	According to PICS/PIXIT statement
- Associated radio capability 1	Corresponding to GSM 900 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

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 GSM 04.08.

SYSTEM INFORMATION TYPE 2bis, SYSTEM INFORMATION TYPE 5bis, SYSTEM INFORMATION TYPE 7 and SYSTEM INFORMATION TYPE 8 messages are not used.

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	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 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

Default message contents for other messages

- For section 26.11.2 same as in 26.6.14 for GSM 900 messages and 26.6.15 for DCS 1 800 messages.
- For section 26.11.3 same as in 26.7.
- For section 26.11.4 no tests yet defined.
- For section 26.11.5 same as in 26.9.7.