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# 41 GPRS Paging, TBF establishment/release and DCCH related procedures

## 41.1 / RR / Paging

The paging procedure is used by the network to cause the MS to establish either an RR connection for circuit switched services or a downlink GPRS packet transfer. Normally the MS listens to its paging sub-channel when DRX is used, but this can be modified by the use of different page mode. The correct monitoring of its paging sub-channel on PCCCH or CCCH in different control channel configurations and correct implementation of the paging procedure in the MS are essential. They are the test objectives of this clause.

The clause is applicable for all MS supporting GPRS service.

### 41.1.1 RR / Paging / on PCCCH for GPRS service successful

All test cases in this sub-clause test the MS paging behaviours in a network operating in Mode I or Mode III.

#### 41.1.1.1 RR / Paging / on PCCCH for GPRS service / normal paging with P-TMSI successful.

##### 41.1.1.1.1 Conformance requirements

- 1 In packet idle mode, the mobile station monitors the relevant paging sub-channels on PCCCH, if such is present in the cell. The determination of the paging group for the mobile station is defined in GSM 05.02.
- 2 MS in a specific PCCCH GROUP shall monitor the radio blocks on PCCCH corresponding to the PCCCH GROUP the mobile station belongs to and where paging may appear.
- 3 A PACKET PAGING REQUEST message on PCCCH may include more than one mobile station identification.
- 4 In response to a PACKET PAGING REQUEST, the mobile station shall initiate the uplink TBF using a PACKET CHANNEL REQUEST with cause value of 'Page Response'.

##### References

GSM 04.60, clause 5.5.1, 5.5.1.5, 6.1.2, 6.2, 6.2.2, 6.2.3

GSM 05.02, clause 6.5.1, 6.5.6

##### 41.1.1.1.2 Test purpose

To verify that upon receipt of a PACKET PAGING REQUEST message for GPRS service with paging mode set to normal, the MS in packet idle mode, GPRS attached state, is able to determine its PCCCH group and PAGING group and that the MS responds correctly with PACKET CHANNEL REQUEST with cause value of 'Page Response'.

##### 41.1.1.1.3 Method of test

##### Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present, Max-Retrans = 2, access burst type = 11 bits, BS\_PAG\_BLK\_RES = 2, BS\_PBCCH\_BLKS = 3, BS\_PCC\_CHANS = 1, BS\_PACH\_BLKS = 1, SPLIT PG CYCLE = 71 in PSI1.

Mobile Station:

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

Related PICS/PIXT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service

Test Procedure

The SS sends a PACKET PAGING REQUEST message to the MS. The paging message contains a P-TMSI addressing the MS for TBF establishment. The MS attempts two random accesses for PACKET CHANNEL REQUEST. The SS responses to the 2<sup>nd</sup> one by assigning an uplink channel. The MS sends a correct LLC PDU containing TLLI in the RLC/MAC header implicitly indicating a paging response.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info for RR connection, 2 <sup>nd</sup> Repeated Page info contains P-TMSI of the MS for TBF establishment. Sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = " Page Response ". Received on PRACH.
3	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = " Page Response ". Received on PRACH.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Random Reference = pertaining to the message received in step 3. Sent on PAGCH.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS.
6	MS -> SS	UPLINK RLC DATA BLOCK (not L3 Message)	LLC PDU implicitly indicating paging response, containing TLLI in the RLC/MAC header. Received on uplink PDTCH assigned in step 4.
7	SS -> MS	PACKET UPLINK ACK/NACK	acknowledge the received RLC data block, Final Ack Indicator = '1', a valid RRBP. Sent on PACCH.
8	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	acknowledge the RLC control message. Received on PACCH.

Specific Message Contents

Contents for SYSTEM INFORMATION and PACKET SYSTEM INFORMATION Messages:

RACH Control Parameters - Max Retrans	Max 2 retrans.
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PACKET PAGING REQUEST message:

MESSAGE_TYPE	000101
PAGE_MODE	Normal Paging
{L H<PERSISTENCE_LEVEL>}	L (not present)
{L H<NLN>}	L (not present)
{H <Repeated Page info>}	H
-	H (Page request for RR connection establishment)
- CHANNEL_NEEDED	SDDCH8
- {L   H < eMLPP_PRIORITY }	L (eMLPP_PRIORITY absent)
- { L < TMSI >   H < Mobile_identity > }	L (TMSI present)
- TMSI	TMSI not addressing the MS under test
-	L (Page request for TBF establishment)
- { L < PTMSI >   H < Mobile_identity > }	L (PTMSI present)
- PTMSI	P-TMSI allocated during GPRS attach procedure
-	L (end of repeated page info)
spare padding	Spare Padding

### 41.1.1.2 RR / Paging / on PCCCH for GPRS service / normal paging with IMSI successful

#### 41.1.1.2.1 Conformance requirements

If the MS was paged by the network with the IMSI (for GPRS service), the MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number stored. The MS shall then perform a GPRS attach or combined GPRS attach procedure.

#### References

GSM 04.08, clause 4.7.9.1

#### 41.1.1.2.2 Test purpose

To verify that the MS is able to respond to PACKET PAGING REQUEST for GPRS service when the MS is addressed with its IMSI and that the MS then performs a GPRS attach or combined GPRS attach procedure.

#### 41.1.1.2.3 Method of test

#### Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present, Max-Retrans = 2, access burst type = 11 bits, BS\_PAG\_BLKES\_RES = 3, BS\_PBCCH\_BLKES = 3, BS\_PCC\_CHANS = 1, BS\_PRACH\_BLKES = 1, SPLIT PG CYCLE = 37 in PSI1.

Mobile Station:

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

#### Related PICS/PIXIT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service,

Test Procedure

The SS sends a PACKET PAGING REQUEST message containing the IMSI of the MS for TBF establishment. The MS attempts two random accesses for PACKET CHANNEL REQUEST. The SS responses to the 2<sup>nd</sup> one by assigning an uplink channel for an open-end TBF. The MS sends an LLC PDU containing TLLI in the RLC/MAC header and ATTACH REQUEST, implicitly indicating a paging response. The SS verifies the completeness of ATTACH REQUEST and acknowledges the received two RLC data blocks with a valid RRBP and Final Ack indicator = '1'.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info contains IMSI of the MS for TBF establishment. Sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = " MM Procedure ". Received on PRACH.
3	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = " MM Procedure ". Received on PRACH.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Random Reference = pertaining to the message received in step 3. Sent on PAGCH.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS.
6	MS -> SS	UPLINK RLC DATA BLOCK (ATTACH REQUEST)	LLC PDU containing a TLLI and the first part of ATTACH REQUEST, the implicit paging response to step 1. Received on the uplink PDTCH assigned in step 4.
7	SS -> MS	PACKET UPLINK ACK/NACK	Contention resolution, acknowledge the received RLC data blocks, USF assigned. Sent on PACCH.
8	MS -> SS	UPLINK RLC DATA BLOCK	completely receive ATTACH REQUEST
9	SS -> MS	PACKET UPLINK ACK/NACK	Final Ack indicator = '1', containing valid RRBP, sent on PACCH.
10	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	acknowledge the RLC control messages. Received on PACCH.

Specific Message Contents

Contents for SYSTEM INFORMATION and PACKET SYSTEM INFORMATION Messages:

PRACH Control Parameters - MAX_RETRANS	Max 2 retransmission
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PACKET PAGING REQUEST message:

MESSAGE_TYPE	000101
PAGE_MODE	Normal Paging
{L H<PERSISTENCE_LEVEL>}	L (not present)
{L H<NLN>}	L (not present)
{H <Repeated Page info>	H
-	H (Page request for RR connection establishment)
- CHANNEL_NEEDED	SDDCH8
- {L   H < eMLPP_PRIORITY}	L (eMLPP_PRIORITY absent)
- { L < TMSI >   H < Mobile_identity > }	L (TMSI present)
- TMSI	TMSI not addressing the MS under test
-	L (Page request for TBF establishment)
- { L < PTMSI >   H < Mobile_identity > }	H (IMSI present)
- Mobile_identity	Length, type, and IMSI value stored on the SIM of the MS (GSM 04.08, 10.5.5.13 without IEI)
-	L (end of repeated page info)
spare padding	Spare Padding

PACKET CHANNEL REQUEST message in test step 2 and 3:

Access Type	Mobility Management procedure
Random Reference	Not checked.

PACKET UPLINK ACK/NACK message in step 9

MESSAGE_TYPE	001101
UPLINK_TFI	0000110
CHANNEL_CODING_COMMAND	CS-1 coding
Ack/Nack Description	
- FINAL_ACK_INDICATION	1, no retransmissions, acknowledgement of all RLC data blocks
- STARTING_SEQUENCE_NUMBER	1
- RECEIVE_BLOCK_BITMAP	indicates the two data blocks from the MS

### 41.1.1.3 RR / Paging / on PCCCH for GPRS service / extended paging with P-TMSI successful

#### 41.1.1.3.1 Conformance requirements

1. The network may send page mode information in any downlink message on PCCCH. The page mode information controls possible additional requirements on a mobile station receiving the message.
2. In packet idle mode, the paging sub-channels on PCCCH shall be monitored (by the mobile station) according to the current DRX mode and the values of the PAGING\_GROUP parameter defined for the mobile station, and possible page mode information received on PCCCH.
3. The mobile station shall take into account the page mode information received in any message received in a radio block on PCCCH corresponding to one of the paging groups defined by the different PAGING\_GROUP values for the mobile station.
4. In the extended paging mode, the mobile station is required in addition (to normal paging) to receive and analyse the possible message in the next but one block period on PCCCH where paging may occur (PPCH).

## References

GSM 04.60, clause 5.5.1, 5.5.1.5, 5.5.1.6

## 41.1.1.3.2 Test purpose

1. To verify that the MS operates in the extended page mode when it is ordered by the SS in PACKET PAGING REQUEST which does not address the MS, but on the paging sub-channel corresponding to the MS identity.
2. To verify that the MS operates in the extended page mode when it is ordered by the SS in PACKET UPLINK ASSIGNMENT on the paging sub-channel corresponding to the MS identity.
3. To verify that the MS operates in the extended page mode when it is ordered by the SS in PACKET ACCESS REJECT on the paging sub-channel corresponding to the MS identity.
4. To verify that the MS operates in the extended page mode when it is ordered by the SS in PACKET DOWNLINK ASSIGNMENT on the paging sub-channel corresponding to the MS identity.
5. To verify that the MS operates in the extended page mode when it is ordered by the SS in PACKET QUEUEING NOTIFICATION on the paging sub-channel corresponding to the MS identity.
6. To verify that the MS operates in the extended page mode when it is ordered by the SS in PACKET CELL CHANGE ORDER on the paging sub-channel corresponding to the MS identity.
7. To verify that the MS operates in the extended page mode when it is ordered by the SS in PACKET DOWNLINK DUMMY CONTROL BLOCK on the paging sub-channel corresponding to the MS identity.
8. To verify that the MS operates in the extended page mode when it is ordered by the SS in PACKET PRACH PARAMETERS on the paging sub-channel corresponding to the MS identity.
9. To verify that the MS operates in the extended page mode when it is ordered by the SS in PACKET POLLING REQUEST on the paging sub-channel corresponding to the MS identity.

## 41.1.1.3.3 Method of test

## Initial Conditions

## System Simulator:

1 cell, GPRS supported, PCCCH present, Max-Retrans = 2 BS\_PAG\_BLKES\_RES = 2, BS\_PBCCH\_BLKES = 4, BS\_PRACH\_BLKES = 1, BS\_PCC\_CHANS = 2, SPLIT PG CYCLE = 98 in PSI1.

## Mobile Station:

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

## Related PICS/PIXIT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service,

## Test Procedure

The test is repeated 9 times. Each time at the start, the SS sends one of the relevant messages listed in the corresponding test purpose to carry the Extended Paging mode. The MS is paged for TBF establishment and the paging mode is reset to Normal. After two attempts of the random access from the MS, the SS rejects the access.

## Maximum Duration of Test

5 min.

## Expected Sequence

The test sequence is repeated for  $k = 1 \dots 9$ .

1A	SS -> MS	PACKET PAGING REQUEST	k=1 1 <sup>st</sup> Repeated Page info contains P-TMSI of another MS, no other Repeated Page info, Page_Mode = " Extended Paging ". Sent on PPCH belonging to the MS.
1B	SS -> MS	PACKET UPLINK ASSIGNMENT	k=2 Random Reference = any random value not used in previous test steps of this test case. Page_Mode = " Extended Paging ". Sent on the paging sub-channel corresponding to the MS identity (PPCH).
1C	SS -> MS	PACKET ACCESS REJECT	k=3 Random Reference = any random value not used in previous test steps of this test case. Page_Mode = " Extended Paging ". Sent on the paging sub-channel corresponding to the MS identity (PPCH).
1D	SS -> MS	PACKET DOWNLINK ASSIGNMENT	k=4 TLLI = any value other than the values used in previous test steps. Page_Mode = " Extended Paging ". Sent on the paging sub-channel corresponding to the MS identity (PPCH).
1E	SS -> MS	PACKET QUEUEING NOTIFICATION	k=5 Random Reference = any random value not used in previous test steps of this test case. Page_Mode = " Extended Paging ". Sent on the paging sub-channel corresponding to the MS identity (PPCH).
1F	SS -> MS	PACKET CELL CHANGE ORDER	k=6 TLLI = any value other than the values used in previous test steps of this test case. Page_Mode = " Extended Paging ". Sent on the paging sub-channel corresponding to the MS identity (PPCH).
1G	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	k=7 Page_Mode = " Extended Paging ". Sent on the paging sub-channel corresponding to the MS identity (PPCH).
1H	SS -> MS	PACKET PRACH PARAMETERS	k=8 Page_Mode = " Extended Paging ". Sent on the paging sub-channel corresponding to the MS identity (PPCH).
1I	SS -> MS	PACKET POLLING REQUEST	k=9 TLLI = any value other than the values used in previous test steps of this test case. Page_Mode = " Extended Paging ". Sent on the paging sub-channel corresponding to the MS identity (PPCH).
2	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, no other Repeated Page info, Page_Mode = "Normal Paging". Sent on the next but one block on the same PPCH as in step 1. ACCESS TYPE = " Page Response ". Received on PRACH. ACCESS TYPE = " Page Response ". Received on PRACH. Random Reference = pertaining to the message received in step 3. Sent on PAGCH.
3	MS-> SS	PACKET CHANNEL REQUEST	
4	MS-> SS	PACKET CHANNEL REQUEST	
5	SS -> MS	PACKET ACCESS REJECT	

## Specific Message Contents

## 41.1.1.4 RR / Paging / on PCCCH for GPRS service / paging reorganisation successful

## 41.1.1.4.1 Conformance requirements

- 1 In the paging reorganisation mode the mobile station shall receive all messages on the PCCCH regardless of the BS\_PAG\_BLKES\_RES setting. It is required to receive all PBCCH messages.
- 2 When the mobile station receives the next message to a (possibly new) PAGING\_GROUP defined for the mobile station, subsequent action is defined by the possible page mode information received in that message.
- 3 When the mobile station selects a new set of PAGING\_GROUP values, the initial page mode in the mobile station shall be set to paging reorganisation.
- 4 The CONTROL\_CH\_REL field in PSII control channel description indicates, if set = 1, that the last PDCH carrying PCCCH and PBCCH will be released shortly. All mobile stations on PCCCH shall then as soon as this information has been received return to CCCH and there obey the information sent on BCCH as specified in GSM 04.08. If the field is set = 0, no channel release is pending.

## References

GSM 04.60, clause 5.5.1.5, 11.2.18

## 41.1.1.4.2 Test purpose

- 1 To verify that the MS, after reception of a message with page mode set to "paging reorganisation", answers to paging messages (with page mode set to "normal paging") sent on its old PCCCH in paging blocks which do not belong to the MS's paging sub-channel.
- 2 To test that the MS correctly determines its new paging sub-channel when the number of allocated PBCCH blocks BS\_PBCCH\_BLKES and the number of reserved blocks BS\_PAG\_BLKES\_RES are changed.
- 3 To test that the MS correctly determines its new paging sub-channel when the number of PCCCH channels is changed.
- 4 To test that the MS understands the control channel release bit in control channel description.

## 41.1.1.4.3 Method of test

## Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present, Max-Retrans = 2, access burst type = 8 bits, BS\_PAG\_BLKES\_RES = 2, BS\_PBCCH\_BLKES = 3, BS\_PRACH\_BLKES = 1, BS\_PCC\_CHANES = 1 SPLIT PG CYCLE = 65.

Mobile Station:

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

## Related PICS/PIXIT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service.



### Test Procedure

The SS sends PACKET PAGING REQUEST on PCCCH and sets Paging Mode to paging reorganisation. The MS is paged on a former access grant block. After receipt the 1<sup>st</sup> random access from the MS with the correct access type for the paging response, the SS rejects the packet access and sets the paging mode to paging reorganisation.

The test procedure is similarly repeated twice. Each time the SS changes the PCCCH organisation parameters (see the following test sequence). Then the MS is paged. The random access from the MS is rejected by the SS.

The SS resets the default system setting, but sets CONTROL\_CH\_REL. The MS is then paged on PCH. After the MS starting random access on RACH, the access from the MS is rejected.

### Maximum Duration of Test

5 min.

## Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	PAGE_MODE = "paging reorganisation", not specific to the MS. Sent on the paging block belonging to the MS. Wait two PSI1 repeat periods.
2	SS -> MS	PACKET PAGING REQUEST	Sent on a former access grant block. 1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, no other Repeated Page info, PAGE_MODE = "Normal paging".
3	MS-> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = " Page Response ". Received on PRACH.
4	SS -> MS	PACKET ACCESS REJECT	Random Reference = pertaining to the message received in step 3, PAGE_MODE = "paging reorganisation", Sent on PAGCH.
5	SS		Set BS_PBCCH_BLKs = 4 in system information messages and wait two PSI1 repeat periods.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	PAGE_MODE = "Normal paging".
7	SS -> MS	PACKET PAGING REQUEST	Sent on a new paging block belonging to the MS. 1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, no other Repeated Page info, PAGE_MODE = "Same as before".
8	MS-> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = " Page Response ". Received on PRACH.
9	SS -> MS	PACKET ACCESS REJECT	Random Reference = pertaining to the message received in step 8, PAGE_MODE = "paging reorganisation", Sent on PAGCH.
10	SS		Reconfigure the SS channels so that an additional PCCCH on slot ((k-2) mod 8) is set and indicated in the system information. k is the current slot number for PBCCH. Wait two PSI1 repeat periods
11	SS -> MS	PACKET QUEUEING NOTIFICATION	Random Reference = any random value not used in previous test steps. Page_Mode = "Normal Paging".
12	SS -> MS	PACKET PAGING REQUEST	Sent on a paging sub-channel not corresponding to the MS identity (PPCH).
13	SS -> MS	PACKET PAGING REQUEST	Sent on a new paging block belonging to the MS. 1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, no other Repeated Page info, PAGE_MODE = "Normal paging".
14	MS-> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = " Page Response ". Received on PRACH.
15	SS -> MS	PACKET ACCESS REJECT	Random Reference = pertaining to the message received in step 13, PAGE_MODE = "paging reorganisation", Sent on PAGCH.
16	SS		Restore the SS default configuration. Wait two PSI1 repeat periods. Then set CONTROL_CH_REL = 1 and wait two PSI1 repeat periods. SS stops sending all PSIs.
17	SS -> MS	PAGING REQUEST TYPE 1	Sent on PCH. 1 <sup>st</sup> Mobility Identity contains TMSI of the MS, 2 <sup>nd</sup> Mobility Identity absent. Packet Page Indication indicates a packet paging procedure.
18	MS-> SS	CHANNEL REQUEST	ACCESS TYPE = "one phase access". Received on RACH.
19	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Random Reference = pertaining to the message received in step 17, Sent on AGCH.

## Specific Message Contents

## 41.1.2 RR / Paging / on PCCCH for circuit-switched services / paging successful

### 41.1.2.0 Definition and applicability

These test cases apply to Mobile Station supporting GPRS that can operate in mode A and mode B.

### 41.1.2.1 Conformance requirements

1. When answering to a paging message the purpose of which is to trigger the establishment of an RR connection, the mobile station, whatever its MS class mode of operation, shall follow the paging response procedures as specified in GSM 04.08.
2. The MS shall enter GPRS ATTACHED.SUSPENDED sub-state when entering dedicated mode and when the MS limitations makes it unable to communicate on GPRS channels. In this sub-state, no user data should be sent and no signalling information shall be sent. The MS shall leave this sub-state when leaving dedicated mode.

### References

GSM 04.60, clause 6.1.4

GSM 04.08, clause 3.3.2.2, 4.1.3.1.3.2

### 41.1.2.2 Test purpose

1. To verify that the MS in packet idle mode, GPRS attached state, is able to determine its PCCCH group and PAGING group, and that the MS responds correctly on RACH with CHANNEL REQUEST containing cause value of 'Page Response' upon receipt of a PACKET PAGING REQUEST message for establishment of an RR connection.
2. To verify that the MS is able to respond to PACKET PAGING REQUEST for establishment of an RR connection when the MS is addressed with its TMSI and, but an another field of the paging message contains an IMSI different from that of the MS.
3. To verify that the MS is able to respond to PACKET PAGING REQUEST for establishment of an RR connection when the MS is addressed with its IMSI.

### 41.1.2.3 Method of test

#### Initial Conditions

##### System Simulator:

1 cell, GPRS supported, Network mode I, PCCCH present, Max-Retrans = 2, access burst type = 11 bits, BS\_PAG\_BLKES\_RES=2, BS\_PBCCH\_BLKES=3, BS\_PRACH\_BLKES=1, BS\_PCC\_CHANS=1, SPLIT PG CYCLE=52. CCCH is not combined with SDCCH

##### Mobile Station:

The MS is GPRS attached with a P-TMSI and a TMSI allocated and SPLIT PG CYCLE negotiated.

#### Related PICS/PIXT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800).

Support GPRS service.

Supporting GPRS MS class A.

Supporting GPRS MS class B.

Supporting GPRS MS class C.

Test Procedure

The MS is paged with the TMSI on the MS's PPCH sub-channel for RR establishment. After two random accesses from the MS on RACH the SS assigns a SDCCH8. The MS responses with PAGING RESPONSE. The test is repeated with PACKET PAGING REQUEST containing the IMSI of the MS.

Maximum Duration of Test

5 min.

Expected Sequence

The test sequence is repeated for k = 1 ... 2

Step	Direction	Message	Comments
1A	SS -> MS	PACKET PAGING REQUEST	k=1 1 <sup>st</sup> Repeated Page info contains TMSI of the MS for RR establishment, Channel needed = any channel. PAGE_MODE = "Normal Paging". The 2 <sup>nd</sup> Repeated Page info contains a PTMSI not addressing the MS, for TBF establishment. Sent on PPCH belonging to the MS.
1B	SS -> MS	PACKET PAGING REQUEST	k=2 1 <sup>st</sup> Repeated Page info contains IMSI of the MS, no other Repeated Page info. Channel needed = " any channel ", PAGE_MODE = " Normal Paging ". Sent on PPCH belonging to the MS.
2	MS -> SS	CHANNEL REQUEST	Establishment Cause = " Answer to paging ". Received on RACH. Establishment Cause = " Answer to paging ". Received on RACH. Request Reference = pertaining to the message received in step 3. Sent on AGCH. carried by information field of SABM. Received on assigned SDCCH/8. Sent on SDCCH/8.
3	MS -> SS	CHANNEL REQUEST	
4	SS -> MS	IMMEDIATE ASSIGNMENT	
5	MS -> SS	PAGING RESPONSE	
6	SS -> MS	CHANNEL RELEASE	

Specific Message Contents

Contents for SYSTEM INFORMATION and PACKET SYSTEM INFORMATION Messages:

PRACH Control Parameters - MAX_RETRANS	Max 2 retransmission
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PACKET PAGING REQUEST message in step 1A:

MESSAGE_TYPE	000101
PAGE_MODE	Normal Paging
{L H<PERSISTENCE_LEVEL>}	L (no persistence level present)
{L H<NLN>}	L (no notification list number)
{H <Repeated Page info>}	H (start of Repeated Page info)
-	H (Page request for RR connection establishment)
- CHANNEL_NEEDED	'00', any channel
-	L (no eMLPP_PRIORITY present)
-	L (TMSI)
- TMSI	TMSI allocated to the MS
-	L (Page request for TBF establishment)
- { L < PTMSI >   H < Mobile_identity > }	L (PTMSI present)
- PTMSI	P-TMSI allocated during GPRS attach procedure
-	L (end of repeated page info)
spare padding	Spare Padding

PACKET PAGING REQUEST message in step 1B:

MESSAGE_TYPE	000101
PAGE_MODE	Normal Paging
{L H<PERSISTENCE_LEVEL>}	L (no persistence level present)
{L H<NLN>}	L (no notification list number)
{H <Repeated Page info>}	H (start of Repeated Page info)
-	H (Page request for RR connection establishment)
- CHANNEL_NEEDED	any channel
-	L (no eMLPP_PRIORITY present)
-	H (mobility identity)
- LENGTH of Mobile Identity	depending on IMSI field
- Mobile identity	Length, type, and IMSI value stored on the SIM of the MS (GSM 04.08, 10.5.5.13 without IEI)
-	L ( end of Repeated Page info)
spare padding	Spare Padding

IMMEDIATE ASSIGNMENT message:

L2 pseudo length	This is the sum of the lengths of all the information elements present in the message except for the IA rest octets and L2 pseudo length IEs. For the default message the L2 pseudo length is 11.
Protocol Discriminator	RR Management.
Skip Indicator	0000
Message Type	00111111
Page Mode	
- Page Mode	Normal Paging.
Packet Response Type and Dedicated mode or TBF	
- Downlink	No meaning
- T/D	dedicated mode resource
- PR Type	immediate assignment procedure for RR connection establishment
Channel Description	
- Channel Type and TDMA offset	SDCCH/8
- TN	Chosen arbitrarily
- TSC	Chosen arbitrarily
-	0
-	00 (Binary)
- ARFCN	For GSM 450: 267 For GSM 480: 315 For GSM 900: 30 For DCS 1800: 650
Request Reference	Pertaining to last Channel Request sent by the MS.
Timing Advance	
- Timing advance value	30 bit periods.
Mobile Allocation	
- Length	0
Starting Time	Not present.
IA rest octets	Spare Padding

### 41.1.3 RR / Paging / on PCCCH / paging ignored

The MS shall ignore paging not addressing to it. If paging is not implemented correctly unnecessary accesses will be provoked on PCCCH which is shared by all MS in a same cell. This kind of the wrong paging behaviour of the same type of MS in a GSM network can block the use of PCCCH and will, therefore, cause an unacceptable degradation of the GSM services to other users of the mobile stations.

#### 41.1.3.1 Conformance requirements

1. MS in a specific PCCCH GROUP shall monitor the radio blocks on PCCCH corresponding to the PCCCH GROUP the mobile station belongs to and where paging may appear.
2. A PACKET PAGING REQUEST message on PCCCH may include more than one mobile station identification.

#### References

GSM 04.60, clause 5.5.1, 6.1.2

#### 41.1.3.2 Test purpose

1. To verify that the MS ignores PACKET PAGING REQUEST (for GPRS service) where both P-TMSI and IMSI do not address the MS although the PACKET PAGING REQUEST message is sent on specific PCCCH to which the MS belongs.

2. To verify that the MS ignores PACKET PAGING REQUEST (for circuit-switched service) where both P-TMSI and IMSI do not address the MS although the PACKET PAGING REQUEST message is sent on specific PCCCH to which the MS belongs.

Note: The 2<sup>nd</sup> test purpose is valid for GPRS MS class A and B.

#### 41.1.3.3 Method of test

##### Initial Conditions

###### System Simulator:

1 cell, GPRS supported, PCCCH present, Max-Retrans=2, access burst type=8 bits, BS\_PAG\_BLK\_RES=2, BS\_PBCCH\_BLK=3, BS\_PRACH\_BLK=1 and BS\_PCC\_CHAN=1.

###### Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and SPLIT PG CYCLE negotiated. If the MS has the class A or B of mode of operation the MS is idle, updated with a TMSI allocated.

##### Related PICS/PIXIT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service,

Supporting GPRS MS class A,

Supporting GPRS MS class B,

Supporting GPRS MS class C,

##### Test Procedure

The MS is paged for TBF establishment. The MS attempts a random access which is rejected. The MS is paged again for TBF establishment. PACKET PAGING REQUEST contains two mobility identity which do not address the MS. The MS shall not initiate the random access. The same test is repeated, but the MS is paged for RR connection establishment.

##### Maximum Duration of Test

5 min.

Expected Sequence

The test sequence is repeated for k = 1, 2. The 2<sup>nd</sup> time (k=2) is executed if the MS has the class A or B of mode of operation.

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, no other Repeated Page info, Page_Mode = "Normal Paging". Sent on PPCH belonging to the MS. ACCESS TYPE = " Page Response ". Received on PRACH. Random Reference = pertaining to the message received in step 2. Sent on PAGCH.
2	MS-> SS	PACKET CHANNEL REQUEST	
3	SS -> MS	PACKET ACCESS REJECT	
4A	SS -> MS	PACKET PAGING REQUEST	k=1, page for TBF establishment. The two Repeated Page info do not address the MS. Sent on PPCH belonging to the MS.
4B	SS -> MS	PACKET PAGING REQUEST	k=2, page for RR connection. The two Repeated Page info do not address the MS. Channel Needed = "any channel". Sent on PPCH belonging to the MS.
5	SS		Check that there is no PACKET CHANNEL REQUEST from the MS on PRACH for 5s.

Specific Message Contents

Contents for SYSTEM INFORMATION and PACKET SYSTEM INFORMATION Messages:

PRACH Control Parameters - ACCESS_BURST_TYPE - MAX_RETRANS	8 bit access burst Max 2 retransmission
--	--

PACKET PAGING REQUEST message in step 1A:

MESSAGE_TYPE	000101
PAGE_MODE	Normal Paging
{L H<PERSISTENCE_LEVEL>}	L (no persistence level present)
{L H<NLN>}	L (no notification list number)
{H <Repeated Page info>}	H (start of Repeated Page info)
-	L (Page request for TBF establishment)
-	L (PTMSI)
- PTMSI	P-TMSI value not the assigned to the MS under test
-	L (Page request for TBF establishment)
-	H (mobility identity)
- LENGTH of Mobile Identity	depending on IMSI field
- Mobile identity	IMSI different from the value stored on the SIM of the MS
-	L ( end of Repeated Page info)
spare padding	Spare Padding



PACKET PAGING REQUEST message in step 1B:

MESSAGE_TYPE	000101
PAGE_MODE	Normal Paging
{L H<PERSISTENCE_LEVEL>}	L (no persistence level present)
{L H<NLN>}	L (no notification list number)
{H <Repeated Page info>}	H (start of Repeated Page info)
-	H (Page request for RR connection establishment)
- CHANNEL_NEEDED	any channel
-	L (no eMLPP_PRIORITY present)
-	L (TMSI)
- TMSI	TMSI value not allocated to the MS
-	H (Page request for RR connection establishment)
- CHANNEL_NEEDED	any channel
-	L (no eMLPP_PRIORITY present)
-	H (IMSI)
- LENGTH of Mobile Identity	depending on IMSI field
- Mobile identity	IMSI different from the value stored on the SIM of the MS
-	L ( end of Repeated Page info)
spare padding	Spare Padding

### 41.1.4 RR / Paging / on PACCH for circuit-switched services

This sub-clause tests the MS paging behaviours in the packet transfer mode in a network operating in Mode I. The sub-clause is applicable to mobile stations supporting GPRS MS operation mode A or B.

#### 41.1.4.1 RR / Paging / on PACCH for circuit-switched services/ paging successful

This sub-clause is applicable for the MS in the class B of mode of operation.

##### 41.1.4.1.1 Conformance requirements

1. Paging initiation using PACCH applies to a mobile station supporting GPRS MS class A or B when such mobile station is in packet transfer mode and when the network operates according to mode I.
2. A mobile station operating in class B mode of operation shall abort the current GPRS data transfer(s) if it was in packet transfer mode, and suspend any GPRS activity until return to idle mode.

##### References

GSM 04.60, clause 6.1.3, 6.1.4

##### 41.1.4.1.2 Test purpose

- 1 To verify that upon receipt of a PACKET PAGING REQUEST message on PACCH for RR establishment, the class B mobile in packet transfer mode is able to abort abruptly the established TBF and to respond correctly on RACH with CHANNEL REQUEST containing cause value of 'Page Response'.
- 2 To verify that the MS is able to respond to PACKET PAGING REQUEST when the MS is addressed with its TMSI and even if another field of PACKET PAGING REQUEST contains an IMSI different from that of the MS.
- 3 To verify that the MS is able to respond to PACKET PAGING REQUEST when the MS is addressed with its IMSI.

##### 41.1.4.1.3 Method of test

##### Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present, Max-Retrans = 2, access burst type = 11 bits, BS\_PAG\_BLKES\_RES = 2, BS\_PBCCH\_BLKES = 3 and BS\_PCC\_CHANS = 1.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and SPLIT PG CYCLE negotiated.

#### Related PICS/PIXT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service,

Supporting GPRS MS class A,

Supporting GPRS MS class B,

Supporting GPRS MS class C,

#### Test Procedure

The MS is paged for a TBF establishment. After receiving a random access from the MS a PDCH operated in dynamic allocation mode is assigned. The MS is in the packet transfer mode. An USF is assigned to the MS. After receiving the first uplink RLC data block from the MS it is paged on PACCH for an RR connection establishment with the allocated TMSI. The SS acknowledges the received RLC data block with Final Ack Indicator = '1' and a valid RRBP. The MS sends PACKET CONTROL ACKNOWLEDGEMENT and CHANNEL REQUEST for Answer to Paging. The access attempt is rejected.

The test is repeated once. The difference of the second time lies in the PACKET PAGING REQUEST on PACCH containing IMSI instead of PTMSI addressing the MS.

#### Maximum Duration of Test

5 min.

#### Expected Sequence

The test sequence is repeated for  $k = 1, 2$

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, 2 <sup>nd</sup> Repeated Page info contains IMSI not addressing the MS, for packet transfer procedure, sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = " Page Response ". Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Random Reference = pertaining to the message received in step 2. Sent on PAGCH.
4A	SS -> MS	PACKET PAGING REQUEST	k=1, for RR connection 1 <sup>st</sup> Repeated Page info contains TMSI of the MS, Channel Needed = " TCH/F ", PAGE_MODE = " same as before ", sent on downlink PACCH.
4B	SS -> MS	PACKET PAGING REQUEST	k=2, for RR connection 1 <sup>st</sup> Repeated Page info contains IMSI of the MS, Channel Needed = " TCH/F ", PAGE_MODE = " same as before ", sent on downlink PACCH.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS. Check that there is no RLC data block sent.
6	MS -> SS	CHANNEL REQUEST	Establishment Cause = " Answer to Paging ". Received on RACH.
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS. Check that there is no RLC data block sent.
8	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Request Reference = pertaining to message received in step 9. Sent on AGCH.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned to the MS. Check that there is no RLC data block sent.

#### 41.1.4.2 RR / Paging / on PACCH for circuit-switched services/ paging ignored

The MS shall ignore paging not addressing to it. If paging is not implemented correctly unnecessary accesses will be provoked on the CCCH which is shared by all MSs in a same cell. This kind of the wrong paging behaviour of the same type of MS in a GSM network can block the use of CCCH and will, therefore, cause an unacceptable degradation of the GSM services to other users of the mobile stations.

##### 41.1.4.2.1 Conformance requirements

The MS shall ignore paging not addressing to it.

##### References

GSM 04.60, clause 6

##### 41.1.4.2.2 Test purpose

To verify that the MS ignores a PACKET PAGING REQUEST message where both TMSI and IMSI do not address the MS although the PACKET PAGING REQUEST message is sent on PACCH allocated to the MS.

## 41.1.4.2.3 Method of test

## Initial Conditions

## System Simulator:

1 cell, GPRS supported, PCCCH present, Max-Retrans = 2, access burst type = 8 bits, BS\_PAG\_BLK\_RES = 2, BS\_PBCCH\_BLK = 3, BS\_PRACH\_BLK = 1 and BS\_PCC\_CHAN = 1.

## Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and SPLIT PG CYCLE negotiated.

## Related PICS/PIXT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service,

Supporting GPRS MS class A,

Supporting GPRS MS class B,

Supporting GPRS MS class C.

## Test Procedure

The MS is brought to the packet transfer mode. A PACKET PAGING message not addressing the MS is sent on PACCH for RR connection establishment. It is checked that the MS can correctly send uplink RLC data blocks and does not attempt any random accesses on RACH for 10s.

## Maximum Duration of Test

5 min.

## Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, 2 <sup>nd</sup> Repeated Page info contains IMSI of other MS, sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = " Page Response ". Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Random Reference = pertaining to the message received in step 2. Sent on PAGCH.
4	SS -> MS	PACKET PAGING REQUEST	For RR connection, the two Repeated Page info contain a TMSI and an IMSI not addressing the MS, Channel Needed = " Any Channel ", sent on downlink PACCH.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH containing USF assigned. It is checked that no CHANNEL REQUEST is sent from the MS on RACH for 10s.
6	MS -> SS	UPLINK RLC DATA BLOCK (not L3 Message)	LLC PDU implicitly indicating paging response, containing TLLI in the RLC/MAC header. Received on uplink PDTCH assigned in step 4.
7	SS -> MS	PACKET UPLINK ACK/NACK	acknowledge the received RLC data block, Final Ack Indicator = '1', a valid RRBP. Sent on PACCH.
8	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	acknowledge the RLC control message. Received on PACCH.

## Specific Message Contents

## 41.1.5 RR / Paging / on CCCH for GPRS service

### 41.1.5.1 RR / Paging / on CCCH for GPRS service / normal paging

#### 41.1.5.1.1 RR / Paging / on CCCH for GPRS service / normal paging with P-TMSI successful

##### 41.1.5.1.1.1 Conformance requirements

- 1 The network initiates the paging procedure by sending a paging request message on an appropriate paging sub-channel on CCCH. Paging initiation using a paging sub-channel on CCCH is used when sending paging information to a mobile station and PCCCH is not present in the cell.
- 2 The mobile station in packet idle mode is required to receive and analyse the paging messages and immediate assignment messages sent on the paging sub-channels on CCCH corresponding to the paging groups determined for it in packet idle mode.
- 3 A PAGING REQUEST message may include more than one mobile station identification.
- 4 In a PAGING REQUEST message used for the packet paging procedure, the mobile station shall be identified by the TMSI (GPRS TMSI) or its IMSI. If the mobile station is identified by the TMSI or by its IMSI and the *Packet Page Indication* field indicates a packet paging procedure, the RR sub-layer of addressed mobile station indicates the receipt of a paging request to the MM sub-layer in order to establish a temporary block flow to support the transfer of LLC PDUs in the direction from the mobile station to the network.
- 5 The mobile station initiates the packet access procedure by scheduling the sending of CHANNEL REQUEST messages on RACH.

#### References

GSM 04.08, clause 3.3.2.1.1, 3.5.1.1, 3.5.1.2, 3.5.2.1

GSM 05.02, clause 6.5.6

##### 41.1.5.1.1.2 Test purpose

- 1 To verify that the MS in packet idle mode, GPRS attached state, is able to determine its CCCH group and PAGING group and that the MS responds correctly with CHANNEL REQUEST on RACH with cause value of 'packet access' upon receipt of a PAGING REQUEST TYPE 1 message for packet access with paging mode set to normal.
- 2 To verify that the MS is able to respond to PAGING REQUEST TYPE 1 for packet access when the MS is addressed with its P-TMSI, but another field of the paging message contains an IMSI different from that of the MS.
- 3 To verify that the MS is able to respond to PAGING REQUEST TYPE 2 for packet access when the MS is addressed with its P-TMSI, but other fields of the paging message contain a TMSI and an IMSI different from that of the MS.
- 4 To verify that the MS is able to respond to PAGING REQUEST TYPE 3 for packet access when the MS is addressed with its P-TMSI, but other fields of the paging message contain TMSIs different from that of the MS.

41.1.5.1.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH absent, Max-Retrans = 2, CCCH\_CONF = 1 basic physical channel used for CCCH with non combined SDCCH, BS\_AG\_BLK\_RES = 3, BS\_PA\_MFRMS = 6, SPLIT\_PG\_CYCLE is supported on CCCH in the cell.

Mobile Station:

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

Related PICS/PIXT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service

Test Procedure

The test is repeated three times. Each time the MS is paged for the packet paging procedure through a different paging request type message. After receiving a CHANNEL REQUEST with the establishment cause 'one phase access', an open-end TBF is assigned. A USF is assigned to the MS to enable it to transfer an uplink RLC data block. The received data block is acknowledged by the SS with , Final Ack Indicator = '1' , a valid RRB. The MS sends PACKET CONTROL ACKNOWLEDGEMENT.

Maximum Duration of Test

5 min.

Expected Sequence

The test sequence is repeated for k = 1 ... 3.

Step	Direction	Message	Comments
1A	SS -> MS	PAGING REQUEST TYPE 1	k=1 1 <sup>st</sup> Mobile Identity contains P-TMSI of the MS, 2 <sup>nd</sup> Mobile Identity not present. Packet page indication indicates packet paging procedure. Sent on PCH.
1B	SS -> MS	PAGING REQUEST TYPE 2	k=2 1 <sup>st</sup> Mobile Identity contains P-TMSI of the MS, the other two Mobile Identities not addressing the MS. Packet page indication indicates packet paging procedure. Sent on PCH.
1C	SS -> MS	PAGING REQUEST TYPE 3	k=3 1 <sup>st</sup> Mobile Identity contains P-TMSI of the MS, the remaining Mobile Identities not addressing the MS. Packet page indication indicates packet paging procedure. Sent on PCH.
2	MS -> SS	CHANNEL REQUEST	Establishment Cause = "one phase access", received on RACH. Request Reference = pertaining to the message received in step 2. Uplink assignment, sent on AGCH. Sent on PACCH containing USF assigned to the MS.  LLC PDU implicitly indicating paging response, containing TLLI in the RLC/MAC header. Received on uplink PDTCH assigned in step 4. acknowledge the received RLC data block, Final Ack Indicator = '1', a valid RRBP. Sent on PACCH. acknowledge the RLC control message. Received on PACCH.
4	SS -> MS	IMMEDIATE ASSIGNMENT	
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	
6	MS -> SS	UPLINK RLC DATA BLOCK (not L3 Message)	
7	SS -> MS	PACKET UPLINK ACK/NACK	
8	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	

Specific Message Contents

IMMEDIATE ASSIGNMENT message in step 4:

Dedicated mode or TBF	TBF
- T/D	1 (assigning resource indicated in IAR rest octets)
- IAR used	0, no meaning
- TMA	
Packet Channel Description	
- Channel Type	'00001' spared
- TN	Chosen arbitrarily
- TSC	Chosen arbitrarily
-	0
-	00 (Binary)
- ARFCN	For GSM 450: 267
	For GSM 480: 315
	For GSM 900: 30
	For DCS 1800: 650
Request Reference	Pertaining to last Channel Request sent by the MS.
Timing Advance	
- Timing advance value	30 bit periods.
Mobile Allocation	
- Length	0
Starting Time	Not present.
IA rest octets	
-	HH
-	00 (packet uplink assignment)
- Packet Uplink Assignment	
- REL_OR_ABS_FN	0, absolute
- Assign a TBF	1, a TBF assigned
- TFL_ASSIGNMENT	chosen arbitrarily
- POLLING	0, no
-	0, dynamic allocation
- USF	chosen arbitrarily
- USF granularity	0, single block
- CHANNEL_CODING_COMMAND	00, CS-1
- TLLI_BLOCK CHANNEL_CODING	00, CS-1
-	0
- ALPHA	0.5
- GAMMA	For GSM 450, +9 dBm
	For GSM 480, +9 dBm
	For GSM 900, +9 dBm
	For DCS 1800, +6 dBm
- {0 1<TIMING_ADVANCE_INDEX>}	0 ( no timing advance index)
- {0 1<TBF_STARTING_TIME>}	1 (starting time)
- TBF_STARTING_TIME	current frame + 100
- spare padding	Spare Padding

41.1.5.1.2 RR / Paging / on CCCH for GPRS service / normal paging with IMSI successful

41.1.5.1.2.1 Conformance requirements

1. If the MS was paged by the network with the IMSI (for GPRS service), the MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number stored. The MS shall then perform a GPRS attach or combined GPRS attach procedure.

References

GSM 04.08, clause 4.9.7.1, 3.3.1.3



## 41.1.5.1.2.2 Test purpose

To verify that the MS is able to respond to PAGING REQUEST TYPE 1 when the MS is addressed with its IMSI with *Packet Page Indication* set to packet paging procedure, and that the MS then performs a GPRS attach or combined GPRS attach procedure.

## 41.1.5.1.2.3 Method of test

## Initial Conditions

## System Simulator:

1 cell, GPRS supported, PCCCH absent, Max-Retrans = 2, CCCH\_CONF = 1 basic physical channel used for CCCH with non combined SDCCH, BS\_AG\_BLK\_RES = 3, BS\_PA\_MFRMS = 9.

## Mobile Station:

The MS is in GPRS attached with a TMSI and a P-TMSI allocated, SPLIT PG CYCLE negotiated.

## Related PICS/PIXIT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service.

## Test Procedure

The MS is paged on PCH with IMSI for packet paging procedure. After receiving the CHANNEL REQUEST from the MS an SDCCH8 channel is assigned. After contention resolution and receiving CLASSMARK CHANGE from the MS, the SS assigns an uplink PDCH for an open-end TBF. The MS sends an LLC PDU containing TLLI in the RLC/MAC header and ATTACH REQUEST, implicitly indicating a paging response. The SS verifies the completeness of ATTACH REQUEST and acknowledges the received two RLC data blocks with a valid RRBP and Final Ack indicator = '1'.

## Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PAGING REQUEST TYPE 1	1 <sup>st</sup> Mobile Identity contains IMSI of the MS, second Mobile Identity not present. Packet page indication indicates packet paging procedure. Sent on PCH.
2	MS -> SS	CHANNEL REQUEST	Establishment Cause = "single block packet access". Received on RACH.
3	SS -> MS	IMMEDIATE ASSIGNMENT	Random Reference = pertaining to the message received in step 2. Assign an SDCCH channel. Sent on AGCH.
4	MS -> SS	RR INITIALIZATION REQUEST	containing a random TLLI. Received on the assigned SDCCH.
5	MS -> SS	CLASSMARK CHANGE	Received on the assigned SDCCH.
6	SS -> MS	PDCH ASSIGNMENT COMMAND	assign an uplink. Sent on SDCCH.
7	SS -> MS	CHANNEL RELEASE	Release the SDCCH channel. Sent on the SDCCH.
8	MS -> SS	UPLINK RLC DATA BLOCK (ATTACH REQUEST)	LLC PDU containing a TLLI and the first part of ATTACH REQUEST, the implicit paging response to step 1. Received on the uplink PDTCH assigned in step 6.
9	SS -> MS	PACKET UPLINK ACK/NACK	Contention resolution, acknowledge the received RLC data blocks, USF assigned. Sent on PACCH.
10	MS -> SS	UPLINK RLC DATA BLOCK	completely receive ATTACH REQUEST
11	SS -> MS	PACKET UPLINK ACK/NACK	Final Ack indicator = '1', containing valid RRBP, sent on PACCH.
12	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	acknowledge the RLC control messages. Received on PACCH.

Specific Message Contents

Contents for SYSTEM INFORMATION and PACKET SYSTEM INFORMATION Messages:

RACH Control Parameters	
- Max Retrans	Max 2 retransmission
SI 13 Rest Octets	
-	0 (PCCCH absent)
- SPLIT_PG_CYCLE_CCCH_SUPPORTED	Supported
- ACC_BURST_TY	8 bit access burst
- CONTROL_ACK_TYPE	RLC/MAC control block
- NETWORK_CONTROL_ORDER	Normal MS control, no measurement reporting
- N_AVG_I	7
- T_AVG_W	12
- T_AVG_T	12
- PC_MEAS_CHAN	BCCH
- DRX_TIMER_MAX	non-DRX not supported
- PRIORITY_ACCESS_THR	Packet access allowed for priority level 1 to 4
- BS_CV_MAX	7
- T3168_T3186_VALUE	2 seconds
- T3192_VALUE	2 seconds
- PAN_DEC	3
- PAN_INC	3
- PAN_MAX	010(Binary)
- SI_1_CA_INDICATION	information from SI 1 message is not required for packet access
- NETWORK_OPERATION_MODE	Operation mode I
- {0 1<MA_CHANGE_MARK>}	0
- {0 1<IM_CHANGE_MARK>}	0
- spare padding	Spare Padding

IMMEDIATE ASSIGNMENT message in step 3:

L2 pseudo length	This is the sum of the lengths of all the information elements present in the message except for the IA rest octets and L2 pseudo length IEs. For the default message the L2 pseudo length is 11.
Protocol Discriminator	RR Management.
Skip Indicator	0000
Message Type	00111111
Page Mode	Normal Paging.
- Page Mode	
Packet Response Type and Dedicated mode or TBF	No meaning
- Downlink	dedicated mode resource
- T/D	immediate assignment procedure for RR connection establishment
- PR Type	
Channel Description	SDCCH/8
- Channel Type and TDMA offset	Chosen arbitrarily, but not 0, 2
- TN	Chosen arbitrarily
- TSC	0
-	00 (Binary)
-	For GSM 450: 267
- ARFCN	For GSM 480: 315
	For GSM 900: 30
	For DCS 1800: 650
Request Reference	Pertaining to last Channel Request sent by the MS.
Timing Advance	
- Timing advance value	30 bit periods.
Mobile Allocation	
- Length	0
Starting Time	Not present.
IA rest octets	Spare Padding

RR INITIALIZATION REQUEST message in step 4:

Protocol Discriminator	RR Management
Skip Indicator	0000
RR Initialisation Request Message Type	00111100
Ciphering Key Sequence Number	Not checked
MAC Mode and Channel Coding Requested	Not checked
Mobile station classmark	Not checked
TLLI	Not checked
Channel Request Description	Not checked
GPRS Measurement Results	Not checked

CLASSMARK CHANGE message in step 5:

Protocol Discriminator	RR Management
Skip Indicator	0000
Classmark Change Message Type	00010110
Mobile Station Classmark	Not checked
Additional Mobile Station Classmark Information	Not checked

**PDCH ASSIGNMENT COMMAND message in step 6:**

Protocol Discriminator	RR Management
Skip Indicator	0000
PDCH Assignment command Message Type	00101010
Description of the Channel, after time	
- Channel type and TDMA offset	01TTT, SDCCH8
- TN	slot 2
- TSC	Chosen arbitrarily
-	0 (non-hopping)
- ARFCN	For GSM 450: 267 For GSM 480: 315 For GSM 900, 30 For DCS 1800, 650
Cell Channel Description	Absent
Frequency List, after time	Absent
Cell Channel Description	Absent
Mobile Allocation, after time	Absent
Starting Time	Current frame + 20
Frequency List, before time	Absent
Description of the Channel, before time	Absent
Frequency channel sequence before time	Absent
Mobile Allocation, before time	Absent
RR Packet Uplink Assignment	
- LENGTH_IN_OTECTS	depending the rest of the IE
- MAC_MODE	TBD
- CHANNEL_CODING_COMMAND	CS-1 coding
- RESPONSE_INDICATOR	TBD
- TLLI_BLOCK_CHANNEL_CODING	use value indicated in CHANNEL_CODING_COMMAND
- { 0   1 < UPLINK_TFI_ASSIGNMENT > }	1 ( assign an uplink TFI)
- UPLINK_TFI_ASSIGNMENT	0000110 (uplink TBF identifier)
- Packet Timing Advance	
-	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
-	0 (not timing advance index)
- { 0 < TIMESLOT_ALLOCATION >   1 < Power Control Parameters > }	0 (TIMESLOT_ALLOCATION)
- TIMESLOT_ALLOCATION	00100000 (slot 2)
- { 0   1 < RLC_DATA_BLOCKS_GRANTED > }	1 (this IE present)
- RLC_DATA_BLOCKS_GRANTED	9 blocks
-	1 (fixed allocation)
-	0 (ALLOCATION_MAP is blocks)
- ALLOCATION_BITMAP_LENGTH	depending on the next field
- ALLOCATION_BITMAP	allocate 10 blocks
- N_SPARE_BITS	
RR Packet Downlink Assignment	Not present

**41.1.5.1.3 RR / Paging / on CCCH for GPRS service / normal paging with P-TMSI ignored**

The MS shall ignore paging not addressing to it. If paging is not implemented correctly unnecessary accesses will be provoked on CCCH which is shared by all MS in a same cell. This kind of the wrong paging behaviour of the same type of MS in a GSM network can block the use of CCCH and will, therefore, cause an unacceptable degradation of the both GSM GPRS and circuit-switched services to other users of the mobile stations.

**41.1.5.1.3.1 Conformance requirements**

In a PAGING REQUEST message used for the packet paging procedure, the mobile station shall be identified by the TMSI (GPRS TMSI) or its IMSI. A PAGING REQUEST message may include more than one mobile station identification.

## References

GSM 04.08, clause 3.3.2.1.1, 3.5.1.1

### 41.1.5.1.3.2 Test purpose

To verify that the MS ignores a PAGING REQUEST TYPE 1, 2 messages where both P-TMSI and IMSI do not address the MS although the paging message is sent on the CCCH to which the CCCH\_GROUP belongs.

### 41.1.5.1.3.3 Method of test

## Initial Conditions

### System Simulator:

1 cell, GPRS supported, PCCCH absent, Max-Retrans = 2, CCCH\_CONF = 1 basic physical channel used for CCCH with non combined SDCCH, BS\_AG\_BLK\_RES = 3, BS\_PA\_MFRMS = 7, .

### Mobile Station:

The MS is GPRS attached with a TMSI and a P-TMSI allocated and SPLIT PG CYCLE negotiated.

## Related PICS/PIXIT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service,

## Test Procedure

The test is repeated twice. Each time a different paging message not addressing the MS is sent on the PCH belonging to the MS. It is checked that the no access attempt is made by the MS for 5s.

The MS is then paged for packet paging. The MS attempts a random access which is rejected.

## Maximum Duration of Test

5 min.

Expected Sequence

The test steps 1 - 2 is repeated for k = 1 .. 2

Step	Direction	Message	Comments
1A	SS -> MS	PAGING REQUEST TYPE 1	k=1, The two packet page indications are set to packet paging procedure. 1st Mobile Identity contains P-TMSI, 2nd Mobile Identity contains IMSI, both Identities do not address the MS. Sent on PCH belonging to the MS.
1B	SS -> MS	PAGING REQUEST TYPE 2	k=2, Packet page indication 3 is set to packet paging procedure. 1st Mobile Identity contains P-TMSI, 2nd Mobile Identity contains P-TMSI, 3rd Identity contains IMSI, all identities not addressing the MS. Sent on PCH belonging to the MS.
2	SS		Check that no CHANNEL REQUEST is sent from the MS for 5s.
3	SS -> MS	PAGING REQUEST TYPE 1	1 <sup>st</sup> Mobile Identity contains IMSI of the MS, second Mobile Identity not present. Packet page indication indicates packet paging procedure. Sent on PCH belonging to the MS.
4	MS -> SS	CHANNEL REQUEST	Establishment Cause = " single block packet access". Received on RACH.
5	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Random Reference = pertaining to the message received in step 4.

Specific Message Contents

PAGING REQUEST TYPE 1 message:

Mobile Identity 1 - odd/even indication - Type of Identity - Identity Digits Mobile Identity 2 P1 rest octets - Packet Page Indication 1 - Packet Page Indication 2	Even. P-TMSI. P-TMSI value not allocated to MS. IMSI different from the value stored on the SIM.  H, Packet Paging H, Packet Paging
--	---

PAGING REQUEST TYPE 2 message:

Mobile Identity 1 - TMSI value P2 rest octets - Packet Page Indication 3	P-TMSI value not allocated to the MS. LLLL H, Packet Paging
---	---

#### 41.1.5.2 RR / Paging / on CCCH for GPRS service / extended paging

##### 41.1.5.2.1 RR / Paging / on CCCH for GPRS service / extended paging with P-TMSI successful

###### 41.1.5.2.1.1 Conformance requirements

- 1 A given mobile station shall take into account the page mode information element of any message sent on its own paging sub-channel whatever the nature of this message (paging messages or immediate assignment messages).
- 2 In the extended paging mode, the mobile station is required in addition (to normal paging) to receive and analyse the next but one message on the PCH.

#### References

GSM 04.08, clause 3.3.2.1.1, 9.1.18, 9.1.19, 9.1.20

###### 41.1.5.2.1.2 Test purpose

- 1 To verify that the MS operates in the extended page mode when it is ordered by the SS in PAGING REQUEST TYPE 1 which does not address the MS, but on the paging sub-channel corresponding to the MS identity.
- 2 To verify that the MS operates in the extended page mode when it is ordered by the SS in PAGING REQUEST TYPE 2 which does not address the MS, but on the paging sub-channel corresponding to the MS identity.
- 3 To verify that the MS operates in the extended page mode when it is ordered by the SS in PAGING REQUEST TYPE 3 which does not address the MS, but on the paging sub-channel corresponding to the MS identity.
- 4 To verify that the MS operates in the extended page mode when it is ordered by the SS in IMMEDIATE ASSIGNMENT on the paging sub-channel corresponding to the MS identity.
- 5 To verify that the MS operates in the extended page mode when it is ordered by the SS in IMMEDIATE ASSIGNMENT EXTENDED on the paging sub-channel corresponding to the MS identity.
- 6 To verify that the MS operates in the extended page mode when it is ordered by the SS in IMMEDIATE ASSIGNMENT REJECT on the paging sub-channel corresponding to the MS identity.

###### 41.1.5.2.1.3 Method of test

#### Initial Conditions

##### System Simulator:

1 cell, GPRS supported, PCCCH absent, Max-Retrans = 2, CCCH\_CONF = 1 basic physical channel used for CCCH with non-combined SDCCH, BS\_AG\_BLK\_RES = 3, BS\_PA\_MFRMS = 8.

##### Mobile Station:

The MS is GPRS attached with a TMSI and a P-TMSI allocated and SPLIT PG CYCLE negotiated.

#### Related PICS/PIXT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service

#### Test Procedure

The test is repeated 6 times. Each time a different downlink message is sent on PCH or AGCH for setting the page mode to extended paging. The MS is paged on the next but one page block for the packet paging procedure. The MS starts a random accesses which are rejected by the SS.

Maximum Duration of Test

5 min.

Expected Sequence

The test sequence is repeated for k = 1 ... 6

Step	Direction	Message	Comments
1A	SS -> MS	PAGING REQUEST TYPE 1	k=1, All mobile Identities do not address the MS. Page mode is set to "extended paging". Packet page indication indicates packet paging procedure. Sent on PCH.
1B	SS -> MS	PAGING REQUEST TYPE 2	k=2, All mobile Identities do not address the MS. Page mode is set to "extended paging". Packet page indication indicates packet paging procedure. Sent on PCH.
1C	SS -> MS	PAGING REQUEST TYPE 3	k=3, All mobile Identities do not address the MS. Page mode is set to "extended paging". Channel Needed IE's are coded with 00. Sent on PCH.
1D	SS -> MS	IMMEDIATE ASSIGNMENT	k=4, Page mode is set to "extended paging". Request Reference does not address any request references sent by the MS in previous test steps. Sent on paging channel (PCH).
1E	SS -> MS	IMMEDIATE ASSIGNMENT EXTENDED	Page mode is set to "extended paging". Request Reference does not address any request references sent by the MS in previous test steps. Sent on paging channel (PCH).
1F	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	k=6, Page mode is set to "extended paging". Request Reference does not address any request references sent by the MS in previous test steps. Sent on paging channel (PCH).
2	SS -> MS	PAGING REQUEST TYPE 1	1st Mobile Identity contains P-TMSI of the MS, 2nd Mobile Identity not present. Page mode is set to "normal paging". Packet page indication indicates packet paging procedure. Sent on the next but one subblock on the same CCCH as previous paging message. Establishment Cause = " Single block packet access ". Received on RACH. Establishment Cause = " Single block packet access ". Received on RACH. Request Reference = pertaining to the message received in step 4. Page mode is set to "normal paging". Sent on AGCH.
3	MS -> SS	CHANNEL REQUEST	
4	MS -> SS	CHANNEL REQUEST	
5	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	

### 41.1.5.3 RR / Paging / on CCCH for GPRS service / paging reorganisation

#### 41.1.5.3.1 Conformance requirements

- 1 In the paging reorganisation mode the mobile station shall receive all messages on the CCCH regardless of the BS-AG-BLKS-RES setting. It is required to receive all BCCH messages.
- 2 When the mobile station receives the next message to its (possibly new) paging subgroup the subsequent action is defined in the page mode information element in that message.



- 3 When the mobile station selects a new PCH, the initial page mode in the mobile station shall be set to paging reorganisation. If a message in the paging sub-channel is not received correctly, the message is ignored and the previous page mode is assumed.

## References

GSM 04.08, clause 3.3.2.1.1

### 41.1.5.3.2 Test purpose

- 1 To verify that the MS, after reception of a message with page mode set to "paging reorganisation", answers to paging messages (with page mode set to "normal paging") sent on its old CCCH in paging blocks which do not belong to the MS's paging sub-channel.
- 2 To test that the MS correctly determines its new paging sub-channel when the number of reserved blocks, BS\_AG\_BLK\_RES, and the number of 51-multiframes between transmissions of paging messages for mobile stations of the same paging group BS\_PA\_MFRMS are changed.
- 3 To test that the MS correctly determines its new paging sub-channel when the number of basic physical channels for CCCH is changed.
- 4 To test that the MS correctly determines its new paging sub-channel on PCCCH when PCCCH is established.

### 41.1.5.3.3 Method of test

#### Initial Conditions

##### System Simulator:

1 cell, GPRS supported, PCCCH absent, Max-Retrans = 2, CCCH\_CONF = 1 basic physical channel used for CCCH with non-combined SDCCH, BS\_AG\_BLK\_RES = 3, BS\_PA\_MFRMS = 6.

##### Mobile Station:

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

#### Related PICS/PIXIT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service

#### Test Procedure

The page mode is set to paging reorganisation. The MS is paged for packet paging procedure through PAGING REQUEST TYPE 1 which is sent before the MS's original paging sub-channel re-occurs, but later than the next paging block of that CCCH. The MS starts the random access. The access attempt is rejected.

The SS changes the CCCH configuration with BS\_AG\_BLK\_RES=2 and BS\_PA\_MFRMS=5 and waits two SI13 repeat periods, and then sets the page mode to Normal Paging. The MS is paged for packet paging procedure through PAGING REQUEST TYPE 2 sent on the new paging sub-channel. The MS starts the random access. The access attempt is rejected via IMMEDIATE ASSIGNMENT REJECT which sets the page mode to 'paging reorganisation'.

Two additional CCCHs are activated by the SS. The same test procedure as above is repeated.

The SS restores all default radio parameters (in clause 40.1), sets a non-combined CCCH and starts to transmitting PSIs on PCCCH. The SS waits two SI3 repeat periods + two PSI1 repeat periods. The MS is paged on PPCH. The random accesses from the MS are observed and are rejected.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT EXTENDED	Page mode set to "paging reorganisation"
2	SS -> MS	PAGING REQUEST TYPE 1	Sent before the MS's original paging sub-channel re-occurs, but later than the next paging block of that CCCH. Page mode set to "normal paging", for packet paging procedure.
3	MS -> SS	CHANNEL REQUEST	Establishment Cause = "one phase access", received on RACH.
4	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Request Reference = pertaining to the message received in step 3, page mode set to "paging reorganisation", Sent on AGCH.
5	SS		set BS_AG_BLK_RES=2 and BS_PA_MFRMS=5 in SIs, wait two SI13 repeat periods.
6	SS -> MS	PAGING REQUEST TYPE 2	All L3 messages sent on any paging sub-channel are paging fill frame specify Normal Paging. 1 <sup>st</sup> Mobile Identity contains P-TMSI of the MS. 2 <sup>nd</sup> Mobile Identity contains P-TMSI, 3 <sup>rd</sup> Identity contains IMSI, the last two identities not addressing the MS. Packet page indication indicates packet paging procedure. Page mode = "same as before", sent on the new PCH belonging to the MS.
7	MS -> SS	CHANNEL REQUEST	Establishment Cause = "one phase access". Received on RACH.
8	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Request Reference = pertaining to the message received in step 7, page mode set to "paging reorganisation",.
9	SS		Reconfigure the SS channels so that additional two CCCH's are set on slot 2 and slot 4, Set CCCH_CONF = 4 in SIs. Wait two SI13 repeat periods.
10	SS -> MS	PAGING REQUEST TYPE 2	All L3 messages sent on any paging sub-channel are paging fill frame specify Normal Paging. 1 <sup>st</sup> Mobile Identity contains P-TMSI of the MS. 2 <sup>nd</sup> Mobile Identity contains P-TMSI, 3 <sup>rd</sup> Identity contains IMSI, the last two identities not addressing the MS. Packet page indication indicates packet paging procedure. Page mode = "same as before", sent on the new PCH belonging to the MS.
11	MS -> SS	CHANNEL REQUEST	Establishment Cause = "one phase access". Received on RACH.
12	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Request Reference = pertaining to the message received in step 11, page mode set to "paging reorganisation". Sent on AGCH.
13	SS		Restore the SS default radio parameters, so that there is one CCCH and one PBCCH+PCCCH, set CCCH_CONF = 0 in SIs, start PSIs broadcasting. And wait two SI3 repeat periods + two PSI1 repeat periods.
14	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, no other Repeated Page info. Sent on PPCH.
15	MS-> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = "Page Response". Received on PRACH.
16	SS -> MS	PACKET ACCESS REJECT	Random Reference = pertaining to the message received in step 15.

Specific Message Contents

41.1.5.4 RR / Paging / on CCCH for GPRS service / default message contents

Contents for SYSTEM INFORMATION and PACKET SYSTEM INFORMATION Messages:

System information Type 13

L2 Pseudo Length	05, binary
RR management Protocol Discriminator	RR
Skip Indicator	0000
System Information Type 13 Message Type	00
SI 13 Rest Octets	H
-	0 (PCCCH absent)
- BCCH_CHANGE_MARK	
- SI_CHANGE_FIELD	
-	0
- RAC	
- SPGC_CCCH_SUP	1, Supported
- PRIORITY_ACCESS_THR	110, packet access is allowed for priority level 1-4
- NETWORK_CONTROL_ORDER	Normal MS control, no measurement reporting
- GPRS Cell Options	
- NMO	00, network mode of operation I
- T3168_T3186	2 s.
- T3192	2 s.
- DRX_TIMER_MAX	0, non-DRX not supported
- ACCESS_BURST_TYPE	0, 8 bit access burst
- CONTROL_ACK_TYPE	1, RLC/MAC control block
- BS_CV_MAX	7
-	1
- PAN_DEC	3
- PAN_INC	3
- PAN_MAX	010(Binary)
- GPRS Power Control parameters	
- ALPHA	0.5
- T_AVG_W	12
- T_AVG_T	12
- PC_MEAS_CHAN	BCCH
- N_AVG_I	7
- SI15_IND	0, SI15 absent
- spare padding	Spare Padding

41.1.6 RR / Paging / Before T3172 expiry

41.1.6.1 Conformance requirements

On receipt of a PACKET ACCESS REJECT message containing a WAIT\_INDICATION field in a Reject structure addressed to the mobile station, where the Packet Request Reference in the Reject structure corresponds to one of its 3 last PACKET CHANNEL REQUEST messages, the mobile station shall stop sending PACKET CHANNEL REQUEST messages, start timer T3172 with the value indicated in the WAIT\_INDICATION field. During the time T3172 is running, the mobile station shall ignore all received PACKET PAGING REQUEST messages except paging request to trigger RR connection establishment.

References

GSM 04.60, 7.1.2.2.4

#### 41.1.6.2 Test purpose

To verify that during the time T3172 is running, the MS ignores all received PACKET PAGING REQUEST messages except paging request to trigger RR connection establishment.

#### 41.1.6.3 Method of test

##### Initial Conditions

###### System Simulator:

1 cell, GPRS supported, PCCCH present, Max-Retrans = 2, access burst type = 11 bits, BS\_PAG\_BLK\_RES = 2, BS\_PBCCH\_BLK = 3, BS\_PCC\_CHAN = 1 and BS\_PRACH\_BLK = 1.

###### Mobile Station:

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

##### Related PICS/PIXIT Statement(s)

Type of MS (GSM 450, GSM 480, P-, E-, R-GSM 900 or DCS 1800),

Support GPRS service,

Supporting GPRS MS class A,

Supporting GPRS MS class B,

Supporting GPRS MS class C.

##### Test Procedure

The MS is paged for initiation of a random access. The access attempt is rejected with a WAIT\_INDICATION = 30 s. in PACKET ACCESS REJECT. The MS is then continuously paged for TBF establishment for 5s. The SS checks that there is no transmission from the MS on PRACH for 8 s. after having sent PACKET ACCESS REJECT. The MS is paged for an RR connection establishment. The MS of class A or B shall start random accesses for channel request with cause 'one phase access'. The access attempt is rejected.

##### Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, 2 <sup>nd</sup> Repeated Page info contains IMSI not addressing the MS, for TBF establishment. Sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET ACCESS REJECT	Containing WAIT_INDICATION = 12 s. and packet request reference = pertaining to the message received in step 2. Sent on PAGCH.
4	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info contains P-TMSI of the MS, 2 <sup>nd</sup> Repeated Page info contains IMSI not addressing the MS, for TBF establishment. Sent on PPCH.
5	SS		Repeat step 4 for 5 s. and check that there is no transmission from the MS on PRACH for 8 s. after step 4.
6	SS -> MS	PACKET PAGING REQUEST	1 <sup>st</sup> Repeated Page info contains TMSI of the MS, for RR connection establishment, Channel Needed = " TCH/F ", PAGE_MODE = " normal paging ", sent on PPCH.
8A	MS -> SS		For MS class C of mode of operation
9A			
8B	MS -> SS	CHANNEL REQUEST	For GPRS MS class A and B of mode of operation, one phase access, received on RACH.
9B	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	Request Reference = pertaining to message received in step 8B. Sent on AGCH.

Specific Message Contents

PACKET ACCESS REJECT message:

MESSAGE_TYPE	000001
PAGE_MODE	Normal Paging
Reject	
-	10 (not TLLI, but packet request reference) pertaining to what received in step 3.
- Packet Request Reference	1 (wait indication)
-	12
- WAIT_INDICATION	0 (units of seconds)
- WAIT_INDICATION_SIZE	0 (end of Reject struct)
-	Spare Padding
spare padding	

## 41.2 RR procedures on CCCH related to temporary block flow establishment

This clause presents tests for “RR procedures on CCCH related to temporary block flow establishment” which are specified in GSM 04.08/3.5.

### Applicability and default conditions

The clause is applicable for mobiles supporting GPRS.

The SS default conditions simulate one cell with default settings as defined in the GPRS general defaults section, except:

- SI 13 Rest Octets contains no PCCCH description (PCCCH is not supported by the network).

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

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

## 41.2.1 Permission to access the network

### 41.2.1.1 Permission to access the network / priority classes

#### 41.2.1.1.1 Conformance requirements

Access to the network is allowed:

- if packet access is allowed in the cell for the priority class associated with the packet transfer, as indicated by the PRIORITY\_ACCESS\_THR parameter broadcast in SI 13 message.

#### References

GSM 04.08 subclause 3.5.2.1.1

#### 41.2.1.1.2 Test purpose

To verify that the MS accesses the network only if packet access is allowed in the cell for the priority class associated with the packet transfer.

#### 41.2.1.1.3 Method of test

##### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

##### Related PICS/PIXT statement

Support of PDP context.

##### Test procedure

The MS is triggered to transfer data with different priority classes. The SS verifies that the MS accesses the network or not as appropriate.

Expected sequence

Step	Direction	Message	Comments
A1 A2 A3 A4	SS->MS  MS SS	SYS INFO 13	including PRIORITY_ACCESS_THR = '000' (packet access not allowed in the cell) SS waits 30 s. to allow Sys Info decoding. The MS is triggered to transfer data with priority 4. SS verifies for 10 s. that MS does not try to access the network.
B 1-4	SS->MS	SYS INFO 13	repeat steps A1 to A4 except that PRIORITY_ACCESS_THR = '001' (spare, packet access not allowed in the cell)
C 1-4	SS->MS	SYS INFO 13	repeat steps A1 to A4 except that PRIORITY_ACCESS_THR = '010' (spare, packet access not allowed in the cell)
D1 D2 D3 D4 D5	SS->MS  MS MS->SS SS->MS	SYS INFO 13   CHANNEL REQUEST IMMEDIATE ASSIGNMENT REJECT	including PRIORITY_ACCESS_THR = '011' (packet access, priority level 1) SS waits 30 s. to allow Sys Info decoding. The MS is triggered to transfer data with priority 1. MS tries to access the network
E1 E2 E3 E4	SS->MS  MS SS	SYS INFO 13	including PRIORITY_ACCESS_THR = '011' (packet access, priority level 1) SS waits 30 s. to allow Sys Info decoding. The MS is triggered to transfer data with priority 2. SS verifies for 10 s. that MS does not try to access the network.
F1 F2 F3 F4 F5	SS->MS  MS MS->SS SS->MS	SYS INFO 13   CHANNEL REQUEST IMMEDIATE ASSIGNMENT REJECT	including PRIORITY_ACCESS_THR = '100' (packet access, priority levels 1 to 2) SS waits 30 s. to allow Sys Info decoding. The MS is triggered to transfer data with priority 1. MS tries to access the network
G1 G2 G3 G4	SS->MS  MS SS	SYS INFO 13	including PRIORITY_ACCESS_THR = '100' (packet access, priority levels 1 to 2) SS waits 30 s. to allow Sys Info decoding. The MS is triggered to transfer data with priority 3. SS verifies for 10 s. that MS does not try to access the network.
H1 H2 H3 H4 H5	SS->MS  MS MS->SS SS->MS	SYS INFO 13   CHANNEL REQUEST IMMEDIATE ASSIGNMENT REJECT	including PRIORITY_ACCESS_THR = '101' (packet access, priority levels 1 to 3) SS waits 30 s. to allow Sys Info decoding. The MS is triggered to transfer data with priority 1. MS tries to access the network
I1 I2 I3 I4	SS->MS  MS SS	SYS INFO 13	including PRIORITY_ACCESS_THR = '101' (packet access, priority levels 1 to 3) SS waits 30 s. to allow Sys Info decoding. The MS is triggered to transfer data with priority 4. SS verifies for 10 s. that MS does not try to access the network.
J1 J2 J3	SS->MS  MS	SYS INFO 13	including PRIORITY_ACCESS_THR = '110' (packet access, priority levels 1 to 4) SS waits 30 s. to allow Sys Info decoding. The MS is triggered to transfer data with priority 1.

J4 J5	MS->SS SS->MS	CHANNEL REQUEST IMMEDIATE ASSIGNMENT REJECT	MS tries to access the network
K 1-5			Repeat steps J1 to J5 except that LLC PDU priority is set to 4.
L 1-5	SS->MS	SYS INFO 13	repeat steps J1 to J5 except that PRIORITY_ACCESS_THR = '111' (spare, packet access allowed)
M 1-5	SS->MS	SYS INFO 13	repeat steps J1 to J5 except that PRIORITY_ACCESS_THR = '111' (spare, packet access allowed) and MS is triggered to send data with priority 4.

## 41.2.2 Initiation of the packet access procedure

### 41.2.2.1 Initiation of the packet access procedure / establishment causes

#### 41.2.2.1.1 Conformance requirements

The CHANNEL REQUEST messages are sent on RACH and contain the parameters:

- an establishment cause which indicates packet access, and as applicable, a request for one phase packet access or single block packet access;
- a random reference which is drawn randomly from a uniform probability distribution for every new transmission.

If the requested RLC mode is *unacknowledged mode*, the mobile station shall request a single block packet access and attempt a two phase packet access.

If the purpose of the packet access procedure is to send a Page Response, Cell Update, for a GPRS Mobility Management or a GPRS Session Management procedure the mobile station shall request a one phase packet access.

#### References

GSM 04.08 subclause 3.5.2.1.2

#### Justification

#### 41.2.2.1.2 Test purpose

To verify that the CHANNEL REQUEST message sent by the MS contains the correct establishment cause when initiating a packet access procedure.

#### 41.2.2.1.3 Method of test

#### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is switched off.



Related PICS/PIXIT statement

Support of PDP context.

Test procedure

The MS is triggered to initiate a GPRS attach procedure. The SS verifies that the MS attempts a one phase packet access.

If the MS supports PDP context, a PDP context for RLC unacknowledged is established and the MS is triggered to transfer RLC data blocks. The SS verifies that the MS correctly sets the Establishment Cause in the CHANNEL REQUEST message.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	MS		MS is switched on and triggered to initiate a GPRS attach procedure.
2	MS -> SS	CHANNEL REQUEST	SS verifies that Establishment Cause is 'one phase'.  SS allows MS to complete GPRS attach.
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	SS <->MS	Completion of macro {GPRS attach procedure}	
5	MS<->SS		Steps 5 to 8 apply to MSs supporting PDP context. A PDP context is established for RLC unacknowledged data transfer.
6	MS		MS is triggered to transfer data. SS verifies that Establishment Cause is 'single block access'.
7	MS -> SS	CHANNEL REQUEST	
8	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	

### 41.2.2.2 Random references for single block packet access

#### 41.2.2.2.1 Conformance requirements

The random reference in the CHANNEL REQUEST messages shall be randomly drawn from a uniform probability distribution for every new transmission.

References

GSM 04.08 subclause 3.5.2.1.2.

#### 41.2.2.2.2 Test purpose

To verify that the MS produces different RandomReferences when accessing the network for single block access.

#### 41.2.2.2.3 Method of test

Initial conditions

System Simulator: Default settings except:

- Parameter MAX\_RETRANS is set to 4 retransmissions.

Mobile Station: MS is GPRS attached, a PDP context in RLC unacknowledged mode has been established and the MS is in Packet Idle mode.

Related PICS/PIXIT statement

-

Test procedure

The MS is triggered to transfer data, it shall attempt a single block packet access (GSM 04.08 / 3.5.2.1.2). The SS does not answer to the access bursts but stores N (= 80) Random References and verifies that the MS uses all possible values (0 ... 7) in its Random Reference.

Justification

The length of the Random Reference is 3 bits for single block packet access (GSM 04.08 / Table 9.9). This test verifies that the MS uses all values (0 ... 7) in its Random Reference.

The probability that in a sequence of N samples one of the possible value does not appear is  $8 \cdot (7/8)^{N-1}$  for large N.

Note

The number of samples N has been computed such that the probability of refusing a correct MS is less than 0.02 %.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	MS		MS is triggered to transfer data.
2	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
3	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
4	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
5	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
6	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
7	MS<->SS		Steps 1 to 6 are repeated N/5 = 16 times
8	SS		SS verifies that all Request Reference values (0 to 7) come out in the stored samples.

### 41.2.2.3 Random references for one phase packet access

#### 41.2.2.3.1 Conformance requirements

The random reference in the CHANNEL REQUEST messages shall be randomly drawn from a uniform probability distribution for every new transmission.

References

GSM 04.08 subclause 3.5.2.1.2.

#### 41.2.2.3.2 Test purpose

To verify that the MS produces different Random References when accessing the network for one phase access.

41.2.2.3.3 Method of test

Initial conditions

System Simulator: default settings except:

- Parameter MAX\_RETRANS is set to 4 retransmissions.

Mobile Station: MS is switched off.

Related PICS/PIXIT statement

-

Test procedure

The MS is triggered to initiate the GPRS attach procedure, it shall attempt a one phase packet access (GSM 04.08 / 3.5.2.1.2). The SS does not answer to the access bursts but stores N (= 80) Random References and verifies that the MS uses all possible values (0 ... 6) in its Random Reference and does not use value '111' (see GSM 04.08 / Table 9.9).

Justification

Possible values for Random Reference for one phase packet access are 0 to 6 (value '111' is not allowed). This test verifies that the MS uses all values (0 ... 6) in its Random Reference.

The probability that in a sequence of N samples one of the possible value does not appear is  $7*(3/4)^N$  for large N.

Note

The number of samples N has been computed such that the probability of refusing a correct MS is less than 0.02 %.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	MS		MS is turned on.
2	MS		MS is triggered to perform GPRS attach.
3	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
4	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
5	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
6	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
7	MS -> SS	CHANNEL REQUEST	SS stores the value of Request References
8	MS<->SS		Steps 2 to 7 are repeated N/5 = 16 times
9	SS		SS verifies that all Request Reference values (0 to 6) come out in the stored samples and that value '111' is not used.

41.2.2.4 Initiation of the packet access procedure / timer T3146

41.2.2.4.1 Conformance requirements

Having sent the maximum number of CHANNEL REQUEST messages, the mobile station starts timer T3146. At expiry of timer T3146, the packet access procedure is aborted and a packet access failure is indicated to upper layers.

## Reference

GSM 04.08 subclause 3.5.2.1.2

## 41.2.2.4.2 Test purpose

To verify that the MS waits T3146 seconds before aborting the packet access procedure.

## 41.2.2.4.3 Method of test

## Initial conditions

System Simulator: Default settings except:

- System Information parameter MAX\_RETRANS is set to 2 retransmissions
- CCCH is non combined.
- System Information parameter TX\_INTEGER in RACH Control Parameters is set to 3.

Mobile Station: MS is switched off.

## Related PICS/PIXT statement

-

## Test procedure

The MS is triggered to initiate the GPRS attach procedure, the SS waits until the MS sends all M+1 CHANNEL REQUEST messages, where M is the parameter Max Retrans broadcast on BCCH. The SS waits until T3146 seconds elapse and sends an IMMEDIATE ASSIGNMENT which shall be ignored by the MS since the access procedure should be aborted.

The MS shall retry the access procedure (according to 04.60/7.1.2.3). Again, the SS waits until the MS sends all M+1 CHANNEL REQUEST messages, and then sends an IMMEDIATE ASSIGNMENT before T3146 seconds elapse. In this case the MS shall correctly send the LLC PDU on the assigned PDCH.

## Note:

Timer T3146 (GSM 04.08/11) depends on parameter TX\_INTEGER broadcast on BCCH.

The timer's value is  $2*S+TX\_INTEGER$  slots, where S is given in Table 3.1/04.08.

## Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	MS -> SS	CHANNEL REQUEST	The MS turned on and triggered to initiate the GPRS attach procedure.  SS waits T3146 + 0.1*T3146 The value of T3146 corresponding to the current settings is 0.5 seconds (see note above).
2	MS -> SS	CHANNEL REQUEST	
3	MS -> SS	CHANNEL REQUEST	
4	SS		
5	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, one phase access.
6	SS		MS shall ignore the message, SS verifies that MS does not send any RLC data or control blocks.
7	MS -> SS	CHANNEL REQUEST	MS attempts a second time to access the network.
8	MS -> SS	CHANNEL REQUEST	
9	MS -> SS	CHANNEL REQUEST	SS waits T3146 - 0.1*T3146 for uplink TBF, one phase access. SS allows MS to complete GPRS attach.
10	SS		
11	SS -> MS	IMMEDIATE ASSIGNMENT	
14	SS <->MS	Completion of macro {GPRS attach procedure}	

The complete test is repeated for :

- TX\_INTEGER set to 20 (MS shall set timer T3146 to 1.1s) and for
- TX\_INTEGER set to 32 (MS shall set timer T3146 to 2.1s).

#### 41.2.2.5 Initiation of the packet access procedure / Request Reference

##### 41.2.2.5.1 Conformance requirements

On receipt of an IMMEDIATE ASSIGNMENT message corresponding to one of its 3 last CHANNEL REQUEST messages, the mobile stops sending CHANNEL REQUEST messages and switches to the assigned PDCH.

##### Reference

GSM 04.08 subclause 3.5.2.1.3.1

##### 41.2.2.5.2 Test purpose

- 1 To verify that the MS continues sending CHANNEL REQUEST messages when receiving an IMMEDIATE ASSIGNMENT containing an incorrect Request Reference.
- 2 To verify that the MS stops sending CHANNEL REQUEST messages and switches to the assigned PDCH when receiving an IMMEDIATE ASSIGNMENT containing a Request Reference IE corresponding to one of its last 3 CHANNEL REQUEST messages.

##### 41.2.2.5.3 Method of test

##### Initial conditions

System Simulator: Default settings except:

- Parameter MAX\_RETRANS is set to 7 retransmissions.

Mobile Station: The MS is switched off.

Related PICS/PIXIT statement

-

Test procedure

The MS is triggered to initiate the GPRS attach procedure. After 3 CHANNEL REQUEST messages, the SS sends an IMMEDIATE ASSIGNMENT including an incorrect Request Reference. The SS verifies that the MS continues sending CHANNEL REQUEST messages.

After the 5<sup>th</sup> CHANNEL REQUEST message the SS sends an IMMEDIATE ASSIGNMENT including a correct Request Reference. The SS verifies that the MS stops sending CHANNEL REQUEST messages, switches to the assigned PDCH and completes the attach procedure.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
0	MS		The MS is turned on and triggered to initiate the GPRS attach procedure.
1	MS -> SS	CHANNEL REQUEST	
2	MS -> SS	CHANNEL REQUEST	
3	MS -> SS	CHANNEL REQUEST	
4	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, one phase access, fixed allocation and including a Request Reference different from those included in previous CHANNEL REQUEST messages.
5	MS -> SS	CHANNEL REQUEST	MS continues sending CHANNEL REQUEST messages.
6	MS -> SS	CHANNEL REQUEST	
7	SS -> MS	IMMEDIATE ASSIGNMENT	with Request Reference corresponding to step 3. MS shall stop sending further access bursts.
8	MS -> SS	RLC data block (GMM ATTACH REQUEST)	(see message contents in default section)
9	MS<->SS	Completion of macro {GPRS attach procedure}	SS allows MS to complete the attach procedure.

### 41.2.3 Packet immediate assignment / One phase packet access

#### 41.2.3.1 Two-message assignment / Successful case

##### 41.2.3.1.1 Conformance requirements

If the mobile station receives an IMMEDIATE ASSIGNMENT message and the Dedicated mode or TBF information element indicates that this is the first message in a two-message assignment, the mobile station shall continue to listen to the full CCCH. The network may send a second IMMEDIATE ASSIGNMENT message within two multiframe periods following the first IMMEDIATE ASSIGNMENT, specifying the packet channel description and, if required, a mobile allocation for the assignment.

On receipt of an IMMEDIATE ASSIGNMENT message or, in case of a two-message assignment, a matching pair of IMMEDIATE ASSIGNMENT messages corresponding to one of its 3 last CHANNEL REQUEST messages, the mobile station stops T3146 (if running), stops sending CHANNEL REQUEST messages, and switches to the assigned PDCH.

Reference

GSM 04.08 subclause 3.5.2.1.3.1

41.2.3.1.2 Test purpose

To verify that the MS correctly decodes a two-message assignment and switches to the assigned PDCH.

41.2.3.1.3 Method of test

Initial conditions

System Simulator: Default settings.

Mobile Station: MS is switched off.

Related PICS/PIXIT statement

-

Test procedure

The MS is triggered to initiate the GPRS attach procedure. After reception of CHANNEL REQUEST the SS sends a two-message IMMEDIATE ASSIGNMENT which actually describe a default IMMEDIATE ASSIGNMENT message, except that it is split in two parts: basically, the first part contains the IA Rest Octets, and the second part the Packet Channel Description IE.

The SS verifies that the MS correctly switches to the assigned PDCH and completes GPRS attach.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	MS		MS is turned on and triggered to initiate the GPRS attach procedure.
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	first message of two-message assignment
4	SS -> MS	IMMEDIATE ASSIGNMENT	second message (see specific message contents), sent within two multiframe after step 3.
5	MS<->SS	Completion of macro {GPRS attach procedure}	SS allows MS to complete the GPRS attach procedure.

Specific message contents:

IMMEDIATE ASSIGNMENT (first message)

Information Element	Value
as default except:	
Dedicated mode or TBF:	
- TMA	1 (is first message of a two-message assignment)
- Downlink	0
- T/D	1 (assign a TBF)
Packet Channel Description:	not present
Request Reference:	as default
Timing Advance:	as default
Starting Time:	not present
IA Rest Octets:	as default

IMMEDIATE ASSIGNMENT (second message)

Information Element	Value
as default except:	
Dedicated mode or TBF:	
- TMA	0
- Downlink	0
- T/D	1 (assign a TBF)
Packet Channel Description:	as default
Request Reference:	as default
Timing Advance:	as default
Starting Time:	not present
IA Rest Octets:	spare bits (IE Rest Octets not present)

### 41.2.3.2 Two-message assignment / Failure cases

#### 41.2.3.2.1 Conformance requirements

If the indirect encoding is used, the IMMEDIATE ASSIGNMENT message may contain a CHANGE\_MARK\_1 field. If that is present, the mobile station shall verify the validity of the SI13\_CHANGE\_MARK associated with the GPRS mobile allocation to which the message refers, see GSM 04.60. If the CHANGE\_MARK\_1 field and the SI13\_CHANGE\_MARK do not match, the message does not satisfactorily define a PDCH.

The two IMMEDIATE ASSIGNMENT messages in a two-message assignment shall have the same contents of the Request Reference information elements.

If the mobile station does not receive the second IMMEDIATE ASSIGNMENT messages in a two-message assignment within two multiframe periods following the first message, the mobile station shall discard the first IMMEDIATE ASSIGNMENT message received.

#### Reference

GSM 04.08 subclause 3.5.2.1.3.1

#### 41.2.3.2.2 Test purpose

To verify that the MS does not respond to a two-message assignment if:

- CHANGE\_MARK\_1 does not match SI13 CHANGE\_MARK.
- the second IMMEDIATE ASSIGNMENT message is not received within two multiframe after the first message.
- Request References in both messages do not have same contents.



41.2.3.2.3 Method of test

Initial conditions

System Simulator: Default settings except:

- CHANGE\_MARK in SI13 is set to 1.

Mobile Station: MS is switched off.

Related PICS/PIXIT statement

-

Test procedure

The MS is triggered to initiate the GPRS attach procedure. After reception of CHANNEL REQUEST the SS sends a two-message IMMEDIATE assignment:

- first attempt: CHANGE\_MARK does not match SI13 CHANGE\_MARK. MS shall re-initiate packet access (see GSM 04.08 / 4.7.3.1.5, GPRS attach procedure / Abnormal cases).
- second attempt: the second IMMEDIATE ASSIGNMENT message is not received within two multiframe after the first message. MS shall re-initiate packet access.
- third attempt: Request References in both messages do not have same contents. MS shall re-initiate packet access.
- fourth attempt: the second IMMEDIATE ASSIGNMENT message is received in the last access grant block before the second multiframe after the first message. In this case the MS shall successfully switch to the assigned PDCH and complete the GPRS attach procedure.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate the GPRS attach procedure.
2	MS -> SS	CHANNEL REQUEST	first message of two-message assignment with contents as specified below (see specific message contents).
3	SS -> MS	IMMEDIATE ASSIGNMENT	
4	SS -> MS	IMMEDIATE ASSIGNMENT	
5	MS -> SS	CHANNEL REQUEST	MS shall re-initiate packet access first message of two-message assignment (see specific message contents)
6	SS -> MS	IMMEDIATE ASSIGNMENT	
7	SS -> MS	IMMEDIATE ASSIGNMENT	
8	MS -> SS	CHANNEL REQUEST	MS shall re-initiate packet access first message of two-message assignment (see specific message contents) including a Request Reference corresponding to step 8.
9	SS -> MS	IMMEDIATE ASSIGNMENT	
10	SS -> MS	IMMEDIATE ASSIGNMENT	
11	MS -> SS	CHANNEL REQUEST	MS shall re-initiate packet access first message of two-message assignment (see specific message contents)
12	SS -> MS	IMMEDIATE ASSIGNMENT	
13	SS -> MS	IMMEDIATE ASSIGNMENT	
14	MS<->SS	Completion of macro {GPRS attach procedure}	
			second message (see specific message contents) sent in the last access grant block before the second multiframe after the first message elapses. SS allows MS to complete the GPRS attach procedure.

Specific message contents:

IMMEDIATE ASSIGNMENT (first message)

Information Element	Value
as default except:	
Dedicated mode or TBF:	
- TMA	1 (is first message of a two-message assignment)
- Downlink	0
- T/D	1 (assign a TBF)
Packet Channel Description:	not present
Request Reference:	as default
Timing Advance:	as default
Starting Time:	not present
IA Rest Octets:	as default

IMMEDIATE ASSIGNMENT (second message)

Information Element	Value
as default except:	
Dedicated mode or TBF:	
- TMA	0
- Downlink	0
- T/D	1 (assign a TBF)
Packet Channel Description:	as default
Request Reference:	as default
Timing Advance:	as default
Starting Time:	not present
IA Rest Octets:	spare bits (IE Rest Octets not present)

### 41.2.3.3 Packet uplink assignment / Polling bit set

#### 41.2.3.3.1 Conformance requirement

If the Polling bit is set to 1, MS shall send a PACKET CONTROL ACKNOWLEDGEMENT message (see 04.60) on the assigned PDCH, in the uplink block specified by the TBF Starting Time. In this case the TBF Starting Time is used both to indicate when the assigned PDCH becomes valid and to specify the uplink block.

#### Reference

GSM 04.08 subclause 3.5.2.1.3.2

#### 41.2.3.3.2 Test purpose

To verify that the MS sends a PACKET CONTROL ACKNOWLEDGEMENT message in the correct uplink block if the Polling bit is set in packet uplink assignment construction.

#### 41.2.3.3.3 Method of test

#### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is switched off.

#### Related PICS/PIXIT statement

-

#### Test procedure

The MS is triggered to initiate the GPRS attach procedure. The SS assigns packet uplink resources in an IMMEDIATE ASSIGNMENT message indicating one phase packet access and with the Polling bit set. The MS shall send a PACKET CONTROL ACKNOWLEDGMENT on the assigned uplink block and then complete the GPRS attach procedure.

#### Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	MS		MS is triggered to initiate GPRS attach.
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, one phase access and Polling bit set, and arbitrarily chosen TBF starting time in the future.
4	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	sent on the block indicated by TBF starting time in step 3.
5	SS<->MS	Completion of macro {GPRS attach procedure}	SS allows MS to complete GPRS attach.

#### 41.2.3.4 One phase packet access / Contention resolution / Successful case

##### 41.2.3.4.1 Conformance requirements

After receiving an IMMEDIATE ASSIGNMENT message in which one phase packet access for an uplink transfer is granted, the mobile station shall start timer T3164 and proceed with the contention resolution at one phase access defined in GSM 04.60.

##### Reference

GSM 04.08 subclause 3.5.2.1.3.2

GSM 04.60 subclause 7.1.2.3

##### 41.2.3.4.2 Test purpose

To verify that the MS includes the correct TLLI (Temporary Logical Link Identifier) in the first RLC data blocks until contention resolution is completed.

##### 41.2.3.4.3 Method of test

##### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

##### Related PICS/PIXT statement

- Support of PDP context

##### Test procedure

The MS is triggered to transfer data. The SS assigns packet uplink resources in an IMMEDIATE ASSIGNMENT message indicating one phase packet access. The MS shall start transferring RLC data blocks including the correct TLLI in the RLC data blocks which are sent preceding the reception of PACKET UPLINK ACK/NACK.

##### Maximum duration of the test

5 minutes.

Expected sequence

Step	Direction	Message	Comments
0	MS		The MS is triggered to transfer 200 octets of data.
1	MS -> SS	CHANNEL REQUEST	
2	SS -> MS	IMMEDIATE ASSIGNMENT	For uplink TBF, one phase access
3	MS -> SS	3 RLC data blocks	SS verifies correct TLLI in RLC headers.
4	SS -> MS	PACKET UPLINK ACK/NACK	Including correct TLLI
5	MS<->SS	Completion of macro {Uplink data transfer}	SS allows MS to complete data transfer.

### 41.2.3.5 One phase packet access / Contention resolution / TLLI mismatch

#### 41.2.3.5.1 Conformance requirement

If the TLLI in the PACKET UPLINK ACK/NACK message differs from that sent by the MS in the RLC block headers, the MS shall immediately stop transmitting on this TBF and re-initiate the packet access procedure unless it has already been repeated 4 times.

#### Reference

GSM 04.08 subclause 3.5.2.1.3.2

GSM 04.60 subclause 7.1.2.3

#### 41.2.3.5.2 Test purpose

To verify that the MS immediately stops transmitting if it receives a PACKET UPLINK ACK/NACK with incorrect TLLI.

#### 41.2.3.5.3 Method of test

#### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

#### Related PICS/PIXIT statement

- Support of PDP context

#### Test procedure

The MS is triggered to transfer data. The SS assigns packet uplink resources in an IMMEDIATE ASSIGNMENT message indicating one phase packet access. The MS shall start transferring RLC data blocks including the correct TLLI in the first three blocks. The SS acknowledges the RLC block transfer with a PACKET UPLINK ACK/NACK including an incorrect TLLI. The SS shall verify that the MS ‘immediately’ stops transmitting (see note below) and retries packet access procedure.

#### Note:

The MS is allowed to transmit n RLC blocks after the block containing the PACKET UPLINK ACK/NACK message (the exact value of n is specified in GSM 05.10 / 6.11).

#### Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
0	MS		The MS is triggered to transfer 200 octets of data.
1	MS -> SS	CHANNEL REQUEST	
2	SS -> MS	IMMEDIATE ASSIGNMENT	For uplink TBF, one phase packet access granted, fixed allocation.
3	MS -> SS	3 RLC data blocks	SS verifies correct TLLI in RLC headers.
4	SS -> MS	PACKET UPLINK ACK/NACK	Including incorrect TLLI
5	SS		The SS verifies that the MS transmits at most further n (=6) data blocks after step 4 (see Note) before re-initiating packet access.
6	MS -> SS	CHANNEL REQUEST	MS re-initiates packet access procedure.
7	SS -> MS	IMMEDIATE ASSIGNMENT	For uplink TBF, one phase packet access granted, fixed allocation.
8	MS<->SS	Completion of macro {Uplink data transfer}	SS allows MS to complete uplink data transfer.

### 41.2.3.6 One phase packet access / Contention resolution / Counter N3104

#### 41.2.3.6.1 Conformance requirement

The contention resolution has failed on the mobile station when the counter N3104 has reached its maximum value.

#### Reference

GSM 04.60 subclause 7.1.2.3

#### 41.2.3.6.2 Test purpose

To verify that the MS correctly sets and considers counter N3104.

#### Note

Counter N3104 is incremented by 1 with each new RLC/MAC block the mobile station sends until the first PACKET UPLINK ACK/NACK message is received.

Its maximum value is  $N3104\_MAX = 3 * BS\_CV\_MAX * \text{no-of-timeslots-assigned}$ , where BS\_CV\_MAX is broadcast in SI 13 Rest Octets.

#### 41.2.3.6.3 Method of test

##### Initial conditions

System Simulator: Default settings except:

- BS\_CV\_MAX value in System Information Type 13 arbitrarily chosen in the range 3 to 10.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

##### Related PICS/PIXT statement

- Support of PDP context

##### Test procedure

The MS is triggered to transfer 1000 octets of data. The SS assigns packet uplink resources in an IMMEDIATE ASSIGNMENT message indicating one phase packet access. The MS shall start transferring RLC data blocks. The SS

acknowledges the RLC block transfer with a correct PACKET UPLINK ACK/NACK sent after N3104\_MAX data blocks. The SS verifies that the MS stops transmitting and restarts packet access procedure.

At the second attempt, the SS sends PACKET UPLINK ACK/NACK exactly after N3104\_MAX - 1 data blocks. The SS verifies that this time the MS does not abort the access procedure and successfully completes uplink transfer.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	MS -> SS	CHANNEL REQUEST	MS is triggered to transfer 1000 data octets. for uplink TBF, indicating one phase packet access, fixed allocation and allocation bitmap granting 31 blocks.
2	SS -> MS	IMMEDIATE ASSIGNMENT	
3	MS -> SS	n RLC data blocks	SS receives n = N3104_MAX data blocks
4	SS		SS verifies that MS does not send further RLC data blocks.
5	SS -> MS	PACKET UPLINK ACK/NACK	with parameter REPEAT_ALLOCATION set. MS shall ignore this message
6	SS		SS verifies that the MS does not send further RLC data blocks.
7	MS -> SS	CHANNEL REQUEST	MS re-initiates packet access procedure. indicating one phase packet access granted.
8	SS -> MS	IMMEDIATE ASSIGNMENT	
9	MS -> SS	n-1 RLC data blocks	SS receives N3104_MAX - 1 data blocks
10	SS -> MS	PACKET UPLINK ACK/NACK	with parameter REPEAT_ALLOCATION set.
11	MS<->SS	Completion of macro {Uplink data transfer}	SS allows MS to complete uplink data transfer.

### 41.2.3.7 One phase packet access / Contention resolution / Timer T3166

#### 41.2.3.7.1 Conformance requirement

The contention resolution has failed on the mobile station when the counter N3104 has reached its maximum value, or on expiry of timer T3166.

#### Reference

GSM 04.60 subclause 7.1.2.3

#### 41.2.3.7.2 Test purpose

To verify that the MS correctly considers timer T3166.

#### 41.2.3.7.3 Method of test

#### Initial conditions

System Simulator: Default settings except:

- BS\_CV\_MAX value in System Information Type 13 is set to 15.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

Related PICS/PIXIT statement

- Support of PDP context

Test procedure

The MS is triggered to transfer 1000 octets of data. The SS assigns packet uplink resources in an IMMEDIATE ASSIGNMENT message indicating one phase packet access and dynamic allocation. The MS shall start transferring RLC data blocks. The SS reduces the block transfer rate by controlling the USF flag. In this way, the SS forces T3166 (with value 5 s.) to expire before counter N3104 reaches N3104\_MAX (with value 45 blocks for current settings). The SS verifies that the MS stops transmitting and restarts packet access procedure.

At the second attempt, the SS sends PACKET UPLINK ACK/NACK before T3166 seconds. The SS verifies that this time the MS does not abort the access procedure and successfully completes the data transfer.

Maximum duration of the test

5 minutes.



Expected sequence

Step	Direction	Message	Comments	
1	MS -> SS	CHANNEL REQUEST	MS is triggered to transfer 1000 data octets. Indicating one phase packet access granted, dynamic allocation. CS1 shall be used.	
2	SS -> MS	IMMEDIATE ASSIGNMENT		
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF addressing the MS	
4	MS -> SS	RLC data block	USF not addressing the MS	
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
8	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
14	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
15	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK		
16	MS<->SS			Steps 3 to 15 are repeated at most 22 times or until MS does not send further RLC data blocks at step 4. Note: steps 3 to 15 transfer one block every 52 frames, or 240 ms. 22 repetitions require about 5.5 s. (Timer T3166 shall expire)
17	MS -> SS	CHANNEL REQUEST		MS re-initiates packet access procedure. Indicating one phase packet access granted, dynamic allocation.
18	SS -> MS	IMMEDIATE ASSIGNMENT		
19	MS<->SS		Steps 3 to 15 are repeated 17 times. Note: 17 repetitions require about 4.3 s. (Timer T3166 should not expire)	
20	SS -> MS	PACKET UPLINK ACK/NACK	SS allows MS to complete uplink data transfer.	
21	MS<->SS	Completion of macro {Uplink data transfer}		

41.2.3.8 One phase packet access / Contention resolution / 4 access repetition attempts

41.2.3.8.1 Conformance requirement

If contention resolution for packet access fails, the mobile station shall reinitiate the packet access procedure unless it has already been repeated 4 times.

Reference

GSM 04.60 subclause 7.1.2.3

41.2.3.8.2 Test purpose

To verify that the MS repeats the packet access initiation 4 times.

41.2.3.8.3 Method of test

Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

Related PICS/PIXT statement

- Support of PDP context

Test procedure

The MS is triggered to transfer 200 octets of data. The SS assigns packet uplink resources in an IMMEDIATE ASSIGNMENT message indicating one phase packet access. The MS shall start transferring RLC data blocks including the correct TLLI in the first three blocks. The SS acknowledges the RLC block transfer with a PACKET UPLINK ACK/NACK including a TLLI not corresponding to the MS. The SS shall verify that the MS stops transmitting blocks and reinitiates packet access, which shall be repeated four times.

Note:

The MS is allowed to transmit n RLC blocks after the block containing the PACKET UPLINK ACK/NACK message (the exact value of n is specified in GSM 05.10 / 6.11).

Maximum duration of the test

5 minutes.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to transfer 200 octets of data.
2	MS -> SS	CHANNEL REQUEST	
3	SS -> MS	IMMEDIATE ASSIGNMENT	indicating one phase packet access granted, fixed allocation.
4	MS -> SS	3 RLC data blocks	
5	SS -> MS	PACKET UPLINK ACK/NACK	including incorrect TLLI
6	MS -> SS		MS aborts packet access procedure, and is allowed to transmit at most n RLC data blocks (see Note above).
7	MS<->SS		repetition 1: MS shall reinitiate a packet access procedure, steps 2 to 6 are repeated.
8	MS<->SS		repetition 2: MS reinitiates a packet access procedure, steps 2 to 6 are repeated.
9	MS<->SS		repetition 3: MS reinitiates a packet access procedure, steps 2 to 6 are repeated.
10	MS<->SS		repetition 4: MS reinitiates a packet access procedure, steps 2 to 6 are repeated.

Note: after step 10, the MS may reinitiate a packet access procedure, since higher layers may request to restart the access procedure.

### 41.2.3.9 One phase packet access / TBF starting time

#### 41.2.3.9.1 Conformance requirement

In case the packet uplink assignment construction contains a TBF starting time and the mobile station receives the IMMEDIATE ASSIGNMENT message before the TBF starting time has expired, it shall wait until the frame number indicated by the TBF starting time before accessing the channel. If the mobile station receives the message after the TBF starting time has expired, it shall ignore the TBF starting time and may immediately access the channel.

[GSM 04.60]

- if the mobile station receives a PACKET UPLINK ASSIGNMENT, PACKET TIMESLOT RECONFIGURE, or a PACKET UPLINK ACK/NACK with an ALLOCATION\_BITMAP whose TBF starting time has elapsed, the mobile station shall use whatever portion of the fixed allocation remains. If none of the fixed allocation remains, the mobile station shall ignore the message.

#### Reference

GSM 04.08 subclause 3.5.2.1.3.2

GSM 04.60 subclause 8.1.1.5

#### 41.2.3.9.2 Test purpose

To verify that the MS correctly considers the TBF Starting Time included in the IMMEDIATE ASSIGNMENT message.

#### 41.2.3.9.3 Method of test

#### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

#### Related PICS/PIXT statement

- Support of PDP context

#### Test procedure

The MS is triggered to transfer data. The SS assigns packet uplink resources in an IMMEDIATE ASSIGNMENT message indicating one phase packet access and containing a TBF starting time. The MS shall start transferring RLC data blocks at the exact frame specified by the TBF starting time.

The test is repeated with a TBF starting time in the past. In this case the MS shall 'immediately' (see note below) send RLC data blocks.

#### Note:

The MS shall start transmitting RLC blocks within n blocks after the block containing the IMMEDIATE ASSIGNMENT message (the exact value of n is specified in GSM 05.10 / 6.11).

#### Maximum duration of the test

-

#### Expected sequence

Step	Direction	Message	Comments
0	MS		The MS is triggered to transfer 200 octets of data.
1	MS -> SS	CHANNEL REQUEST	
2	SS -> MS	IMMEDIATE ASSIGNMENT	indicating one phase packet access granted, fixed allocation and an arbitrarily chosen TBF Starting Time (indicating a future frame number).
3	SS		SS verifies that MS does not transmit for frame numbers below TBF Starting Time.
4	MS -> SS	3 RLC data blocks	SS verifies that first RLC block arrives on first allowed block after TBF Starting Time.
5	SS -> MS	PACKET UPLINK ACK/NACK	Including correct TLLI.
6	MS -> SS	RLC data blocks	
7	SS<->MS	Completion of macro {Uplink data transfer}	SS allows MS to complete data transfer.
8	MS		The MS is triggered again to transfer 200 octets of data.
9	MS -> SS	CHANNEL REQUEST	
10	SS -> MS	IMMEDIATE ASSIGNMENT	indicating one phase packet access granted, fixed allocation and an arbitrarily chosen TBF Starting Time with value less than current frame number, and such that the Allocation Bitmap extends over more than 3 blocks after current frame number.
11	MS -> SS	3 RLC data blocks	SS verifies that MS 'immediately' starts sending RLC data blocks, i.e. within n (=6) blocks after step 10 (see Note above).
12	SS -> MS	PACKET UPLINK ACK/NACK	Including correct TLLI.
13	MS -> SS	RLC data blocks	
14	SS<->MS	Completion of macro {Uplink data transfer}	SS allows MS to complete data transfer.

### 41.2.3.10 One phase packet access / Timing Advance Index present

#### 41.2.3.10.1 Conformance requirement

If the timing advance index (TAI) is included in the packet uplink assignment construction, the mobile station shall use the continuous update timing advance mechanism, see GSM 05.10, using PTCCH in the same timeslot as the assigned PDCH.

#### Reference

GSM 04.08 subclause 3.5.2.1.3.2

GSM 03.64 subclause 6.5.7.2

#### 41.2.3.10.2 Test purpose

To verify that the MS uses the continuous update timing advance mechanism and sends access bursts in the PTCCH slots as determined by the Timing Advance Index (TAI) sent in the IMMEDIATE ASSIGNMENT.

#### 41.2.3.10.3 Method of test

##### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

##### Related PICS/PIXT statement

- Support of PDP context

##### Test procedure

The MS is triggered for uplink data transfer. The SS assigns packet uplink resources in an IMMEDIATE ASSIGNMENT message indicating one phase packet access and containing a Timing Advance Index. During TBF transfer, the SS shall verify the access bursts sent by the MS in the PTCCH.

##### Maximum duration of the test

-

##### Expected sequence

Step	Direction	Message	Comments
0	MS		The MS is triggered to transfer 2000 octets of data.
1	MS -> SS	CHANNEL REQUEST	
2	SS -> MS	IMMEDIATE ASSIGNMENT	For one phase packet access, dynamic allocation and including Timing Advance Index TAI=0.
3	MS -> SS	RLC data blocks	
4	SS -> MS	PACKET UPLINK ACK/NACK	Including correct TLLI.
5	MS<->SS	Completion of macro {Uplink data transfer}	SS allows MS to complete data transfer.

Verification

During TBF transfer (steps 3 to 5) the SS monitors access bursts on PTCCH which are located on slots with numbers FN, such that  $(FN \text{ mod } (8 \cdot 52)) = 12$  for  $TAI = 0$  (GSM 03.64/6.5.7.2 and GSM 05.02/Table 6). The access burst contents shall be '01111111'.

The test is repeated once more with an arbitrarily chosen TAI in the range 1 to 15. SS shall verify that the access bursts are sent in the correct PTCCH slots as specified in GSM 05.02/Table 6.

41.2.3.11 One phase packet access / Timing Advance Index not present

41.2.3.11.1 Conformance requirement

If a timing advance index (TAI) field is not included, the continuous update timing advance mechanism shall not be used.

Reference

GSM 04.08 subclause 3.5.2.1.3.2

41.2.3.11.2 Test purpose

To verify that the MS does not send any access bursts on PTCCH (i.e. it does not use the continuous update timing advance mechanism) if TAI is not present in the IMMEDIATE ASSIGNMENT message.

41.2.3.11.3 Method of test

Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

Related PICS/PIXT statement

- Support of PDP context

Test procedure

The MS is triggered to transfer data. The SS assigns packet uplink resources in an IMMEDIATE ASSIGNMENT message not including a Timing Advance Index. During TBF transfer, the SS shall verify that the MS does not send any access bursts in idle frames.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
0	MS		The MS is triggered to transfer 2000 octets of data.
1	MS -> SS	CHANNEL REQUEST	
2	SS -> MS	IMMEDIATE ASSIGNMENT	not including Timing Advance Index
3	MS -> SS	3 RLC data blocks	
4	SS -> MS	PACKET UPLINK ACK/NACK	Including correct TLLI.
5	MS -> SS	RLC data blocks	
6	SS<->MS	Completion of macro {Uplink data transfer}	SS allows MS to complete data transfer

## Verification

The SS verifies that the MS does not transmit in idle frames during data block transfer (steps 3 to 6). Idle frame numbers are 12, 25, 38 and 51 in the 52-multiframe structure.

## 41.2.4 Packet immediate assignment / Single block packet access

### 41.2.4.1 Single block packet access / Packet Resource Request

#### 41.2.4.1.1 Conformance requirement

The network shall use the TBF starting time to indicate the first frame number belonging to the single block period granted for packet access. The mobile station may use that block period to send a PACKET RESOURCE REQUEST message to initiate the two phase access defined in GSM 04.60, or to send a PACKET MEASUREMENT REPORT message, see GSM 04.60.

## Reference

GSM 04.08 subclause 3.5.2.1.3.3

#### 41.2.4.1.2 Test purpose

To verify that the MS sends PACKET RESOURCE REQUEST in the assigned block as indicated by the TBF starting time when it is triggered for uplink transfer.

#### 41.2.4.1.3 Method of test

## Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

## Related PICS/PIXT statement

- Support of PDP context

## Test procedure

The MS is triggered to initiate uplink data transfer. The SS assigns packet uplink resources for single block in an IMMEDIATE ASSIGNMENT message including a TBF starting time. The SS verifies that the MS sends a PACKET RESOURCE REQUEST at the first allowed block as indicated by the TBF starting frame.

## Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
0	MS		The MS is triggered to transfer 200 octets of data.
1	MS -> SS	CHANNEL REQUEST	For uplink TBF, single block assignment for an arbitrarily chosen TBF Starting Time in the future.
2	SS -> MS	IMMEDIATE ASSIGNMENT	
3	MS -> SS	PACKET RESOURCE REQUEST	SS verifies that first block is on first allowed block starting at frame number given by TBF Starting Time.
4	SS -> MS	PACKET ACCESS REJECT	with default contents.

### 41.2.4.2 Single block packet access / Packet Measurement Report

#### 41.2.4.2.1 Conformance requirement

The network shall use the TBF starting time to indicate the first frame number belonging to the single block period granted for packet access. The mobile station may use that block period to send a PACKET RESOURCE REQUEST message to initiate the two phase access defined in GSM 04.60, or to send a PACKET MEASUREMENT REPORT message, see GSM 04.60.

#### Reference

GSM 04.08 subclause 3.5.2.1.3.3

#### 41.2.4.2.2 Test purpose

To verify that the MS sends PACKET MEASUREMENT REPORT in the assigned uplink block when performing a measurement report procedure.

Further on, this tests verifies that the MS correctly considers reporting parameter NC\_REPORTING\_PERIOD\_I.

#### 41.2.4.2.3 Method of test

##### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, in Ready state and in Packet Idle mode.

##### Related PICS/PIXIT statement

-

##### Foreseen final state of the MS

-

##### Test procedure

The SS requests the MS via a PACKET MEASUREMENT ORDER to periodically send measurement reports. When the MS attempts a measurement report procedure, the SS assigns a single block for uplink TBF with an arbitrarily chosen TBF starting time (not yet elapsed). The SS verifies that the MS sends PACKET MEASUREMENT REPORT in the assigned block.



Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	for single block downlink assignment on PCH corresponding to MS. Including parameters: NETWORK_CONTROL_ORDER = '01' NC_REPORTING_PERIOD_I = '011' (3.84 s.)
2	SS -> MS	PACKET MEASUREMENT ORDER	
3	MS -> SS	CHANNEL REQUEST	with establishment cause 'single block access'. for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future in the range 0.5 to 2 seconds. Shall be sent in the assigned block.
4	SS -> MS	IMMEDIATE ASSIGNMENT	
5	MS -> SS	PACKET MEASUREMENT REPORT	SS verifies that the time interval between steps 3 and 6 corresponds to NC_REPORTING_PERIOD_I +/- 10%.
6	SS -> MS	CHANNEL REQUEST	
7	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, single block assignment with an arbitrarily chosen TBF starting time in the future. Shall be sent in the assigned block.
8	MS -> SS	PACKET MEASUREMENT REPORT	

## 41.2.5 Packet immediate assignment / Packet access rejection

### 41.2.5.1 Packet access rejection / wait indication

#### 41.2.5.1.1 Conformance requirement

On receipt of an IMMEDIATE ASSIGNMENT REJECT message corresponding to one of its 3 last CHANNEL REQUEST messages, the mobile station stops sending CHANNEL REQUEST messages, starts timer T3142 with the indicated value, ("wait indication" information element), starts T3146 if it has not already been started, and listens to the downlink CCCH until T3146 expires. During this time, additional IMMEDIATE ASSIGNMENT REJECT messages are ignored, but any immediate assignment corresponding to any other of its 3 last CHANNEL REQUEST messages make the mobile station follow the assignment procedure. If no such immediate assignment is received, the mobile station returns to packet idle mode.

#### Reference

GSM 04.08 subclause 3.5.2.1.3.4

#### 41.2.5.1.2 Test purpose

To verify that the MS stops sending CHANNEL REQUEST messages when receiving an IMMEDIATE ASSIGNMENT REJECT containing a Request Reference IE corresponding to one of its last 3 CHANNEL REQUEST messages.

Further on, the SS verifies that the MS makes a new attempt for uplink transfer only after T3142 seconds ("wait indication" timer) after last IMMEDIATE ASSIGNMENT REJECT elapse.

41.2.5.1.3 Method of test

Initial conditions

System Simulator: Default settings except:

- Parameter MAX\_RETRANS is set to 7 retransmissions.

Mobile Station: MS is switched off.

Related PICS/PIXIT statement

-

Foreseen final state of the MS

-

Test procedure

The MS is triggered to initiate the GPRS attach procedure. After reception of 3 CHANNEL REQUEST messages, the SS sends an IMMEDIATE ASSIGNMENT REJECT with correct Request Reference and including a waiting indication (T3142). The SS verifies that the MS stops sending CHANNEL REQUEST messages and does not attempt a new packet access until T3142 seconds elapse.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
0	MS		MS is triggered to initiate GPRS attach procedure
1	MS -> SS	CHANNEL REQUEST	including Request Reference corresponding to the CHANNEL REQUEST in step 1, and waiting time indication with value T3142=50s. SS verifies that MS does not send any further access bursts (see note below).
2	MS -> SS	CHANNEL REQUEST	
3	MS -> SS	CHANNEL REQUEST	
4	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	
5	SS		SS verifies that the access burst arrives after T3142 + 0.1*T3142 (=55s.) after last IMMEDIATE ASSIGNMENT REJECT message.
6	MS -> SS	CHANNEL REQUEST	for uplink TBF, one phase access SS allows MS to complete GPRS attach.
7	SS -> MS	IMMEDIATE ASSIGNMENT	
8	MS<->SS	Completion of macro {GPRS attach procedure}	

The test is repeated with an arbitrarily chosen value of T3142 in the range 2 to 255 seconds.

Note: The number of frames between successive access bursts considering the default Sys Info parameters used in the test is larger than 58 frames (see 04.08/Table 3.1). This value is large enough to allow the MS to respond to the IMMEDIATE ASSIGNMENT REJECT message by stopping sending the next access bursts.

## 41.2.5.2 Packet access rejection / assignment before T3142 expires

### 41.2.5.2.1 Conformance requirement

On receipt of an IMMEDIATE ASSIGNMENT REJECT message corresponding to one of its 3 last CHANNEL REQUEST messages, the mobile station stops sending CHANNEL REQUEST messages, starts timer T3142 with the indicated value, ("wait indication" information element), starts T3146 if it has not already been started, and listens to the downlink CCCH until T3146 expires. During this time, additional IMMEDIATE ASSIGNMENT REJECT messages are ignored, but any immediate assignment corresponding to any other of its 3 last CHANNEL REQUEST messages make the mobile station follow the assignment procedure. If no such immediate assignment is received, the mobile station returns to packet idle mode.

### Reference

GSM 04.08 subclause 3.5.2.1.3.4

### 41.2.5.2.2 Test purpose

To verify that the MS stops sending CHANNEL REQUEST messages when receiving an IMMEDIATE ASSIGNMENT REJECT and, if an IMMEDIATE ASSIGNMENT containing a correct Request Reference arrives before  $T = \min \{T3142, T3146\}$  seconds elapse, then the MS shall accept this assignment. (See below for a note on T3146).

### 41.2.5.2.3 Method of test

#### Initial conditions

System Simulator: Default settings except:

- Parameter MAX\_RETRANS is set to 7 retransmissions.
- Parameter TX\_INTEGER is set to 32
- CCCH is not combined with SDCCH.

Mobile Station: MS is switched off.

#### Related PICS/PIXT statement

-

#### Foreseen final state of the MS

-

#### Test procedure

The MS is triggered to initiate GPRS attach. After reception of 3 CHANNEL REQUEST messages, the SS sends an IMMEDIATE ASSIGNMENT REJECT with correct Request Reference and including a waiting indication (T3142). The SS verifies that the MS stops sending CHANNEL REQUEST messages.

Before  $T = \min \{T3142, T3146\}$  seconds elapse, the SS sends an IMMEDIATE ASSIGNMENT with correct Request Reference. The MS shall switch to the assigned PDCH and transfer the data.

Note on T3146:

T3146 is started when sending the last CHANNEL REQUEST or when receiving the IMMEDIATE ASSIGNMENT REJECT. At its expiry, the packet access is aborted.

The value of T3146 is given by  $T+2*S$  (GSM 04.08/11.1.1), where T is TX\_INTEGER and S is given in GSM 04.08/Table 3.1. The value of T3146 is 2.15 s. for the current settings.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
0	MS		MS is triggered to initiate GPRS attach.
1	MS -> SS	CHANNEL REQUEST	
2	MS -> SS	CHANNEL REQUEST	
3	MS -> SS	CHANNEL REQUEST	
4	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	including Request Reference corresponding to the CHANNEL REQUEST in step 2, and waiting time indication with value T3142 = 2 s.
5			The SS verifies that the MS stops sending CHANNEL REQUEST messages.
6	SS -> MS	IMMEDIATE ASSIGNMENT	sent after 1.5s. (of the last IMMEDIATE ASSIGNMENT REJECT) and including Request Reference corresponding to step 1.
7	SS<->MS	Completion of macro {GPRS attach procedure}	SS allows MS to complete GPRS attach.

## 41.2.6 Packet downlink assignment procedure using CCCH

### 41.2.3.1 Initiation of packet downlink assignment procedure / MS listens to correct CCCH block

#### 41.2.3.1.1 Conformance requirement

The network initiates the packet downlink assignment procedure by sending an IMMEDIATE ASSIGNMENT message in unacknowledged mode on the CCCH timeslot corresponding to CCCH group the mobile station belongs to.

On receipt of an IMMEDIATE ASSIGNMENT message [the MS] stops monitoring downlink CCCH and switches to the assigned PDCH and starts listening for downlink RLC/MAC blocks identified by the assigned TFI; it starts timer T3190.

#### Reference

GSM 04.08 subclause 3.5.3.1.2

#### 41.2.3.1.2 Test purpose

To verify that the MS responds to an IMMEDIATE ASSIGNMENT for downlink TBF sent on PCH blocks corresponding to the MS's paging group.

#### 41.2.3.1.3 Method of test

#### Initial conditions

System Simulator: Default settings except:

- Parameters CCCH\_CONF, BS\_AG\_BLK\_RES, and BS\_PA\_MFRMS are arbitrarily chosen.

#### Mobile Station:

- MS is GPRS attached, DRX have been negotiated, MS is in Ready state.
- A PDP context has been established and the MS is in Packet Idle mode.

Related PICS/PIXIT statement

- Support of PDP context
- Support of DRX

Test procedure

The SS sends an IMMEDIATE ASSIGNMENT for downlink transfer on a PCH block corresponding to its paging group (see 05.02/6.5.2) which depends on Sys Info parameters and the MS's IMSI. The MS shall switch to the assigned PDCH and exercise downlink transfer.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	sent on a PCH block corresponding to the MS's paging group, including a packet downlink assignment with correct TLLI.
2	MS<->SS	Completion of macro {Downlink data transfer}	SS completes downlink transfer of 200 octets of data.

41.2.6.2 Initiation of packet downlink assignment procedure / timer T3190

41.2.6.2.1 Conformance requirement

On receipt of an IMMEDIATE ASSIGNMENT message [the MS] stops monitoring downlink CCCH and switches to the assigned PDCH and starts listening for downlink RLC/MAC blocks identified by the assigned TFI; it then starts timer T3190.

If the mobile station does not receive a RLC/MAC block on the assigned PDCHs before timer T3190 expires, then a TBF establishment failure has occurred.

Reference

GSM 04.08 subclause 3.5.3.1.2

41.2.6.2.2 Test purpose

To verify that the MS returns to packet idle updated if RLC/MAC blocks are sent after T3190 seconds, and that the MS correctly receives RLC/MAC blocks if they are sent before T3190 seconds.

41.2.6.2.3 Method of test

Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

Related PICS/PIXIT statement

- Support of PDP context

Test procedure

The SS assigns a PDCH for downlink transfer but does not send any RLC/MAC blocks until T3190 seconds have elapsed. The MS shall return to packed idle updated and ignore the RLC/MAC blocks.

To verify that the MS returned to packet idle updated, the SS again assigns a PDCH and sends RLC/MAC blocks before T3190 seconds elapse. The SS shall successfully transfer all RLC data blocks.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	for downlink TBF on a PCH block corresponding to the MS, including a packet downlink assignment. SS waits T3190 + 10% (=5.5s) after the last IMMEDIATE ASSIGNMENT.
2	SS		
3	SS -> MS	RLC data blocks	SS sends data
4	SS		SS verifies for 10s. that the MS does not respond.
5	SS -> MS	IMMEDIATE ASSIGNMENT	SS assigns again a PDCH. SS waits T3190 – 10% (=4.5s) after the last IMMEDIATE ASSIGNMENT
6	SS		
7	SS -> MS	RLC data blocks	SS starts sending 200 octets of data.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	indicating correct reception of data blocks.
9	MS<->SS	Completion of macro {Downlink data transfer}	SS completes downlink transfer.

41.2.6.3 Initiation of packet downlink assignment procedure / TBF starting time

41.2.6.3.1 Conformance requirement

The IMMEDIATE ASSIGNMENT message may indicate a TBF starting time. If the mobile station receives the message before the TBF starting time has expired, it shall wait until the frame number indicated by the TBF starting time, start timer T3190 and switch to the assigned PDCH. If the mobile station receives the message after the TBF starting time has expired, it shall ignore the indicated TBF starting time, immediately start timer T3190 and switch to the assigned PDCH.

Reference

GSM 04.08 subclause 3.5.3.1.2

41.2.6.3.2 Test purpose

To verify that the MS correctly considers the TBF starting time during downlink assignment.

41.2.6.3.3 Method of test

Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

Related PICS/PIXIT statement

- Support of PDP context

Test procedure

The SS assigns a PDCH via an IMMEDIATE ASSIGNMENT including a TBF starting time. The SS does not send RLC data blocks after TBF starting time + T3190 elapses. The MS shall return to packed idle updated and ignore the RLC data blocks.

The SS assigns again a PDCH, and this time the SS sends RLC data blocks before TBF starting time + T3190 expires. The MS shall successfully receive the RLC data blocks.

Finally, the SS assigns the third time a PDCH, but including a TBF starting time which expired. The SS immediately sends RLC data blocks which shall be acknowledged by the MS.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	including a packet downlink assignment with a TBF Starting Time corresponding to 10s after the current frame number. SS waits 1.1 * (TBF Starting Time + T3190) (=16.5 s) after the last IMMEDIATE ASSIGNMENT. including Polling bit set and valid RRBP field. SS verifies for that the MS does not respond in the assigned block in step 3.
2	SS		
3	SS -> MS	RLC data block	
4	SS		
5	SS -> MS	IMMEDIATE ASSIGNMENT	SS assigns again a PDCH with TBF Starting Time corresponding to 10s after the current frame number. SS waits 0.9 * (TBF Starting Time + T3190) (= 13.5 s) after the last IMMEDIATE ASSIGNMENT. including Polling bit set and valid RRBP field. sent in the assigned block at step 7 indicating correct reception of downlink RLC block. SS completes data transfer.
6	SS		
7	SS -> MS	RLC data block	
8	MS -> SS	PACKET DOWNLINK ACK/NACK	
9	MS<->SS	Completion of macro {Downlink data transfer}	
10	SS -> MS	IMMEDIATE ASSIGNMENT	SS assigns again a PDCH with TBF Starting Time which already elapsed. sent in the third block after the block containing the message in step 10 (see note below), including Polling bit set and valid RRBP field. indicating correct reception of RLC block. SS completes data transfer.
11	SS -> MS	RLC data block	
12	MS -> SS	PACKET DOWNLINK ACK/NACK	
13	MS<->SS	Completion of macro {Downlink data transfer}	

Note:

The requirements to uplink and downlink assignment reaction times are stated in GSM 05.10 / 6.11: An MS shall be ready to transmit and receive using a new assignment no later than the next occurrence of block B((x+3) mod 12) where block B(x) is the last radio block containing the uplink assignment.

## 41.2.6.4 Initiation of packet downlink assignment procedure / incorrect TFI

### 41.2.6.4.1 Conformance requirement

On receipt of an IMMEDIATE ASSIGNMENT message [the MS] stops monitoring downlink CCCH and switches to the assigned PDCH and starts listening for downlink RLC/MAC blocks identified by the assigned Temporary Flow Identifier (TFI).

#### Reference

GSM 04.08 subclause 3.5.3.1.2

### 41.2.6.4.2 Test purpose

To verify that the MS correctly considers the TFI in the RLC/MAC blocks.

### 41.2.6.4.3 Method of test

#### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

#### Related PICS/PIXT statement

- Support of PDP context

#### Test procedure

The SS assigns a PDCH and starts transmitting RLC/MAC blocks with incorrect TFI. The MS shall ignore these RLC/MAC blocks and, after T3190 expires, return to packet idle mode.

To prove that the MS returns to idle mode, the SS assigns again a PDCH, and this time the SS sends RLC/MAC blocks with correct TFI. The MS shall successfully receive the data packets.

#### Maximum duration of the test

-



Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	for downlink TBF
2	SS -> MS	RLC data block	SS sends RLC blocks with incorrect TFI (i.e. not corresponding to the last IMMEDIATE ASSIGNMENT), including Polling bit set and valid RRBP field.
3	SS		SS verifies that the MS does not respond in the assigned block.
4	SS		SS waits value of T3190 + 10% (=5.5s).
5	SS -> MS	IMMEDIATE ASSIGNMENT	for downlink TBF
6	SS -> MS	RLC data block	with correct TFI, including Polling bit set and valid RRBP field.
7	MS -> SS	PACKET DOWNLINK ACK/NACK	indicating correct reception of RLC block.
8	MS<->SS	Completion of macro {Downlink data transfer}	SS completes downlink transfer.

## 41.2.7 Single block packet downlink assignment

### 41.2.7.1 Single block packet downlink assignment / TBF Starting Time

#### 41.2.7.1.1 Conformance requirement

The sending of an RLC/MAC control message to a mobile station in packet idle mode may be initiated by the RR entity on network side using the packet downlink assignment procedure. The procedure is used to assign a single downlink block on a PDCH for the transfer of the RLC/MAC control message.

The packet downlink construction in the IMMEDIATE ASSIGNMENT message shall contain only:

- the TLLI; and
- the TBF starting time.

If the mobile station receives the IMMEDIATE ASSIGNMENT message before the TBF starting time has expired, it shall wait until the frame number indicated by the TBF starting time. The network shall use the TBF starting time to indicate the first frame number belonging to the single block period assigned to the mobile station. The mobile station shall switch to the assigned PDCH and attempt to decode an RLC/MAC control message in the assigned downlink block.

#### Reference

GSM 04.08 subclause 3.5.3.2

#### 41.2.7.1.2 Test purpose

To verify that the MS correctly decodes the RLC control block sent by the network on the assigned downlink block given by TBF starting time in the IMMEDIATE ASSIGNMENT message.

#### 41.2.7.1.3 Method of test

##### Initial conditions

System Simulator: Default settings.

Mobile Station: MS is GPRS attached, in Ready state and in Packet Idle mode.

Related PICS/PIXIT statement

-

Test procedure

The SS assigns a single block for downlink via an IMMEDIATE ASSIGNMENT message on CCCH including a TBF starting time . The SS sends a PACKET MEASUREMENT ORDER message addressing the MS with Polling Bit set and a valid RRBP field.

The MS shall respond with a PACKET CONTROL ACKNOWLEDGMENT message on the assigned TBF block. This verifies that the MS correctly received the RLC control block sent in the assigned single block TBF.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	for single block downlink assignment, including a TBF starting time arbitrarily chosen in the range 0.5 to 50 s. after the current frame number.
2	SS -> MS	PACKET MEASUREMENT ORDER	sent on the block indicated by TBF starting time in step 1, including Polling bit set and valid RRBP field and addressing the MS.
3	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	sent on the block indicated by the RRBP field in step 2.

### 41.2.7.2 Single block packet downlink assignment / MS returns to packet idle mode

#### 41.2.7.2.1 Conformance requirement

Unless otherwise indicated by the RLC/MAC control message, the mobile station remains in packet idle mode. If the mobile station remains in packet idle mode, it shall continue to monitor downlink CCCH once the block period indicated by the TBF starting time has passed.

Reference

GSM 04.08 subclause 3.5.3.2

#### 41.2.7.2.2 Test purpose

To verify that the MS remains in packet idle mode and monitors downlink CCCH once the block period indicated by the TBF starting time has passed.

#### 41.2.7.2.3 Method of test

Initial conditions

System Simulator: Default settings except:

- NETWORK\_CONTROL\_ORDER in SI 13 Rest Octets set to '00' (no measurement reporting)

Mobile Station: MS is GPRS attached, a PDP context has been established and the MS is in Packet Idle mode.

Related PICS/PIXIT statement

- Support of PDP context.

Test procedure

The SS assigns a single block for downlink via an IMMEDIATE ASSIGNMENT message on CCCH including a TBF starting time . The SS sends a PACKET MEASUREMENT ORDER message requesting the MS to periodically send measurement reports.

Next, in order to verify that the MS remains in packet idle mode, the SS assigns a downlink TBF which shall be successfully completed.

The SS shall wait until the MS attempts two periodic measurement report procedures, in order to make sure that the MS correctly decoded the PACKET MEASUREMENT ORDER on the assigned single block for downlink.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	IMMEDIATE ASSIGNMENT	for single block downlink assignment, including a TBF starting time arbitrarily chosen. on the assigned single block. NETWORK_CONTROL_ORDER = '01' NC_REPORTING_PERIOD_I = '110' (30.72 s.)
2	SS -> MS	PACKET MEASUREMENT ORDER	
3	SS -> MS	PAGING REQUEST	This verifies that MS is in 'idle mode'. including Wait Indication set to 5 s.
4	MS -> SS	CHANNEL REQUEST	
5	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	
6	MS -> SS	CHANNEL REQUEST	for uplink TBF, single block assignment
7	SS -> MS	IMMEDIATE ASSIGNMENT	
8	MS -> SS	PACKET MEASUREMENT REPORT	
9	MS -> SS	CHANNEL REQUEST	The SS verifies reporting period: the time interval between CHANNEL REQUESTS messages in steps 7 and 10 shall be in the range 30.72 s. +/- 10%.
10	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, single block assignment
11	MS -> SS	PACKET MEASUREMENT REPORT	

## 41.2.8 Macros and default message contents

### 41.2.8.1 Macros

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

#### 41.2.8.1.1 GPRS attach procedure

The following table describes a signaling sequence performing the GPRS attach procedure. Note that there are different possible sequences implementing the GPRS attach procedure.

The macros {Completion of GPRS attach} in the test cases refer to the table below starting at the step required for the particular sequence.

{GPRS attach procedure}

Step	Direction	Message	Comments
0			MS is triggered to initiate the GPRS attach procedure.
1	MS -> SS	CHANNEL REQUEST	Establishment Cause is 'one phase packet access'.
2	SS -> MS	IMMEDIATE ASSIGNMENT	For uplink TBF, single phase access, dynamic allocation.
3	MS -> SS	RLC data blocks	Transporting:
4	SS -> MS	PACKET UPLINK ACK/NACK	<b>ATTACH REQUEST</b> Indicating correct reception of uplink blocks, including RRBp field set.
5	MS -> SS	PACKET CONTROL ACKNOWLEDGMENT	Sent on PACCH
6	SS -> MS	IMMEDIATE ASSIGNMENT	For downlink TBF, sent 1 s. after setp 5 on AGCH.
7	SS -> MS	RLC data blocks	Transporting: <b>ATTACH ACCEPT.</b> Last block containing a valid RRBp field and FBI set.
8A	MS -> SS	PACKET DOWNLINK ACK/NACK	Including Channel Request Description.
9A	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACH.
10A	MS -> SS	RLC data blocks	Transporting: <b>ATTACH COMPLETE</b>
11A	SS -> MS	PACKET UPLINK ACK/NACK	Including valid RRBp field
12A	MS -> SS	PACKET CONTROL ACKNOWLEDGMENT	
8B	MS -> SS	PACKET DOWNLINK ACK/NACK	Not including Channel Request Description.
9B	MS->SS	CHANNEL REQUEST	
10B	SS -> MS	IMMEDIATE ASSIGNMENT	For uplink TBF, single phase access, dynamic allocation.
11B	MS -> SS	RLC data blocks	Transporting: <b>ATTACH COMPLETE</b>
12B	SS -> MS	PACKET UPLINK ACK/NACK	Indicating correct reception of uplink blocks, including RRBp field set.
13B	MS -> SS	PACKET CONTROL ACKNOWLEDGMENT	

#### 41.2.8.1.2 Uplink data transfer

The following table describes a sequence performing uplink data transfer in acknowledged mode.

{Uplink data transfer, acknowledged mode}

Step	Direction	Message	Comments
0			A PDP context (in acknowledged RLC mode) has been established. The MS is triggered to send data.
1	MS -> SS	CHANNEL REQUEST	
2	SS -> MS	IMMEDIATE ASSIGNMENT	for uplink TBF, single block access.
3	MS -> SS	PACKET RESOURCE REQUEST	
4	SS -> MS	PACKET UPLINK ASSIGNMENT	for fixed allocation
5			Steps 6 to 8 are executed 0 to n times as needed.
6	MS -> SS	RLC data block	
7			Step 6 is repeated at most 14 times (resulting in at most 15 uplink data blocks)
8	SS -> MS	PACKET UPLINK ACK/NACK	indicating correct reception of uplink data blocks and parameter REPEAT_ ALLOCATION set.
9			Countdown procedure: Step 10 is repeated as needed.
10	MS -> SS	RLC data block	The MS shall correctly set the CV value in the RLC header, the last one being 0.
11	SS -> MS	PACKET UPLINK ACK/NACK	indicating correct reception of uplink blocks, and valid RRBP field and FBI set.
12	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	

### 41.2.8.1.3 Downlink data transfer

The following table describes a sequence performing downlink data transfer in acknowledged mode.

{Downlink data transfer, acknowledged mode}

Step	Direction	Message	Comments
0			A PDP context (in acknowledged RLC mode) has been established.
1	SS -> MS	IMMEDIATE ASSIGNMENT	for downlink TBF, sent on CCCH on the correct CCCH block the MS belongs to.
2			Steps 3 to 6 are executed 0 to n times as needed.
3	SS -> MS	RLC data block	
4			Step 3 is repeated at most 14 times with polling bit set.
5	SS -> MS	RLC data block	
6	MS -> SS	PACKET DOWNLINK ACK/NACK	indicating correct reception of downlink data blocks.
7	SS -> MS	RLC data block	
8			Step 7 is repeated as needed.
9	SS -> MS	RLC data block	Last data block with FBI bit set and a valid RRBP field.
10	MS -> SS	PACKET DOWNLINK ACK/NACK	indicating correct reception of downlink data blocks.

41.2.8.2 Default message contents

IMMEDIATE ASSIGNMENT for downlink TBF

Protocol Discriminator	RR Management
Skip Indicator	0000
Message Type	00111111
Page Mode	Normal Paging
- Page Mode	
Dedicated mode or TBF	0 (not a two-message assignment)
- TMA	0 ('no meaning')
- Downlink	1 (assign a Temporary Block Flow)
- T/D	
Packet Channel Description	PDCH
- Channel Type	slot 4
- TN	3
- TSC	0
-	00 (Binary)
-	30
- ARFCN	Pertaining to last Channel Request sent by the MS.
Request Reference	
Timing Advance	30 bit periods.
- Timing advance value	
Mobile Allocation	0
- Length	Not present.
Starting Time	
IA rest octets	HH01 (Packet Downlink Assignment)
-	
- Packet Downlink Assignment	Corresponding to the value allocated to the MS.
- TLLI	1
-	00001 (binary)
- TFI_ASSIGNMENT	1 (RLC acknowledged mode)
- RLC_MODE	0.5
- ALPHA	For GSM 900, +9 dBm
- GAMMA	For DCS 1800, +6 dBm
- POLLING	0
- TA_VALID	1 (valid)
- REL_OR_ABS_FN	1
-	0 (TIMING_ADVANCE_INDEX not present)
-	1 (TBF starting time is present)
- TBF_STARTING_TIME	indicating current frame + 50 frames
- spare padding	Spare Padding

IMMEDIATE ASSIGNMENT for downlink single block assignment

Protocol Discriminator	RR Management
Skip Indicator	0000
Message Type	00111111
Page Mode	
- Page Mode	Normal Paging
Dedicated mode or TBF	
- TMA	0 (not a two-message assignment)
- Downlink	0 ('no meaning')
- T/D	1 (assign a Temporary Block Flow)
Packet Channel Description	
- Channel Type	PDCH
- TN	slot 4
- TSC	3
-	0
-	00 (Binary)
- ARFCN	30
Request Reference	Pertaining to last Channel Request sent by the MS.
Timing Advance	
- Timing advance value	30 bit periods.
Mobile Allocation	
- Length	0
Starting Time	Not present.
IA rest octets	
-	HH01 (Packet Downlink Assignment)
- Packet Downlink Assignment	
- TLLI	Corresponding to the value allocated to the MS.
-	0 (parameters TFI_ASSIGNMENT, RLC_MODE, ALPHA, GAMMA, POLLING, TA_VALID and REL_OR_ABS_FN not present)
-	1 (TBF starting time is present)
- TBF_STARTING_TIME	indicating current frame + 50 frames
- spare padding	Spare Padding

IMMEDIATE ASSIGNMENT for uplink TBF, one phase access, dynamic allocation

Protocol Discriminator	RR Management
Skip Indicator	0000
Message Type	00111111
Page Mode	
- Page Mode	Normal Paging
Dedicated mode or TBF	
- TMA	0 ('no meaning')
- Downlink	0 ('no meaning')
- T/D	1 (assign a Temporary Block Flow)
Packet Channel Description	
- Channel Type	PDCH
- TN	slot 4
- TSC	3
-	0
-	00 (Binary)
- ARFCN	30 (decimal)
Request Reference	Pertaining to last Channel Request sent by the MS.
Timing Advance	
- Timing advance value	30 bit periods.
Mobile Allocation	
- Length	0
Starting Time	Not present.
IA rest octets	
-	HH00 (Packet Uplink Assignment)
- Packet Uplink Assignment	
-	1
- TFI_ASSIGNMENT	00001
- POLLING	0
-	0 (Dynamic Allocation)
- USF	001
- USF_GRANULARITY	0 (MS shall transmit one RLC/MAC block)
- CHANNEL_CODING_CMD	01 (CS-2)
- TLLI_BLOCK_CH_CODING	00 (CS-1)
-	1 (ALPHA is present)
- ALPHA	0.5
- GAMMA	For GSM 900, +9 dBm
-	For DCS 1800, +6 dBm
-	0 (TIMING_ADVANCE_INDEX not present)
-	1 (TBF_STARTING_TIME is present)
- TBF_STARTING_TIME	indicating current frame + 50 frames
- spare padding	Spare Padding



IMMEDIATE ASSIGNMENT for uplink TBF, one phase access, fixed allocation

Protocol Discriminator	RR Management
Skip Indicator	0000
Message Type	00111111
Page Mode	
- Page Mode	Normal Paging
Dedicated mode or TBF	
- TMA	0 'no meaning'
- Downlink	0 'no meaning'
- T/D	1 assign a Temporary Block Flow
Packet Channel Description	
- Channel Type	PDCH
- TN	slot 4
- TSC	3
-	0
-	00 (Binary)
- ARFCN	30
Request Reference	Pertaining to last Channel Request sent by the MS.
Timing Advance	
- Timing advance value	30 bit periods.
Mobile Allocation	
- Length	0
Starting Time	Not present.
IA rest octets	
-	HH00 (Packet Uplink Assignment)
- Packet Uplink Assignment	
-	1
- TFI_ASSIGNMENT	00001
- POLLING	0
-	1 (Fixed Allocation)
- ALLOCATION_BITMAP_LGTH	
-	31
- ALLOCATION_BITMAP	bitmap of length 31, all bits set
- CHANNEL_CODING_CMD	01 (CS-2)
- TLLI_BLOCK_CH_CODING	00 (CS-1)
-	1 (ALPHA is present)
- ALPHA	0.5
- GAMMA	For GSM 900, +9 dBm
-	For DCS 1800, +6 dBm
-	0 (TIMING_ADVANCE_INDEX not present)
-	1 (TBF_STARTING_TIME is present)
- TBF_STARTING_TIME	indicating (current frame + 50 frames)
- spare padding	Spare Padding

IMMEDIATE ASSIGNMENT for uplink TBF, single block access

Protocol Discriminator	RR Management
Skip Indicator	0000
Message Type	00111111
Page Mode	
- Page Mode	Normal Paging
Dedicated mode or TBF	
- TMA	0 'no meaning'
- Downlink	0 'no meaning'
- T/D	1 assign a Temporary Block Flow
Packet Channel Description	
- Channel Type	PDCH
- TN	slot 4
- TSC	3
-	0
-	00 (Binary)
- ARFCN	30
Request Reference	Pertaining to last Channel Request sent by the MS.
Timing Advance	
- Timing advance value	30 bit periods.
Mobile Allocation	
- Length	0
Starting Time	Not present.
IA rest octets	
-	HH00 (Packet Uplink Assignment)
- Packet Uplink Assignment	
-	1
- TFI_ASSIGNMENT	00001
- POLLING	0
-	1 (Fixed Allocation)
- ALLOCATION_BITMAP_LGTH	1
- ALLOCATION_BITMAP	1 (only one block granted)
- CHANNEL_CODING_CMD	01 (CS-2)
- TLLI_BLOCK_CH_CODING	00 (CS-1)
-	1 (ALPHA is present)
- ALPHA	0.5
- GAMMA	For GSM 900, +9 dBm
-	For DCS 1800, +6 dBm
-	0 (TIMING_ADVANCE_INDEX not present)
-	1 (TBF_STARTING_TIME is present)
- TBF_STARTING_TIME	indicating (current frame + 50 frames)
- spare padding	Spare Padding

## PAGING REQUEST TYPE 1

Protocol Discriminator	RR Management.
Skip Indicator	0000
Message Type	00100001
Page Mode	
- Page Mode	Normal Paging.
Channels needed	
- first channel	00
- second channel	00
Mobile Identity 1	
- odd/even indication	Even.
- Type of Identity	P-TMSI.
- Identity Digits	P-TMSI previously allocated to MS.
Mobile Identity 2	Not present.
P1 rest octets	
-	L (no Notification List Number(PCH))
-	L (no priority specified for mobile Id 1)
-	L (no priority specified for mobile Id 2)
- Packet Page Indication 1	H
- Packet Page Indication 2	L (Not present)
-	L (no Group call Information)
-	L (no Notification List Number status)
- spare padding	Spare Padding

PACKET UPLINK ASSIGNMENT

MESSAGE_TYPE	001110
PAGE_MODE	Normal Paging
Referenced Address	
-	1 (not Global TFI)
-	1 (not TLLI)
-	1 (not TQI)
-	1 (Packet Request Reference)
- Packet Request Reference	information field sent in PACKET CHANNEL REQUEST and frame number in which PACKET CHANNEL REQUEST was received
CHANNEL_CODING_COMMAND	CS-2 coding
TLLI_BLOCK_CHANNEL_CODING	CS-1 coding
{L H<UPLINK_TFI_ASSIGNMENT>}	H (assign an uplink TFI)
- UPLINK_TFI_ASSIGNMENT	0000110 (uplink TBF identifier)
Packet Timing Advance	
-	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
-	0 (no timing advance index)
{L H<Frequency Parameters>}	H (Frequency Parameters present)
- Frequency Parameters	
- TSC	5
-	00 (no hopping)
- ARFCN	For GSM 900, 30
	For DCS 1800, 650
	HL (Fixed allocation)
{0 1<List of Reference Frequency lists>}	0 (no reference frequencies)
{0 1<Mobile Allocation list>}	0 (no MA)
	LL (Dynamic Allocation)
Fixed Allocation	
- FINAL_ALLOCATION	as required in TC
- DOWNLINK_CONTROL_TIMESLOT	2
-	H (Contention Resolution TLLI is present)
- CONTENTION_RESOLUTION_TLLI	As allocated to the MS
-	H (power control parameters)
- ALPHA	0.5
- GAMMA_TN0	0 (not present)
- GAMMA_TN1	0 (not present)
- GAMMA_TN2	1
- GAMMA_TN2	9 dBm (GSM 900), 6 dBm (DCS 1800)
- GAMMA_TN3	0 (not present)
- GAMMA_TN4	0 (not present)
- GAMMA_TN5	0 (not present)
- GAMMA_TN6	0 (not present)
- GAMMA_TN7	0 (not present)
- HALF_DUPLEX_MODE	0 (no half duplex mode)
- TBF_STARTING_TIME	indicating (current frame + 91 frames)
-	L (bit map is blocks)
- ALLOCATION_BITMAP	allocate 15 consecutive blocks

PACKET DOWNLINK ASSIGNMENT

MESSAGE_TYPE	000100
PAGE_MODE	Normal Paging
Referenced Address	
-	1 (address is TLLI)
- TLLI	as allocated for MS.
MAC_MODE	Dynamic Allocation
RLC_MODE	acknowledged mode
CONTROL_ACK	0
TIMESLOT_ALLOCATION	slot 2
Packet Timing Advance	
-	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
-	0 (no timing advance index)
{L H<Frequency Parameters>}	H (Frequency Parameters present)
- Frequency Parameters	
- TSC	5
-	00 (non-hopping channel)
- ARFCN	For GSM 900, 30 For DCS 1800, 650
{L H<Power Control Parameters>}	H (Power Control Parameters present)
- ALPHA	0.5
- {0 1<GAMMA_TN0>}	0 (no GAMMA_TN0)
- {0 1<GAMMA_TN1>}	0 (no GAMMA_TN1)
- {0 1<GAMMA_TN2>}	0 (GAMMA_TN2 present)
- GAMMA_TN2	For GSM 900, +9 dBm For DCS 1800, +6 dBm
- {0 1<GAMMA_TN3>}	0 (no GAMMA_TN3)
- {0 1<GAMMA_TN4>}	0 (no GAMMA_TN4)
- {0 1<GAMMA_TN5>}	0 (no GAMMA_TN5)
- {0 1<GAMMA_TN6>}	0 (no GAMMA_TN6)
- {0 1<GAMMA_TN7>}	0 (no GAMMA_TN7)
{L H<DOWNLINK_TFI_ASSIGNMENT>}	H (assign downlink TFI)
- DOWNLINK_TFI_ASSIGNMENT	00011(Binary)
{L H<TBF_STARTING_TIME>}	H (TBF Starting Time present)
- TBF_STARTING_TIME	indicating (current frame + 13 frames)
{L H<Measurement Mapping>}	L (no measurement mapping)

### 41.3 MAC/RLC Release

All test cases in this clause apply to the Mobile Stations which support the GPRS service and are capable of activation of at least one PDP context.

The maximum duration of each test is per default 5 min.

#### 41.3.1 TBF Release / Uplink / Normal / MS initiated

##### 41.3.1.1 TBF Release / Uplink / Normal / MS initiated / Acknowledged mode

###### 41.3.1.1.1 Conformance requirements

1. The mobile station initiates release of the uplink TBF by beginning the countdown process. When the mobile station has sent the RLC data block with CV = 0 and there are no elements in the V(B) array set to the value Nacked, it shall start timer T3182 and stop timer T3180, if running. The mobile station shall continue to send RLC data blocks on each assigned uplink data block, according to the algorithm defined in GSM 04.60, 9.1.3.2.
2. Upon reception of a PACKET UPLINK ACK/NACK message the mobile station shall stop timer T3182.

3. If the PACKET UPLINK ACK/NACK message has the Final Ack Indicator bit set to '1', the mobile station shall transmit the PACKET CONTROL ACKNOWLEDGEMENT message and release the TBF. If there is no ongoing downlink TBF the mobile station shall enter packet idle mode.
4. If the PACKET UPLINK ACK/NACK message requests retransmission of RLC data blocks, the mobile station shall if necessary wait for allocation of uplink resources and then retransmit the RLC data blocks requested, restarting timer T3180 after each block is transmitted. The mobile station shall then start timer T3182 and wait for a PACKET UPLINK ACK/NACK message as above.
5. Upon transition from the packet transfer mode to the packet idle mode, a mobile station shall enter the Transfer non-DRX mode period.
6. Upon a receipt of a commanding message or indication from the network requiring an action by the mobile station, if the reaction time for such action is not specified elsewhere, the mobile station shall begin to perform the required action no later than the next occurrence of block  $B((x+6) \bmod 12)$ , where block  $B(x)$  is the radio block containing the commanding message or indication from the network.

## References

GSM 04.60, 9.3.2.3, 5.5.1.5, GSM 05.10, 6.11.4

### 41.3.1.1.2 Test purpose

To verify that in RLC acknowledged mode:

1. the MS initiates release of an uplink TBF by beginning countdown process. After  $CV = 0$  and no elements in the  $V(B)$  array set to the value "Nacked" the MS continues to send RLC data blocks on each assigned uplink data block in the way defined in GSM 04.60, 9.1.3 and waits for PACKET UPLINK ACK/NACK.
2. the MS retransmits the requested RLC data blocks if the PACKET UPLINK ACK/NACK message requests to do so. The MS then waits for another PACKET UPLINK ACK/NACK message.
3. the MS transmits the PACKET CONTROL ACKNOWLEDGEMENT message and release the TBF upon reception of a PACKET UPLINK ACK/NACK with the Final Ack Indicator bit set to '1'. If there is no ongoing downlink TBF the mobile station shall enter packet idle mode.

### 41.3.1.1.3 Method of test

#### Initial Conditions

System Simulator:

cell, default setting,  $BS\_PBCCH\_BLKS = 3$ ,  $BS\_CV\_MAX = 10$ .

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP test context2 activated.

#### Related PICS/PIXT Statement(s)

Support GPRS service,  
 Support activation of at least one PDP context,  
 The way to trigger the MS initiating an uplink packet transfer  
 Support multislot class

#### Test Procedure

The test has three parts.

1. The MS is triggered to transfer user data. A TBF of dynamic allocation in acknowledged mode with  $USF\_GRANULARITY = 1$  block is assigned. The countdown values are checked during the RLC data transferring. The SS acknowledges the all received RLC data blocks with the Final Ack Indicator bit set to '1'. The

SS assigns a downlink TBF, transfers a number of downlink data blocks and polls the MS. The MS responds the polling.

2. The MS is assigned a TBF of dynamic allocation in acknowledged mode with USF\_GRANULARITY = 4 blocks. The countdown values are checked during the RLC data transferring. The SS acknowledges the all received RLC data blocks with the Final Ack Indicator bit set to '1.
3. The MS is triggered to transfer user data. A TBF of dynamic allocation on two timeslots in acknowledged mode with USF\_GRANULARITY = 4 block is assigned. The countdown values are checked during the RLC data transferring. The SS acknowledges the all received RLC data blocks with the Final Ack Indicator bit set to '1.

## Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation one phase access with contention resolution}	n = 440 octets, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = 30, CHANNEL_CODING_COMMAND: CS-1, TLLI_BLOCK_CHANNEL_CODING: '0'B, CS-1. RLC acknowledged mode (PDP context2), without starting time
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
3	MS -> SS	UPLINK RLC DATA BLOCK	
4			Repeat step 2 and 3 until the countdown value CV=2. Acknowledge all received data blocks, USF assigned to the MS.
5	SS -> MS	PACKET UPLINK ACK/NACK	
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that CV=1. USF assigned to the MS.
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	
8	MS -> SS	UPLINK RLC DATA BLOCK	Check that CV=0. USF assigned to the MS.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	
10	MS -> SS	UPLINK RLC DATA BLOCK	Check that the data block is a retransmission of the data block transmitted in step 6, CV=1. USF assigned to the MS.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	
12	MS -> SS	UPLINK RLC DATA BLOCK	Check that the data block is a retransmission of the data block transmitted in step 8.
13	SS -> MS	PACKET UPLINK ACK/NACK	
14	MS -> SS	UPLINK RLC DATA BLOCK	Negatively acknowledge the data block transmitted in step 8, containing USF assigned to the MS. Check that the data block is a retransmission of the data block transmitted in step 8.
15	SS -> MS	PACKET UPLINK ACK/NACK	Final Ack Indicator = '1' containing a valid RRBp=26. Acknowledge the last two data blocks. Received on the radio block specified by RRBp
16	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	
17	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Downlink Assignment, acknowledged mode. Sent on PCCCH. 10 downlink data blocks, the data block with FBI = '1' and a valid RRBp Received on the block specified by RRBp in step 18. Check that the Final Ack indicator = '1'.
18	SS -> MS	DOWNLINK RLC DATA BLOCKs	
19	MS -> SS	PACKET DOWNLINK ACK/NACK	
20		{Uplink dynamic allocation one phase access with contention resolution}	n = 440 octets, USF_GRANULARITY = 4 blocks, RLC_DATA_BLOCKS_GRANTED = 30, CHANNEL_CODING_COMMAND: CS-1, TLLI_BLOCK_CHANNEL_CODING: '0'B, CS-1. RLC acknowledged mode (PDP context2), without starting time
21	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
22	MS -> SS	UPLINK RLC DATA BLOCK	
23	MS -> SS	UPLINK RLC DATA BLOCK	
24	MS -> SS	UPLINK RLC DATA BLOCK	
25	MS -> SS	UPLINK RLC DATA BLOCK	
26			
			Regard the steps 21 - 25 as a step block. Repeat the step block until the countdown value CV = 0 in one of data blocks received.



27	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS. Acknowledge all received data blocks except for the data blocks which have CV=2, CV=1, or CV=0. Set SSN value in Ack/Nack description equal to the BSN' of the received data block with CV = 2.
28	MS -> SS	UPLINK RLC DATA BLOCK	Check that the countdown value CV = 2.
29	MS -> SS	UPLINK RLC DATA BLOCK	Check that the countdown value CV = 1.
30	MS -> SS	UPLINK RLC DATA BLOCK	Check that the countdown value CV = 0.
31	MS -> SS	UPLINK RLC DATA BLOCK	Check that the countdown value CV = 2.
32	SS -> MS	PACKET UPLINK ACK/NACK	Negatively acknowledge the data blocks of CV=2, and CV=0. Acknowledge the data block of CV=1. USF assigned to the MS.
33	MS -> SS	UPLINK RLC DATA BLOCK	Check that the countdown value CV = 2.
34	MS -> SS	UPLINK RLC DATA BLOCK	Check that the countdown value CV = 0.
35	MS -> SS	UPLINK RLC DATA BLOCK	Check that the countdown value CV = 2.
36	MS -> SS	UPLINK RLC DATA BLOCK	Check that the countdown value CV = 0.
37	SS -> MS	PACKET UPLINK ACK/NACK	Final Ack Indicator = '1' containing valid RRBP. Sent on PACCH of the assigned PDCH. Acknowledge all data blocks received.
38	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.
39	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Downlink Assignment, acknowledged mode. Sent on PCCCH.
40	SS -> MS	DOWNLINK RLC DATA BLOCKS	10 downlink data blocks, the data block with FBI = '1' and a valid RRBP
41	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block specified by RRBP in step 40. Check that the Final Ack indicator = '1'.
			The following steps are not applicable to the MS in multislot class 1, 2, and 4.
42		{Uplink dynamic allocation two phase access}	n = 1000 octets, without starting time, USF_GRANULARITY = 4 blocks, RLC_DATA_BLOCKS_GRANTED = open-end, CHANNEL_CODING_COMMAND: cs4 RLC acknowledged mode (PDP context2), Two slots, USF <sub>0</sub> on TN <sub>0</sub> and USF <sub>1</sub> on TN <sub>1</sub> , are assigned.
43	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF <sub>0</sub> on PDTCH <sub>0</sub> addressing the MS.
44	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF <sub>1</sub> on PDTCH <sub>1</sub> addressing the MS, sent on the same TDMA frame as step 43.
45	MS -> SS	UPLINK RLC DATA BLOCKS	Received on the assigned PDTCH <sub>0</sub> and PDTCH <sub>1</sub> . Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
46	MS -> SS	UPLINK RLC DATA BLOCKS	Received on the assigned PDTCH <sub>0</sub> and PDTCH <sub>1</sub> .
47	MS -> SS	UPLINK RLC DATA BLOCKS	Received on the assigned PDTCH <sub>0</sub> and PDTCH <sub>1</sub> .
48	MS -> SS	UPLINK RLC DATA BLOCKS	Received on the assigned PDTCH <sub>0</sub> and PDTCH <sub>1</sub> .
49			Regard the steps 43 - 48 as a step block. Repeat the step block until the countdown value CV=0 in one of data blocks received.
50	SS -> MS	PACKET UPLINK ACK/NACK	Check the CV decrement from BS_CV_MAX (10) to 0. Final Ack Indicator = '1' containing a valid RRBP. Sent on PACCH of the assigned PDCH. Acknowledge all data blocks received.
51	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.

## 41.3.1.2 TBF Release / Uplink / Normal / MS initiated / Unacknowledged mode

### 41.3.1.2.1 Conformance requirements

The mobile station initiates release of the uplink TBF by beginning the countdown process. It indicates the end of the TBF by setting the CV value to 0 and starts timer T3182.

Upon reception of a PACKET UPLINK ACK/NACK message the mobile station shall stop timer T3182. If the PACKET UPLINK ACK/NACK message has the Final Ack Indicator bit set to '1', the mobile station shall transmit the PACKET CONTROL ACKNOWLEDGEMENT message and release the TBF. If there is no ongoing downlink TBF the mobile station shall enter packet idle mode.

If timer T3182 expires the mobile station shall release the TBF as if a PACKET UPLINK ACK/NACK message was received.

### References

GSM 04.60, 9.3.3.3

### 41.3.1.2.2 Test purpose

To verify that in RLC unacknowledged mode:

1. the MS initiates release of an uplink TBF by beginning the countdown process and indicates the end of the TBF by setting the CV value to 0.
2. the MS transmits the PACKET CONTROL ACKNOWLEDGEMENT message and release the TBF upon reception of a PACKET UPLINK ACK/NACK message with the Final Ack Indicator bit set to '1' after CV=0. If there is no ongoing downlink TBF the mobile station enters packet idle mode
3. the MS releases the TBF as if a PACKET UPLINK ACK/NACK message was received when timer T3182 expires.

41.3.1.2.3 Method of test

### Initial Conditions

1 System Simulator:

1 cell, default setting, BS\_PBCCH\_BLKs = 3, BS\_CV\_MAX = 12.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP test context3 activated.

### Related PICS/PIXT Statement(s)

Support GPRS service,  
Support activation of at least one PDP context,  
The way to trigger the MS initiating an uplink packet transfer  
Support multislot class

### Test Procedure

The test procedure has two parts.

1. The MS is triggered to transfer data. A TBF of fixed allocation in unacknowledged mode is assigned. The countdown values are checked during the RLC data transferring. The SS acknowledges the all received RLC data blocks with the Final Ack Indicator bit set to '1' and polls the MS. The MS sends PACKET CONTROL ACKNOWLEDGEMENT in response of polling. After 6 blocks the SS assigns a downlink TBF in unacknowledged mode, sends a number downlink data blocks and polls the MS with a valid RRBp. The MS responses the polling.

2. The MS is triggered to transfer data. A TBF of fixed allocation in unacknowledged mode is assigned. The countdown values are checked during the RLC data transferring. The SS does not acknowledge the received RLC data blocks. After CV = 0 the SS waits for 6s (T3182 expires). Once CV=0 the SS checks that the MS does not transfer further RLC data blocks on the assigned TBF.
3. The MS is triggered to transfer data. A TBF of fixed allocation on two timeslots in unacknowledged mode is assigned. The countdown values are checked during the RLC data transferring. The SS does not acknowledge the received RLC data blocks. Once CV=0 the SS checks that the MS does not transfer further RLC data blocks on the assigned TBF.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink fixed allocation two phase access}	n = 440 octets in RLC unacknowledged mode. (PDP context3) ALLOCATION_BITMAP_LENGTH: 30 ALLOCATION_BITMAP: exact 30 bits, TLLI_BLOCK_CHANNEL_CODING = '0'B, cs-1, CHANNEL_CODING_COMMAND = cs-1.
2	MS -> SS	UPLINK RLC DATA BLOCK	Repeat step 2 until the countdown value CV=0. The MS may send PACKET RESOURCE REQUEST during the repetition. The SS shall ignore the requests.
3			
4	SS -> MS	PACKET UPLINK ACK/NACK	
5	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Final Ack Indicator = '1' containing a valid RRBp=13, no retransmission needed.
6	SS		Received on the block specified by RRBp on PACCH of the assigned PDCH.
7	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Check that no data block is transmitted by the MS in the next 3 radio blocks.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	Downlink Assignment, acknowledged mode. Sent on PCCCH, six radio blocks from step 4. Steps 7 – 10 verify whether the MS has entered idle mode.
9			Repeat step 8 ten times. In the last data block set FBI = '1' with a valid RRBp.
10	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBp in step 9.
11		{Uplink fixed allocation two phase access}	n = 600 octets in RLC unacknowledged mode. (PDP context3) ALLOCATION_BITMAP_LENGTH: 40, ALLOCATION_BITMAP: exact 40 bits, TLLI_BLOCK_CHANNEL_CODING = '1'B, cs 1, CHANNEL_CODING_COMMAND = cs 1.
12	MS -> SS	UPLINK RLC DATA BLOCK	Received on the radio block assigned in step 11.
13			Repeat step 12 until the countdown value CV=0. The MS may send PACKET RESOURCE REQUEST during the repetition. The SS shall ignore the requests.
14	SS		Wait 6 seconds to allow T3182 expiring.
15	SS		Check that from step 14 no data block is transmitted by the MS in the allocation map assigned.
			The following steps are not applicable to the MS in multislot class 1, 2, and 4.
16	SS -> MS	{Uplink fixed allocation two phase access}	n = 1000 octets in RLC unacknowledged mode. (PDP context3) Uplink fixed allocation CHANNEL_CODING_COMMAND = cs4 DOWNLINK_CONTROL_TIMESLOT: timeslot <sub>7</sub> TIMESLOT_ALLOCATION: timeslot <sub>7</sub> and timeslot <sub>0</sub> , HALF_DUPLEX_MODE: 0, no half duplex BLOCKS_OR_BLOCK_PERIODS: block periods ALLOCATION_BITMAP_LENGTH: 30 ALLOCATION_BITMAP: exact 30 '1'B,.
17	MS -> SS	UPLINK RLC DATA BLOCKS	Received on the assigned PDTCH <sub>7</sub> and PDTCH <sub>0</sub> . The MS may send PACKET RESOURCE REQUEST. The SS shall ignore the requests. Check the CV decrement from BS_CV_MAX (=12) to 0 in the received data blocks. After CV=0 no further data blocks are transmitted. The check is done for 6 s.

The MS may send PACKET RESOURCE REQUEST when repeating step 12 and 17. The SS shall ignore the requests.

### 41.3.1.3 TBF Release / Uplink / Normal / MS initiated / Channel coding change during countdown

#### 41.3.1.3.1 Conformance requirements

If the mobile station receives a change in the Channel Coding Command in a PACKET UPLINK ACK/NACK message during the countdown procedure, the mobile station shall act upon the new Channel Coding Command. The mobile station shall then recalculate the CV values for any untransmitted RLC data blocks using the new RLC data block size.

#### References

GSM 04.60, 9.3.1

#### 41.3.1.3.2 Test purpose

It is verified that the MS acts upon the new Channel Coding Command and recalculates the CV values for any untransmitted RLC data blocks using the new RLC data block size when the MS receives a change of Channel Coding Command in a PACKET UPLINK ACK/NACK message during the countdown procedure.

#### 41.3.1.3.3 Method of test

#### Initial Conditions

System Simulator:

1 cell, default setting, BS\_PBCCH\_BLKs = 3, BS\_CV\_MAX = 7.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context3 activated.

#### Related PICS/PIXT Statement(s)

Support GPRS service,  
Support activation of at least one PDP context,  
The way to trigger the MS initiating an uplink packet transfer

#### Test Procedure

1. The MS is triggered to transfer data. A TBF of dynamic allocation with channel coding CS-4 in unacknowledged mode is assigned. The countdown values are checked during the RLC data transferring.
2. Once CV=7 (BS\_CV\_MAX) the SS acknowledges the all received RLC data blocks and changes the channel coding to CS-1. In the next received RLC data block CV=15. The countdown values are checked during the RLC data transferring.
3. When CV=7 is reached the SS acknowledges the all received RLC data blocks and changes the channel coding to CS-2. The SS checks the next received RLC data block containing CV=5. The countdown values are checked during the RLC data transferring until CV=0. The SS acknowledges the all received RLC data blocks with the Final Ack Indicator bit set to '1.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 1800 octets, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = 40, CHANNEL_CODING_COMMAND: CS-4, RLC unacknowledged mode (PDP context3), without starting time
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
3	SS -> MS	UPLINK RLC DATA BLOCK	
4			
5	SS -> MS	PACKET UPLINK ACK/NACK	
6	MS -> SS	UPLINK RLC DATA BLOCK	Repeat step 2 and 3 until the countdown value CV=7 (BS_CV_MAX). USF assigned to the MS, acknowledge the all received data blocks. CHANNEL_CODING_COMMAND = CS-1. Received on the assigned PDTCH. Check that the countdown value CV = 15.
7	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 2, containing USF assigned to the MS.
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
9			Repeat step 7 and 8 until the countdown value CV=7 (BS_CV_MAX).
10	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS, CHANNEL_CODING_COMMAND = CS-2.
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the countdown value CV = 5.
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS.
13	MS -> SS	UPLINK RLC DATA BLOCK	Repeat step 12 and 13 until the countdown value CV=0. Final Ack Indicator = '1' containing valid RRBP, acknowledge the all received data blocks.
14			
15	SS -> MS	PACKET UPLINK ACK/NACK	
16	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.

Specific Message Contents

PACKET UPLINK ACK/NACK message in step 5:

CHANNEL_CODING_COMMAND	CS-1
------------------------	------

PACKET UPLINK ACK/NACK message in step 10:

CHANNEL_CODING_COMMAND	CS-2
------------------------	------

### 41.3.2 TBF Release / Uplink / Normal / Network initiated

#### 41.3.2.1 TBF Release / Uplink / Normal / Network initiated / Acknowledged mode

##### 41.3.2.1.1 Conformance requirements

The network may initiate release of an uplink TBF by transmitting a PACKET TBF RELEASE message to the mobile station on the PACCH. A cause value indicates the reason for release.

If the cause value is "Normal release" the mobile station shall continue to the next LLC PDU boundary, starting the count down procedure at whatever value of CV is appropriate to count down to zero at the LLC PDU boundary, and then release the TBF according to the procedures in (GSM 04.60), 9.3.2.3.

## References

GSM 04.60, 8.1.1.4

### 41.3.2.1.2 Test purpose

To verify that when the MS, in an uplink TBF of the RLC acknowledged mode, receives a PACKET TBF RELEASE message with cause value "Normal release":

1. the MS continues the TBF to the next LLC PDU boundary,
2. the MS starts the count down procedure at whatever value of CV is appropriate to count down to zero at the LLC PDU boundary,
3. the MS then releases the TBF according to uplink acknowledged mode release procedure.

### 41.3.2.1.3 Method of test

#### Initial Conditions

System Simulator:

1 cell, default setting, BS\_PBCCH\_BLKs = 3, BS\_CV\_MAX = 7.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context2 activated, L2 is reset via the XID parameter Reset command.

#### Related PICS/PIXIT Statement(s)

Support GPRS service,  
Support activation of at least one PDP context,  
The way to trigger the MS initiating an uplink packet transfer

#### Test Procedure

1. The MS is triggered to transfer 1200 octets user data. A TBF of dynamic allocation in acknowledged mode is assigned. After the MS transfers several RLC data blocks the SS sends PACKET TBF RELEASE with cause value "Normal release. The length indicator, M and E bit in data block headers are checked during the RLC data transferring until CV=0 to ensure that the MS has transmitted only the RLC data block of the first LLC PDU.
2. The MS reinitiates the random access for one or two phase access request.

## Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation one phase access with contention resolution}	n = 1200 octets (Note: more than one LLC PDU is needed for the test. The default N201-U = 500 octets for an information field of the UI frame is reset at the test beginning.) USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = 62, CHANNEL_CODING_COMMAND: CS-1, TLLI_BLOCK_CHANNEL_CODING: '1'B, CS-1. RLC acknowledged mode (PDP context2), without starting time
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	
4			Repeat step 2 and 3 three times
5	SS -> MS	PACKET TBF RELEASE	Sent on the PACCH of the PDCH assigned, USF not assigned to the MS, Global TFI is same as the assigned one in step 1, Uplink_Release = yes, Cause value = "Normal release".
6	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS, on PACCH of the assigned PDCH in step 1.
7	MS -> SS	UPLINK RLC DATA BLOCK	
8			Repeat step 6 and 7 until the countdown value CV=0 in step 7. Use of the Length indicator, M bit and E bit of the received data headers to determine that only the 1 <sup>st</sup> LLC PDU is transmitted.
9	SS -> MS	PACKET UPLINK ACK/NACK	Final Ack Indicator = '1' containing valid RRBP. Acknowledge all data blocks.
10	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.
11	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 1, containing USF assigned to the MS.
12	SS		Check that no data block is transmitted by the MS in the next radio block to step 11.
13	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH for one or two phase access request.

## 41.3.2.2 TBF Release / Uplink / Normal / Network initiated / Unacknowledged mode

## 41.3.2.2.1 Conformance requirements

The network may initiate release of an uplink TBF by transmitting a PACKET TBF RELEASE message to the mobile station on the PACCH. A cause value indicates the reason for release.

If the cause value is "Normal release" a mobile station shall continue to the next LLC PDU boundary, starting the count down procedure at whatever value of CV is appropriate to count down to zero at the LLC PDU boundary, and then release the TBF according to the procedures in GSM 04.60, 9.3.3.3.

## References

GSM 04.60, 8.1.1.4, 9.3.3.3



#### 41.3.2.2.2 Test purpose

To verify that when the MS receives a PACKET TBF RELEASE message with cause value "Normal release" during an unacknowledged mode uplink TBF:

1. the MS continues the TBF to the next LLC PDU boundary,
2. the MS starts the count down procedure at whatever value of CV is appropriate to count down to zero at the LLC PDU boundary,
3. the MS then releases the TBF according to uplink unacknowledged mode release procedure.

#### 41.3.2.2.3 Method of test

##### Initial Conditions

##### System Simulator:

1 cell, default setting, BS\_PBCCH\_BLKs = 3, BS\_CV\_MAX = 15.

##### Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context3 activated.

##### Related PICS/PIXT Statement(s)

- Support GPRS service,
- Support activation of at least one PDP context,
- The way to trigger the MS initiating an uplink packet transfer

##### Test Procedure

1. The MS is triggered to transfer 1200 octets user data. A TBF of fixed allocation in unacknowledged mode is assigned. After the MS transfers several RLC data blocks the SS sends PACKET TBF RELEASE with cause value "Normal release. The length indicator, M and E bit in data block headers are checked during the RLC data transferring until CV=0 to ensure that the MS has transmitted only the RLC data block of the first LLC PDU.
2. The MS reinitiates a random access for one or two phase access request.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink fixed allocation two phase access}	n = 1200 octets in RLC unacknowledged mode. (PDP context3) ALLOCATION_BITMAP_LENGTH: 60 ALLOCATION_BITMAP: exact 60 bits, TLLI_BLOCK_CHANNEL_CODING = '0'B, cs-1, CHANNEL_CODING_COMMAND = cs 1.
2	MS -> SS	UPLINK RLC DATA BLOCK	Repeat step 2 five times. The MS may send PACKET RESOURCE REQUEST during the repetition. The SS shall ignore the requests.
3			
4	SS -> MS	PACKET TBF RELEASE	
5	MS -> SS	UPLINK RLC DATA BLOCK	Repeat step 5 until the countdown value CV=0 in step 5. Use of the Length indicator, M bit and E bit of the received data headers to determine that only the 1 <sup>st</sup> LLC PDU is transmitted.
6			
7	SS -> MS	PACKET UPLINK ACK/NACK	Final Ack Indicator = '1' containing valid RRBP, No retransmission needed. Sent on PACCH of the assigned PDCH.
8	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.
9	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH for one or two phase access

### 41.3.3 TBF Release / Uplink / Network initiated / Abnormal release

#### 41.3.3.1 Conformance requirements

The network may initiate release of an uplink TBF by transmitting a PACKET TBF RELEASE message to the mobile station on the PACCH. If the cause value is "Abnormal release" the mobile station shall immediately stop transmitting and follow the abnormal release with random access procedure.

#### References

GSM 04.60, 8.1.1.4

#### 41.3.3.2 Test purpose

To verify that the MS immediately stops transmitting and follows the abnormal release with random access procedure when it receives a PACKET TBF RELEASE message on the PACCH with cause value "Abnormal release".

#### 41.3.3.3 Method of test

#### Initial Conditions

#### System Simulator:

1 cell, default setting, BS\_PBCCH\_BLKs = 3, BS\_CV\_MAX = 9.

#### Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context2 activated.

Related PICS/PIXIT Statement(s)

- Support GPRS service,
- Support activation of at least one PDP context,
- The way to trigger the MS initiating an uplink packet transfer

Test Procedure

The MS is triggered to transfer user data. A TBF of fixed allocation in acknowledged mode is assigned. After the MS transfers several RLC data blocks the SS sends PACKET TBF RELEASE with cause value "Abnormal release. The MS reinitiates a random access for one or two phase access request.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink fixed allocation on phase access with contention resolution}	n = 1200 octets in RLC acknowledged mode. (PDP context2) TLLI_BLOCK_CHANNEL_CODING = '0'B, cs-1, CHANNEL_CODING_COMMAND = cs-1. ALLOCATION_BITMAP_LENGTH: 60 ALLOCATION_BITMAP: exact 60 bits.
2	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
3			Repeat step 2 five times. The MS may send PACKET RESOURCE REQUEST during the repetition.
4	SS -> MS	PACKET TBF RELEASE	Sent on the PACCH of the PDCH assigned. Global TFI is same as the assigned one in step 1, Uplink_Release = yes, Cause value = "Abnormal release".
5	MS -> SS	UPLINK RLC DATA BLOCK	MS is allowed to send max. 6 blocks Received on the assigned PDTCH.
6	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.

### 41.3.4 TBF Release / Downlink / Normal / Network initiated

#### 41.3.4.1 TBF Release / Downlink / Normal / Network initiated / Acknowledged mode

##### 41.3.4.1.1 Conformance requirements

If the mobile station receives an RLC data block with the FBI bit set the value '1' and with a valid RRBP field, the mobile station shall transmit a PACKET DOWNLINK ACK/NACK message in the specified uplink block. The mobile station shall continue to monitor all assigned PDCHs.

Whenever the mobile station receives an RLC data block with a valid RRBP and the mobile station has received all RLC data blocks of the TBF, the mobile station shall send the PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to '1', stop timer T3190 and start or restart timer T3192.

If the mobile station receives more than one RLC data block with the FBI set to '1', it shall accept the data from only the first one of these blocks.

If the mobile station, after sending the PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to '1', receives a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message with the Control Ack bit set to '1' while timer T3192 is running, the mobile station shall stop timer T3192, consider the previous downlink TBF released and act upon the new assignment.

When timer T3192 expires the mobile station shall stop monitoring its assigned downlink PDCHs. If the mobile station is operating in half duplex mode and received an uplink assignment during the TBF release procedure, the mobile station shall then immediately act upon the assignment. Otherwise, and if there is no ongoing uplink TBF, enter packet idle mode.

## References

GSM 04.60, 9.3.2.5

### 41.3.4.1.2 Test purpose

To verify that in a downlink TBF of acknowledged mode:

1. The MS sends PACKET DOWNLINK ACK/NACK in the specified uplink block and continues monitoring all assigned PDCHs when it receives an RLC data block with a valid RRBp field and the Final Block Indicator (FBI) = '1'.
2. Whenever the MS receives an RLC data block with a valid RRBp and has received all RLC data blocks of the TBF, it sends PACKET DOWNLINK ACK/NACK with the Final Ack Indicator bit set to '1'.
3. If the MS receives more than one RLC data block with the FBI set to '1', it accepts the data from only the first one of these blocks.
4. While timer T3192 is running, if the MS receives, after sending PACKET DOWNLINK ACK/NACK with the Final Ack Indicator bit set to '1', PACKET DOWNLINK ASSIGNMENT with the Control Ack bit set to '1', the MS acts upon the new downlink assignment.
5. The MS stops monitoring its assigned downlink PDCHs and enters packet idle mode when timer T3192 expires if there is no ongoing uplink TBF.

### 41.3.4.1.3 Method of test

#### Initial Conditions

#### System Simulator:

1 cell, default setting, BS\_PBCCH\_BLKs = 3, BS\_CV\_MAX = 15.

#### Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context2 activated.

#### Related PICS/PIXT Statement(s)

Support GPRS service,  
Support activation of at least one PDP context

#### Test Procedure

1. The MS receives PACKET DOWNLINK ASSIGNMENT on its PDCH. The SS transmits 10 downlink RLC data blocks with consecutive BSN. The SS then transmits a downlink RLC data block with the highest BSN which is ten higher than the BSN of the last RLC data block. The SS sets FBI bit and polls the MS with a valid RRBp in the header of the RLC data block. The MS acknowledges the received data blocks and request a retransmission for the missing 9 data blocks in SSN and RBB fields.
2. The SS sends another 5 RLC data blocks and polls the MS with a valid RRBp. The MS acknowledges the received data blocks and request the retransmission of the missing 4 RLC data blocks. The SS transmits the last 4 RLC data

block and polls the MS with  $RRBP=N+26$ . While the MS waiting for transmission of the final Acknowledgement the SS transmits a RLC data block which sets FBI bit and has same BSN as in the first FBI set beforehand. The MS ignores acknowledges the entire TBF with `FINAL_ACK_INDICATION` set. The SS transmits another data block with FBI set and polls the MS. The MS acknowledges the entire TBF with `FINAL_ACK_INDICATION` set. The SS waits 3 s.

3. The MS receives `PACKET DOWNLINK ASSIGNMENT` on its `PPCH`. The SS transmits a number of downlink RLC data blocks, sets FBI bit and polls the MS with a valid `RRBP`. The MS acknowledges the entire TBF with `FINAL_ACK_INDICATION` set.
4. The SS sends another `PACKET DOWNLINK ASSIGNMENT` on the assigned `PACCH` with Control ACK bit set. The SS transmits a number of downlink RLC data blocks on the new assigned `PDTCH`, sets FBI bit and polls the MS with a valid `RRBP`. The MS acknowledges the entire TBF with `FINAL_ACK_INDICATION` set.

## Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Downlink Assignment, acknowledged mode. Sent on PPCH.
2	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on downlink PDTCH assigned.
3			Repeat step 2 ten times, each time BSN is incremented by 1
4	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with valid RRBP, FBI bit is set. BSN is incremented by 10. The MS has missed 9 consecutive RLC data blocks. BSN of this data block =
5	MS -> SS	PACKET DOWNLINK ACK/NACK	(BSN of the last data block in step 3 + 10) mod 128 Received on the block specified by RRBP in step 4. Check that the Final Ack indicator = '0' and the SSN and RBB values for the 9 missing data blocks .
6	SS -> MS	DOWNLINK RLC DATA BLOCK	BSN of the data block =
7			(BSN of the last data block in step 3 + 1) mod 128 Repeat step 6 three times, each time BSN is incremented by 1 on the basis of the last BSN in step 6
8	SS -> MS	DOWNLINK RLC DATA BLOCK	A valid RRBP, BSN is incremented by 1.
9	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block specified by RRBP in step 8. Check that the Final Ack indicator = '0' and SSN and RBB values for the 4 missing data blocks.
10	SS -> MS	DOWNLINK RLC DATA BLOCK	BSN is incremented by 1
11			Repeat step 10 twice
12	SS -> MS	DOWNLINK RLC DATA BLOCK	RRBP.= N+26, BSN is incremented by 1
13	SS -> MS	DOWNLINK RLC DATA BLOCK	FBI bit is set, BSN is same as in step 4, RRBP.= N+26, sent on next radio block from step 12.
14	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block specified by RRBP in step 12. Check that the Final Ack indicator = '1'.
15	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block specified by RRBP in step 13. Check that the Final Ack indicator = '1'.
16	SS		Wait for expiry of T3192 (2s as default)
17	SS -> MS	DOWNLINK RLC DATA BLOCK	FBI bit is set, a valid RRBP. Sent on downlink PDTCH assigned in step 1.
18	SS		Check that the MS does not respond on RRBP in step 20, the MS is now in packet idle mode.
19	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Downlink Assignment, acknowledged mode. Sent on PCCCH.
20	SS -> MS	DOWNLINK RLC DATA BLOCK	
21			Repeat step 23 ten times
22	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI = '1' and valid RRBP.
23	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block specified by RRBP in step 25. Check that the Final Ack indicator = '1'.
24	SS		Wait for 80% of expiry of T3192 (1.6s)
25	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Downlink Assignment, acknowledged mode. A different slot assigned. Control Ack Bit = 1. Sent on PACCH.
26	SS -> MS	DOWNLINK RLC DATA BLOCK	
27			Repeat step 28 ten times
28	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI = '1' and valid RRBP.
29	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block specified by RRBP in step 30. Check that the Final Ack indicator = '1'.

Specific Message Contents

PACKET DOWNLINK ACK/NACK message in step 15:

Ack/Nack Description - FINAL_ACK_INDICATION - STARTING_SEQUENCE_NUMBER - RECEIVED_BLOCK_BITMAP	1 (final ack) V( R ) Acknowledges all data blocks transmitted by the MS
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PACKET DOWNLINK ASSIGNMET message in step 25:

CONTROL_ACK TIMESLOT_ALLOCATION {L H<DOWNLINK_TFI_ASSIGNMENT>} - DOWNLINK_TFI_ASSIGNMENT	1 Single slot arbitrarily chosen but different from the value in step 19 H (assign downlink TFI) Arbitrarily chosen but different from the value in step 19
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41.3.4.2 TBF Release / Downlink / Normal / Network initiated / Unacknowledged mode

41.3.4.2.1 Conformance requirements

For each RLC data block with the FBI bit set to '1' and with a valid RRBp field, the mobile station shall transmit the PACKET CONTROL ACKNOWLEDGEMENT message in the uplink block specified by the RRBp field. The mobile station shall continue to read the assigned downlink PDCHs until the block period pointed to by the RRBp. If the mobile station receives more than one RLC data block with the FBI bit set to '1' and with valid RRBp fields that point the same uplink block period, the mobile station shall transmit the PACKET CONTROL ACKNOWLEDGEMENT message only once. The mobile station shall then stop timer T3190, start timer T3192 and continue to monitor all assigned downlink PDCHs. If the mobile station then receives a subsequent RLC data block with a valid RRBp and the FBI bit set to '1', the mobile station shall retransmit the PACKET CONTROL ACKNOWLEDGEMENT message and restart timer T3192.

If the mobile station receives more than one RLC data block with the FBI set to '1', it shall accept the data from only the first one of these blocks.

If the mobile station, after sending the PACKET CONTROL ACKNOWLEDGEMENT message, receives a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message with the Control Ack bit set to '1' while timer T3192 is running, the mobile station shall stop timer T3192, consider the previous downlink TBF released and act upon the new assignment.

When timer T3192 expires the mobile station shall stop monitoring its assigned downlink PDCHs.

References

GSM 04.60, 9.3.3.5

41.3.4.2.2 Test purpose

To verify that in a downlink TBF of unacknowledged mode:

1. The MS transmits PACKET CONTROL ACKNOWLEDGEMENT in the uplink block specified by the RRBp field whenever it receives an RLC data block with a valid RRBp field and the Final Block Indicator (FBI) set to the value '1'.
2. After sending PACKET CONTROL ACKNOWLEDGEMENT the MS continues to monitor all assigned downlink PDCHs.
3. If the MS receives more than one RLC data block with the FBI bit set to '1' and with valid RRBp fields that point the same uplink block period, the MS transmits PACKET CONTROL ACKNOWLEDGEMENT only once.

4. While timer T3192 is running, if the MS receives, after sending PACKET DOWNLINK ACK/NACK with the Final Ack Indicator bit set to '1', PACKET TIMESLOT RECONFIGURE with the Control Ack bit set to '1', the MS acts upon the new downlink assignment.
5. The MS stops monitoring its assigned downlink PDCHs and enters packet idle mode when timer T3192 expires.

#### 41.3.4.2.3 Method of test

##### Initial Conditions

##### System Simulator:

1 cell, default setting, BS\_PBCCH\_BLKs = 3, BS\_CV\_MAX = 15, T3192 = 4s.

##### Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context3 activated.

##### Related PICS/PIXT Statement(s)

Support GPRS service,  
Support activation of at least one PDP context

##### Test Procedure

1. The MS receives PACKET DOWNLINK ASSIGNMENT on its PPCH. The SS transmits 10 downlink RLC data blocks with consecutive BSN. The SS then transmits a downlink RLC data block with the BSN which is ten higher than the BSN of the last RLC data block. The SS polls the MS with a valid RRBp in the header of the RLC data block. The MS acknowledges the received data blocks and indicates the missing 9 data blocks in SSN and RBB fields.
2. The SS sends another 5 RLC data blocks and polls the MS in the last RLC data block with a valid RRBp and with the FBI bit set. The MS sends PACKET CONTROL ACKNOWLEDGEMENT.
3. The SS sends a RLC data block and polls the MS in the last RLC data block with a valid RRBp and with the FBI bit set. The MS sends PACKET CONTROL ACKNOWLEDGEMENT. The SS waits 3s and repeats polling the MS again. The MS responds with PACKET CONTROL ACKNOWLEDGEMENT. The SS waits till T3192 expires.
4. The MS receives PACKET DOWNLINK ASSIGNMENT on its PPCH. The SS transmits a number of downlink RLC data blocks, sets FBI bit and polls the MS with a valid RRBp. The MS responds with PACKET CONTROL ACKNOWLEDGEMENT.
5. The SS sends another PACKET TIMESLOT RECONFIGURE on the assigned PACCH with Control ACK bit set. The SS transmits a number of downlink RLC data blocks on the new assigned PDCH, sets FBI bit and polls the MS with a valid RRBp. The MS responds with PACKET CONTROL ACKNOWLEDGEMENT.



Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Unacknowledged mode. Sent on its PPCH.
2	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on downlink PDTCH assigned.
3			Repeat step 2 ten times, each time BSN is incremented by 1
4	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with valid RRBP, BSN is incremented by 10. The MS has missed 9 consecutive RLC data blocks. BSN of this data block = (BSN of the last data block in step 3 + 10) mod 128
5	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block specified by RRBP in step 4. Check that the Final Ack indicator = '0'
8	SS -> MS	DOWNLINK RLC DATA BLOCK	A valid RRBP, BSN is incremented by 1, FBI bit is set.
9	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 8.
10			Repeat step 8 and 9 once
11	SS		Wait 3.5 seconds (T3192 not expired).
12	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI = '1' and valid RRBP, BSN is incremented by 1.
13	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 12.
14	SS		Wait for expiry of T3192
15	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI = '1' and valid RRBP. Sent on downlink PDTCH assigned in step 1.
16	SS		Check that the MS does not transmit any data block on the RRBP block. Wait 3.5 seconds (T3192 not expired).
17	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Downlink Assignment, unacknowledged mode, a different timeslot assigned.
18	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent 5 blocks from last block containing PACKET DOWNLINK ASSIGNMENT
19			Repeat step 18 ten times
20	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI = '1' and valid RRBP.
21	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	
22	SS -> MS	PACKET TIMESLOT RECONFIGURE	Wait 3.5 seconds (T3192 not expired). Downlink Assignment, unacknowledged mode. A different timeslot assigned. Control Ack Bit = 1. Sent on PACCH.
23	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent 5 blocks from last block containing PACKET TIMESLOT RECONFIGURE
24			Repeat step 23 ten times
25	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI = '1' and valid RRBP.
26	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 25. Check that the Final Ack indicator = '1'.

PACKET TIMESLOT RECONFIGURE message in step 22:

DOWNLINK_RLC_MODE CONTROL_ACK {L H<DOWNLINK_TFI_ASSIGNMENT>} - DOWNLINK_TFI_ASSIGNMENT DOWNLINK_TIMESLOT_ALLOCATION	Unacknowledged mode 1 H (assign downlink TFI) Arbitrarily chosen but different from the value in step 17 Single slot arbitrarily chosen but different from the values already assigned.
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## 41.3.5 PDCH Release

### 41.3.5.1 PDCH Release / Without TIMESLOTS\_AVAILABLE

#### 41.3.5.1.1 Conformance requirements

When a mobile station receives a PACKET PDCH RELEASE message without a TIMESLOTS\_AVAILABLE field, it shall immediately stop transmitting and receiving on the PDCH on which the PACKET PDCH RELEASE message was received, remove that PDCH from its list of assigned PDCHs.

If all of the mobile station's assigned PDCHs are removed from its list of assigned PDCH, and, if an uplink TBF was in progress, the mobile station shall perform an abnormal release with random access. If no uplink TBF was in progress, the mobile station shall perform an abnormal release with return to CCCH or PCCCH.

#### References

GSM 04.60, 8.2

#### 41.3.5.1.2 Test purpose

To verify that when the MS, having a uplink or a downlink TBF in progress, receives the PACKET PDCH RELEASE without TIMESLOTS\_AVAILABLE field:

1. it immediately stops transmitting and receiving on the PDCH on which the PACKET PDCH RELEASE message was received.
2. it performs an abnormal release with random access when all of the MS's assigned PDCHs are removed, and an uplink TBF was in progress.
3. it performs an abnormal release with return to CCCH or PCCCH when all of the MS's assigned PDCHs are removed, and no uplink TBF was in progress.

#### 41.3.5.1.3 Method of test

##### Initial Conditions

##### System Simulator:

1 cell, default setting, BS\_PBCCH\_BLKs = 3, BS\_CV\_MAX = 15.

##### Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context2 activated.

##### Related PICS/PIXT Statement(s)

Support GPRS service,  
Support multislots class  
Support activation of at least one PDP context  
The way to trigger the MS initiating an uplink packet transfer

##### Test Procedure

1. The MS is triggered to transfer user data. A TBF on one slot of dynamic allocation in acknowledged mode is assigned. After the MS transfers several RLC data blocks the SS sends PACKET PDCH RELEASE without TIMESLOTS\_AVAILABLE. The MS reinitiates a random access for one or two phase access request. A TBF is assigned to the MS to allow it to complete the uplink data transferring.
2. The MS is triggered to transfer user data. A TBF on two consecutive slots of dynamic allocation in acknowledged mode is assigned. After the MS transfers several RLC data blocks the SS sends PACKET PDCH RELEASE on one

of the assigned slots without TIMESLOTS\_AVAILABLE. It is checked that the MS does not send the data on the released time slot. The SS then sends PACKET PDCH RELEASE to remove the other PDCH. It is checked that the MS reinitiates a random access for one or two phase access request. A TBF is assigned to the MS to allow it to complete the uplink data transferring.

3. The MS receives PACKET DOWNLINK ASSIGNMENT on its PPCH. A downlink TBF with a timeslot is assigned. The SS transmits a number of downlink RLC data blocks and then sends PACKET PDCH RELEASE without TIMESLOTS\_AVAILABLE with polling. It is checked that the MS does not react upon the polling.
4. A downlink TBF with two timeslots is assigned. The SS transmits a number of downlink RLC data blocks and sends PACKET PDCH RELEASE on one of the assigned slots without TIMESLOTS\_AVAILABLE with polling. It is checked that the MS does not react upon the polling on the released timeslot. The SS sends a second PACKET PDCH RELEASE on the other assigned slots without TIMESLOTS\_AVAILABLE and polls the MS. It is checked that the MS does not react upon the polling.

Expected Sequence

Step	Direction	Message	Comments
1	MS	{Uplink fixed allocation one phase access with contention resolution}	N = 1000 octets, ALLOCATION_BITMAP_LENGTH: 40 ALLOCATION_BITMAP: exact 40 bits,, CHANNEL_CODING_COMMAND: CS-1, TLLI_BLOCK_CHANNEL_CODING: '1'B, CS-1. RLC acknowledged mode (PDP context2), without starting time
2	MS -> SS	UPLINK RLC DATA BLOCKS	10 RLC data blocks received. The MS may send PACKET RESOURCE REQUEST. The SS shall ignore the requests.
3	SS -> MS	PACKET PDCH RELEASE	Without TIMESLOTS_AVAILABLE
4	SS		SS may receive max. 6 data blocks.
5	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
6	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to order the MS making two phase access procedure. Sent on PAGCH.
7	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation with one time slot, Sent on PACCH of the same PDCH assigned.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, containing USF assigned to the MS.
10	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned.
11			Repeat step 12 and 13 four times.
12		{Completion of uplink RLC data block transfer}	
13		{Uplink fixed allocation two phase access}	The step 13 to step 26 are applicable to the MS of the multislot classes 3, 5, 6, 9, 10, 19, 24. The MS of the multislot class 1, 2, 4, 8 skips the steps.  n = 1500 octets, without starting time, DOWNLINK_CONTROL_TIMESLOT: TN <sub>0</sub> BLOCKS_ORBLOCKS_PERIODS: block periods ALLOCATION_BITMAP_LENGTH: 30 ALLOCATION_BITMAP: exact 30 TLLI_BLOCK_CHANNEL_CODING: '0'B, cs-1, CHANNEL_CODING_COMMAND: cs-4 RLC acknowledged mode (PDP context2)
14	MS -> SS	UPLINK RLC DATA BLOCKS	Received 3 data blocks on each assigned timeslots PDTCH <sub>0</sub> and PDTCH <sub>1</sub> . Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI. The MS may send PACKET RESOURCE REQUEST. The SS shall ignore the requests.
15	SS -> MS	PACKET PDCH RELEASE	Sent on the PACCH of the PDCH <sub>0</sub> assigned, without TIMESLOTS_AVAILABLE field..
16	MS -> SS	UPLINK RLC DATA BLOCKS	Received on the assigned PDTCH <sub>1</sub> .
17	SS		SS may receive max. 6 data blocks on the released timeslot.
18	SS -> MS	PACKET PDCH RELEASE	Sent on the PACCH of the PDCH <sub>1</sub> assigned, 6 blocks from the beginning of step 16, without TIMESLOTS_AVAILABLE field.
19	SS		SS may receive max. 6 data blocks on the released timeslot.
20	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.

21	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to force the MS making two phase access procedure. Sent on PAGCH.
22	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure.
23	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation with one time slot, USF_GRANULARITY = single block
24	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, containing USF assigned to the MS.
25	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned.
26		{Completion of uplink RLC data block transfer}	
27	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Downlink TFI Assignment, a timeslot assigned, acknowledged mode. Sent on PPCH.
28	SS -> MS	DOWNLINK RLC DATA BLOCKS	10 blocks sent
29	SS -> MS	PACKET PDCH RELEASE	Without TIMESLOTS_AVAILABLE
30	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on the next radio block from step 29 on PDTCH released, a valid RRB = N + 21 or 22.
31	SS		Check that no PACKET DOWNLINK ACK/NACK is received on the specified RRB on PDTCH.
32	SS -> MS	PACKET DOWNLINK ASSIGNMENT	All steps from step 32 onwards are applicable to all multislot classes except the multislot class 1.
33	SS -> MS	DOWNLINK RLC DATA BLOCKS	Downlink Assignment with two timeslots TN <sub>1</sub> and TN <sub>2</sub> assigned, acknowledged mode, on PPCH.
34	MS -> SS	PACKET DOWNLINK ACK/NACK	3 data blocks. Sent on each downlink channel, PDTCH <sub>1</sub> and PDTCH <sub>2</sub> assigned. The last data block contains a valid RRB = N + 13, on the downlink PDTCH <sub>1</sub> .
35	SS -> MS	PACKET PDCH RELEASE	Received on the block specified by RRB on PDTCH <sub>1</sub> . Check whether all data blocks sent in step 33 are acknowledged.
36	SS -> MS	DOWNLINK RLC DATA BLOCK	Without TIMESLOTS_AVAILABLE field, sent on the next block from step 34 on PACCH of PDCH <sub>1</sub> .
37	SS		Sent on the next radio block from step 35 on PDTCH <sub>1</sub> , a valid RRB = N + 21 or 22.
38	SS -> MS	DOWNLINK RLC DATA BLOCK	Check that no PACKET DOWNLINK ACK/NACK received on the block specified by RRB on PDTCH <sub>1</sub>
39	SS -> MS	PACKET PDCH RELEASE	3 data blocks. Sent on downlink PDTCH <sub>2</sub> .
40	SS -> MS	DOWNLINK RLC DATA BLOCK	Without TIMESLOTS_AVAILABLE field, sent on the next block from step 38 on PACCH of PDCH <sub>2</sub> with RRB = N + 26.
41	SS		Sent on the next radio block of step 39 on PDTCH <sub>2</sub> , a valid RRB = N + 21 or 22.
			Check that no PACKET DOWNLINK ACK/NACK received on the block specified by RRB on PDTCH <sub>2</sub> .

### 41.3.5.2 PDCH Release / With TIMESLOTS\_AVAILABLE

#### 41.3.5.2.1 Conformance requirements

When a mobile station receives a PACKET PDCH RELEASE message containing a TIMESLOTS\_AVAILABLE field, it shall immediately stop transmitting and receiving on all assigned PDCHs, which are indicated as not present in the TIMESLOTS\_AVAILABLE field, remove those PDCHs from its list of assigned PDCHs.

If all of the mobile station's assigned PDCHs are removed from its list of assigned PDCH, and, if an uplink TBF was in progress, the mobile station shall perform an abnormal release with random access. If no uplink TBF was in progress, the mobile station shall perform an abnormal release with return to CCCH or PCCCH.

If an uplink TBF in fixed allocation mode was in progress and if one of timeslots that are being released is its downlink PACCH timeslot, the mobile station shall temporarily read all downlink blocks that it is able to decode according to its

multislot capability, on all of its remaining assigned PDCHs, and act upon any RLC/MAC control message that is addressed to it, until another downlink PACCH timeslot is assigned. If the mobile station's multislot capability does not allow it to monitor the downlink of any of its assigned PDCHs, it shall perform an abnormal release with random access.

## References

GSM 04.60, 8.2

### 41.3.5.2.2 Test purpose

To verify that when the MS receives a PACKET PDCH RELEASE message with a TIMESLOTS\_AVAILABLE field indicating that one or more timeslots is no longer available for packet data service:

1. it immediately stops transmitting and receiving on all assigned PDCHs which are not presented in the TIMESLOTS\_AVAILABLE field.
2. it performs an abnormal release with random access when all of the MS's assigned PDCHs are removed, and an uplink TBF was in progress.
3. it performs an abnormal release with return to CCCH or PCCCH when all of the MS's assigned PDCHs are removed, and no uplink TBF was in progress.
4. If an uplink TBF in fixed allocation mode was in progress and if one of timeslots that are being released is its downlink PACCH timeslot, the mobile station temporarily reads all downlink blocks that it is able to decode according to its multislot capability, on all of its remaining assigned PDCHs, and acts upon any RLC/MAC control message that is addressed to it.

### 41.3.5.2.3 Method of test

#### Initial Conditions

#### System Simulator:

1 cell, default setting, BS\_PBCCH\_BLKs = 3, BS\_CV\_MAX = 15.

#### Mobile Station:

The MS is GPRS attached with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context2 activated.

#### Related PICS/PIXT Statement(s)

Support GPRS service,  
Support multislot class  
Support activation of at least one PDP context  
The way to trigger the MS initiating an uplink packet transfer

#### Test Procedure

1. The MS is triggered to transfer user data. A TBF on one slot of fixed allocation in acknowledged mode is assigned. After the MS transfers several RLC data blocks the SS sends PACKET PDCH RELEASE with TIMESLOTS\_AVAILABLE indicating no timeslot available. It is checked that the MS initiates a random access for one or two phase access request. A TBF is assigned to the MS to allow it to complete the uplink data transferring.
2. The MS is triggered to transfer user data. A TBF on two consecutive slots of fixed allocation in acknowledged mode is assigned. After the MS transfers several RLC data blocks the SS sends PACKET PDCH RELEASE with TIMESLOTS\_AVAILABLE indicating that only a timeslot is available and the assigned downlink control timeslot is no more available. The MS uses the available timeslot to complete the uplink data transferring.
3. The MS receives PACKET DOWNLINK ASSIGNMENT on its PPCH. A downlink TBF with a timeslot is assigned. The SS transmits several downlink RLC data blocks. Then SS sends PACKET PDCH RELEASE with

TIMESLOTS\_AVAILABLE indicating no timeslot available and polls the MS with a valid RRBP for acknowledgement. It is checked that the MS does not react upon the polling.

4. A downlink TBF with two timeslots is assigned. The SS transmits several downlink RLC data blocks. Then SS sends PACKET PDCH RELEASE with TIMESLOTS\_AVAILABLE indicating only a timeslot available and polls the MS with a valid RRBP for acknowledgement. It is checked that the MS does not react upon the polling and continues receiving the downlink data on the available timeslot. The SS sends another PACKET PDCH RELEASE with TIMESLOTS\_AVAILABLE indicating no timeslot available and polls the MS with a valid RRBP for acknowledgement. It is checked that the MS does not react upon the polling.

## Expected Sequence

Step	Direction	Message	Comments
1		{Uplink fixed allocation one phase access with contention resolution}	n = 1000 octets in RLC acknowledged mode. (Test PDP context2) CHANNEL_CODING_COMMAND = cs4. DOWNLINK_CONTROL_TIMESLOT: timeslot <sub>7</sub> TIMESLOT_ALLOCATION: timeslot <sub>7</sub> , HALF_DUPLEX_MODE: 0, no half duplex BLOCKS_OR_BLOCK_PERIODS: blocks ALLOCATION_BITMAP_LENGTH: 30 ALLOCATION_BITMAP: exact 30 '1'B,
2	MS -> SS	UPLINK RLC DATA BLOCKS	Received 6 data blocks on the assigned PDTCH. The MS may send PACKET RESOURCE REQUEST. The SS shall ignore the requests.
3	SS -> MS	PACKET PDCH RELEASE	Sent on the PACCH of the PDCH assigned in step 2. With TIMESLOTS_AVAILABLE indicating no timeslot available, RRBP = N + 26.
4	SS		SS may receive max. 5 data blocks on the released timeslot. SS checks that no PACKET CONTROL ACKNOWLEDGEMENT is received.
5	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
6	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to order the MS making two phase access procedure. Sent on PAGCH.
7	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 6.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation with one time slot, USF_GRANULARITY = single block, CHANNEL_CODING_COMMAND = cs4,
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on PACCH of the same PDCH assigned in step 7.
10	MS -> SS	UPLINK RLC DATA BLOCK	Sent on the PACCH of the PDCH assigned in step 9, containing USF assigned to the MS.
11		{Completion of uplink RLC data block transfer}	Received on the assigned PDTCH.
12		{Uplink fixed allocation one phase access with contention resolution}	The step 12 to step 30 are applicable to the MS in multislot classes 3, 5, 6, 9, 10, 19, 24. The MS of the multislot class 1, 2, 4, 8 skips the steps. n = 1100 octets in RLC acknowledged mode. (Test PDP context2), CHANNEL_CODING_COMMAND = cs2 DOWNLINK_CONTROL_TIMESLOT: timeslot <sub>6</sub> TIMESLOT_ALLOCATION: timeslot <sub>6</sub> and timeslot <sub>7</sub> , HALF_DUPLEX_MODE: 0, no half duplex BLOCKS_OR_BLOCK_PERIODS: block periods ALLOCATION_BITMAP_LENGTH: 30 ALLOCATION_BITMAP: exact 30 '1'B,
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH <sub>6</sub> and PDTCH <sub>7</sub> . The MS may send PACKET RESOURCE REQUEST. The SS shall ignore the requests.
14			Repeat step 13 three times
15	SS -> MS	PACKET PDCH RELEASE	Sent on the PACCH of the PDCH <sub>6</sub> assigned in step 12. With TIMESLOTS_AVAILABLE indicating no timeslot available.
16	MS -> SS	UPLINK RLC DATA BLOCK	SS may receive maximum of 6 data blocks on each assigned channel. SS checks that no PACKET CONTROL ACKNOWLEDGEMENT is received.
17	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.



18	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to order the MS making two phase access procedure. Sent on PAGCH.
19	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 18.
20	SS -> MS	PACKET UPLINK ASSIGNMENT	Uplink fixed allocation CHANNEL_CODING_COMMAND = cs4 DOWNLINK_CONTROL_TIMESLOT: timeslot <sub>7</sub> TIMESLOT_ALLOCATION: timeslot <sub>7</sub> and timeslot <sub>0</sub> , HALF_DUPLEX_MODE: 0, no half duplex BLOCKS_OR_BLOCK_PERIODS: block periods ALLOCATION_BITMAP_LENGTH: 30 ALLOCATION_BITMAP: exact 30 '1'B,.
21	MS -> SS	UPLINK RLC DATA BLOCKS	Four data blocks received on the assigned PDTCH <sub>7</sub> and PDTCH <sub>0</sub> . The MS may send PACKET RESOURCE REQUEST. The SS shall ignore the requests.
22	SS -> MS	PACKET PDCH RELEASE	Sent on the PACCH of the PDCH <sub>7</sub> assigned in step 20. With TIMESLOTS_AVAILABLE indicating only the timeslot corresponding to PDCH <sub>0</sub> available.
23	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH <sub>0</sub> . The MS may send maximum of six data blocks on PDTCH <sub>7</sub> after step 22. Repeat step 23 three times
24			
25	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge all data blocks received on PDCH <sub>0</sub> except the RLC data blocks received on PDTCH <sub>7</sub> after step 22. Sent on PACCH <sub>0</sub>
26	MS -> SS	UPLINK RLC DATA BLOCKs	until the countdown value CV=0, The MS may send PACKET RESOURCE REQUEST. The SS shall ignore the requests.
27	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge all data blocks received on PDCH <sub>0</sub> . The SS sets Final Ack Indicator = '1' containing a valid RRBp.
28	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBp on PDCH <sub>0</sub>
28	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Downlink Assignment with one timeslot assigned, acknowledged mode. Sent on PPCH.
30	SS -> MS	DOWNLINK RLC DATA BLOCK	A valid RRBp
31	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block specified by RRBp in step 30.
32	SS -> MS	DOWNLINK RLC DATA BLOCK	Repeat the step three times.
33	SS -> MS	PACKET PDCH RELEASE	Sent on the next radio block from step 32 with TIMESLOTS_AVAILABLE indicating no timeslot available.
34	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on the next radio block from step 33 on PDTCH released, a valid RRBp = N + 21 or 22.
35	SS		Check that no PACKET DOWNLINK ACK/NACK received on the block specified in step 33.
			The steps from 36 onwards are applicable to all multislot classes except the multislot class 1.
36	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Downlink Assignment with timeslot <sub>7</sub> and timeslot <sub>0</sub> assigned, acknowledged mode. Sent on PPCH.
37	SS -> MS	DOWNLINK RLC DATA BLOCK	Repeat the step five times. The RLC data blocks are received on PDTCH <sub>7</sub> and PDTCH <sub>0</sub> . The last data block on PDTCH <sub>7</sub> containing a valid RRBp.
38	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block specified by RRBp on PDTCH <sub>7</sub> Check whether all data blocks in step 37 are acknowledged.
39	SS -> MS	PACKET PDCH RELEASE	With TIMESLOTS_AVAILABLE indicating only timeslot <sub>0</sub> available. Sent on the PACCH of PDCH <sub>7</sub> .

40	SS -> MS	DOWNLINK RLC DATA BLOCK	Repeat the step five times. The RLC data blocks are received on PDTCH <sub>0</sub> .
41	MS -> SS	PACKET DOWNLINK ACK/NACK	The last data block on PDTCH <sub>0</sub> containing a valid RRBP. On the block specified by RRBP on PDTCH <sub>0</sub> . Check whether all data blocks sent in step 40 are acknowledged.
42	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with a valid RRBP = N + 26 on PDTCH <sub>7</sub> .
43	SS		Check that no PACKET DOWNLINK ACK/NACK received on the block specified.
44	SS -> MS	DOWNLINK RLC DATA BLOCK	Repeat the step five times on PDTCH <sub>0</sub> .
45	SS -> MS	PACKET PDCH RELEASE	With TIMESLOTS_AVAILABLE indicating no timeslot available sent on the next block from step 44.
46	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on the next radio block of step 45 on PDTCH <sub>0</sub> , a valid RRBP = N + 21 or 22.
47	SS		Check that no PACKET DOWNLINK ACK/NACK is received on the block specified in step 46.

### 41.3.6 Default message contents

The default message contents defined in clause 42.3.4 are applied for the all tests in 41.3.

## 41.4 DCCH related RR procedures for TBF establishment

The clause is applicable for all MS supporting GPRS service.

### 41.4.1 Default conditions and message contents

The default conditions and default message contents not specified in this clause must be set as in “GPRS default conditions”. Those conditions or message contents presented here are applicable to all the test cases described in this section. Conditions or message contents specific to a test case or a set of test cases described in this section are explicitly defined in the correspondent test case(s).

Conditions or message contents specified in a test case have the highest precedence. In addition, the default conditions and message contents described in this clause override those specified in “GPRS default conditions”.

#### 41.4.1.1 Default conditions

##### 1. Related PICS/PIXIT statements

- GPRS supported (Y/N).
- Supported frequencies (GSM 450, GSM 480, P-GSM, E-GSM, R-GSM or DCS 1 800).
- Multislot class type.
- Means of triggering GPRS attach.

##### 2. Initial conditions: SS and MS

System Simulator:

T3117 set to infinite<sup>1</sup>.

T3119 set to infinite.

<sup>1</sup> The term “infinite” will be understood here as “disabled” or the largest possible value

## 41.4.1.2 Default message contents

## 41.4.1.2.1 Default contents of system information messages

**SYSTEM INFORMATION TYPE 3**

As default except:

Information Element	Value/Remarks
Control Channel Description - CCCH_CONF	001 (1 basic physical channel used for CCCH, combined with SDCCHs)
SI 3 Rest Octets - System Information 2ter Indicator	H (SI 2ter exists)

**SYSTEM INFORMATION TYPE 5**

As default except:

Information Element	Value/Remarks
Neighbour Cell Description - BCCH allocation ARFCN	As in SI 2

**SYSTEM INFORMATION TYPE 13**

As default except:

Information Element	Value/Remarks
SI 13 Rest Octets - { 0 1 } -	0 (PCCCH not supported) 0 (Split pg cycle CCCH is not supported in the cell)
SPLIT_PG_CYCLE_CCCH_SUPPORTED - ACC_BURST_TY - SI_1_CA_INDICATION	0 (8 bit access burst shall be used by the MS) 1 (information from SI 1 message is required for packet access)

## 41.4.1.2.2 Default contents of L3 messages

**IMMEDIATE ASSIGNMENT message:**

As default except:

Information Element	Value/Remarks
Packet Response Type and Dedicated mode or TBF - T/D  - PR Type	0 (This message assigns a dedicated mode resource) 00 (Immediate Assignment procedure for RR connection establishment)

## 41.4.2 Immediate Assignment of a DCCH

### 41.4.2.1 Immediate Assignment / Contention resolution failure

#### 41.4.2.1.1 Conformance requirements

1. The initiation of the immediate assignment procedure shall be triggered by a request from the MM sublayer or LLC layer to enter the dedicated mode or by the RR entity in response to a PAGING REQUEST message.
2. The paging request to establish an RR connection shall specify a correct establishment cause on the CHANNEL REQUEST messages.
3. After sending the first CHANNEL REQUEST message, the mobile station shall start listening to the full downlink CCCH timeslot corresponding to its CCCH group.
4. On receipt of an IMMEDIATE ASSIGNMENT message assigning a DCCH corresponding to one of its 3 last CHANNEL REQUEST messages, the mobile station shall switch to the assigned channel, set the channel mode to signalling only and activate the assigned channel. It then shall establish the main signalling link with an L2-SABM frame.
5. If an information field mismatch occurs in the first contention resolution procedure, the allocated channel is released and the immediate assignment procedure shall be repeated. If an information field mismatch occurs in the repeated contention resolution procedure, the MS shall release the allocated channel and return to the ready state.
6. When establishing the main signalling link the information field in the SABM shall contain an RR INITIALISATION REQUEST message

#### References

GSM 04.08, clauses 3.3.1.1.5 and 3.3.1.3

#### 41.4.2.1.2 Test purpose

1. To verify that in response to paging the MS can correctly set up a SDCCH/4 and send an RR INITIALISATION REQUEST message containing its identity.
2. To verify that in response to paging the MS can correctly set up a frequency hopping SDCCH/8 and send an RR INITIALISATION REQUEST message containing its identity.
3. To verify that in response to paging the MS can correctly set up a TCH/F and send an RR INITIALISATION REQUEST message containing its identity.
4. To verify that the MS stops transmitting on the allocated channel and restarts the immediate assignment procedure after the first identity mismatch in the contention resolution procedure.
5. To verify that the MS stops transmitting on the allocated channel and returns to the "ready" state after the second identity mismatch in the contention resolution procedure.

#### 41.4.2.1.3 Method of test

##### Initial Conditions

System Simulator:

1 cell, GPRS supported using BCCH

Mobile Station:

The MS is GMM-DEREGISTERED and in "packet idle" mode.

## Related PICS/PIXIT Statement(s)

As default.

## Foreseen Final State of the MS

GMM-DEREGISTERED and in "packet idle" mode.

## Test Procedure

The MS is triggered to perform a GPRS attach procedure and shall start an access procedure. The SS assigns a DCCH. The MS shall go to the correct channel and send an RR INITIALISATION REQUEST message containing its identity. The SS answers with a different P-TMSI. The MS shall stop transmitting on the assigned DCCH and restart the access procedure and the SS answers again with a different P-TMSI. The MS shall return to the "ready" state and stop transmission. The SS checks that there is no transmission either on the DCCH or on the RACH during 10 seconds.

For K = 1, the test is done with the SS sending an IMMEDIATE ASSIGNMENT message describing an SDCCH/4.

For K = 2, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing an SDCCH/8.

For K = 3, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing a TCH/F.

## Maximum Duration of Test

5 minutes

## Expected Sequence

This sequence is performed for execution counter K = 1 to 3.

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access"
3	SS → MS	IMMEDIATE ASSIGNMENT	See 'specific message contents'
4	MS → SS	RR INITIALISATION REQUEST	Contains P-TMSI of the MS
5	SS → MS	L2-UA	Contains P-TMSI different to the MS's
6	SS		The SS checks that there is no transmission on the DCCH until the CHANNEL REQUEST is received
7	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access"
8	SS → MS	IMMEDIATE ASSIGNMENT	Channel Type: same as step 3
9	MS → SS	RR INITIALISATION REQUEST	Contains P-TMSI of the MS
10	SS → MS	L2-UA	Contains P-TMSI different to the MS's
11	MS		Returns to the "ready" state
12	SS		The SS checks that there is no transmission either on the DCCH or on the RACH during 10 seconds

## Specific Message Contents

## IMMEDIATE ASSIGNMENT

K=1: SDCCH/4:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/4
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

K=2: SDCCH/8 FH:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	Chosen arbitrarily, but not zero
- Training Sequence Code	Same as the BCC
- Hopping channel	RF hopping channel
- MAIO	Chosen arbitrarily from 0 to (N-1). See note 1
- HSN	Chosen arbitrarily from the set (1 to 63)
Mobile Allocation	Same as the CA

K=3: TCH/F:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	TCH/F + ACCHs
- Timeslot Number	Chosen arbitrarily, but not zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

NOTE 1: N is the number of frequencies in the Mobile Allocation IE.

## 41.4.2.2 Immediate Assignment / Use of DCCH for Uplink TBF Establishment

## 41.4.2.2.1 Conformance requirements

1. A mobile station supporting the «GPRS» option whose CHANNEL REQUEST message contained a packet access establishment cause shall obey an IMMEDIATE ASSIGNMENT message to a channel which is to be used in dedicated mode.
2. When establishing the main signalling link the information field in the SABM shall contain an RR INITIALISATION REQUEST message.
3. Following a successful contention resolution procedure, the mobile station shall implement the Early Classmark Sending option. Early classmark sending consists in the mobile station sending as soon as possible after access a CLASSMARK CHANGE message to provide the network with additional classmark information.
4. While on the dedicated channel the mobile station shall send measurement reports on the SACCH.

References

GSM 04.08, clause 3.3.1.3

41.4.2.2.2 Test purpose

1. To verify that the in an uplink TBF establishment procedure the GPRS mobile obeys an IMMEDIATE ASSIGNMENT message which commands it to use an SDCCH/4.
2. To verify that the in an uplink TBF establishment procedure the GPRS mobile obeys an IMMEDIATE ASSIGNMENT message which commands it to use a TCH/F.
3. To verify that the mobile correctly formats the RR INITIALISATION REQUEST message.
4. To verify that the mobile performs the Early Classmark Sending procedure.
5. To verify that while on the dedicated channel the mobile correctly sends measurement reports.

41.4.2.2.3 Method of test

Initial Conditions

System Simulator:

For GSM 900 and DCS 1800 MS: 4 cells:

Transmitter	Level	NCC	BSCC	ARFCN		Cell identity	LAC	RAC
				GSM900	DCS1800			
Serving, S1	-80	1	1	20	590	0001H	0001H	0001H
Neighbour, N1	-80	1	3	10	520	0002H	0001H	0001H
Neighbour, N2	-80	1	5	80	600	0003H	0001H	0001H
Neighbour, N3	-80	1	7	90	700	0004H	0001H	0001H

For GSM 450 and GSM 480 MS: 4 cells:

Transmitter	Level	NCC	BSCC	ARFCN		Cell identity	LAC	RAC
				GSM450	GSM480			
Serving, S1	-80	1	1	263	310	0001H	0001H	0001H
Neighbour, N1	-80	1	3	261	308	0002H	0001H	0001H
Neighbour, N2	-80	1	5	282	329	0003H	0001H	0001H
Neighbour, N3	-80	1	7	284	331	0004H	0001H	0001H

For 450/900 and 480/900 MS: 4 cells:

<i>Transmitter</i>	<i>Level</i>	<i>NCC</i>	<i>BSCC</i>	<i>ARFCN</i>	<i>ARFCN</i>	<i>Cell identity</i>	<i>LAC</i>	<i>RAC</i>
				<i>450/900</i>	<i>480/900</i>			
<i>Serving, S1</i>	-80	1	1	263	310	0001H	0001H	0001H
<i>Neighbour, N1</i>	-80	1	3	10	10	0002H	0001H	0001H
<i>Neighbour, N2</i>	-80	1	5	282	329	0003H	0001H	0001H
<i>Neighbour, N3</i>	-80	1	7	90	90	0004H	0001H	0001H

For 450/1800 and 480/1800 MS: 4 cells:

<i>Transmitter</i>	<i>Level</i>	<i>NCC</i>	<i>BSCC</i>	<i>ARFCN</i>	<i>ARFCN</i>	<i>Cell identity</i>	<i>LAC</i>	<i>RAC</i>
				<i>450/1800</i>	<i>480/1800</i>			
<i>Serving, S1</i>	-80	1	1	263	310	0001H	0001H	0001H
<i>Neighbour, N1</i>	-80	1	3	520	520	0002H	0001H	0001H
<i>Neighbour, N2</i>	-80	1	5	282	329	0003H	0001H	0001H
<i>Neighbour, N3</i>	-80	1	7	700	700	0004H	0001H	0001H

For 900/1800 MS: 4 cells:

<i>Transmitter</i>	<i>Level</i>	<i>NCC</i>	<i>BSCC</i>	<i>ARFCN</i>	<i>ARFCN</i>	<i>Cell identity</i>	<i>LAC</i>	<i>RAC</i>
				<i>900/1800</i>				
<i>Serving, S1</i>	-80	1	1	20	-	0001H	0001H	0001H
<i>Neighbour, N1</i>	-80	1	3	520	-	0002H	0001H	0001H
<i>Neighbour, N2</i>	-80	1	5	80	-	0003H	0001H	0001H
<i>Neighbour, N3</i>	-80	1	7	700	-	0004H	0001H	0001H

S1 and N1 with BCCH indicating GPRS supported; BCCHs of N2 and N3 indicate not support of GPRS.

Mobile Station:

The MS is GMM-DEREGISTERED, in "packet idle" mode and camped on S1.

Related PICS/PIXIT Statement(s)

As default.

Foreseen Final State of the MS

GMM-DEREGISTERED, in "packet idle" mode and camped on S1.



Test Procedure

The MS is triggered to perform a GPRS attach procedure. The SS assigns a DCCH. The MS shall go to the correct channel and send an RR INITIALISATION REQUEST message. The MS shall send a CLASSMARK CHANGE message containing an MS Classmark 2 and 3. The MS shall send continuously MEASUREMENT REPORT messages on the SACCH. Ten seconds after having sent the IMMEDIATE ASSIGNMENT message, the SS initiates RR-release by sending a CHANNEL RELEASE message. The MS shall have sent then measurements for all neighbours, irrespective of their support of GPRS.

For K = 1, the test is done with the SS sending an IMMEDIATE ASSIGNMENT message describing an SDCCH/4.

For K = 2, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing a TCH/F.

Maximum Duration of Test

5 minutes

Expected Sequence

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

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access"
3	SS → MS	IMMEDIATE ASSIGNMENT	See 'specific message contents'
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		10 seconds after sending the IMMEDIATE ASSIGNMENT message, the SS checks that measurements for all neighbours have been received
7	SS → MS	CHANNEL RELEASE	

Specific Message Contents

IMMEDIATE ASSIGNMENT

K=1: SDCCH:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/4
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

K=2: TCH/F:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	TCH/F + ACCHs
- Timeslot Number	Chosen arbitrarily, but not zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

### 41.4.2.3 Immediate Assignment / Use of DCCH for Downlink TBF Establishment

#### 41.4.2.3.1 Conformance requirements

1. A mobile station supporting the «GPRS» option whose CHANNEL REQUEST message contained a packet access establishment cause shall obey an IMMEDIATE ASSIGNMENT message to a channel which is to be used in dedicated mode.
2. When establishing the main signalling link the information field in the SABM shall contain an RR INITIALISATION REQUEST message.
3. Following a successful contention resolution procedure, the mobile station shall implement the Early Classmark Sending option. Early classmark sending consists in the mobile station sending as early as possible after access a CLASSMARK CHANGE message to provide the network with additional classmark information.
4. While on the dedicated channel the mobile station shall send measurement reports on the SACCH.

#### References

GSM 04.08, clause 3.3.1.3

#### 41.4.2.3.2 Test purpose

1. To verify that in a downlink TBF establishment procedure the GPRS mobile obeys an IMMEDIATE ASSIGNMENT message which commands it to use a hopping SDCCH/8.
2. To verify that the mobile correctly formats the RR INITIALISATION REQUEST message.
3. To verify that the mobile performs the Early Classmark Sending procedure.
4. To verify that while on the dedicated channel the mobile correctly sends measurement reports.

#### 41.4.2.3.3 Method of test

#### Initial Conditions

System Simulator:

For GSM 900 and DCS 1800 MS: 4 cells:

<i>Transmitter</i>	<i>Level</i>	<i>NCC</i>	<i>BSCC</i>	<i>ARFCN</i>	<i>ARFCN</i>	<i>Cell identity</i>	<i>LAC</i>	<i>RAC</i>
				<i>GSM900</i>	<i>DCS1800</i>			
<i>Serving, S1</i>	-80	1	1	20	590	0001H	0001H	0001H
<i>Neighbour, N1</i>	-80	1	3	10	520	0002H	0001H	0001H
<i>Neighbour, N2</i>	-80	1	5	80	600	0003H	0001H	0001H
<i>Neighbour, N3</i>	-80	1	7	90	700	0004H	0001H	0001H

For GSM 450 and GSM 480 MS: 4 cells:

<i>Transmitter</i>	<i>Level</i>	<i>NCC</i>	<i>BSCC</i>	<i>ARFCN</i>	<i>ARFCN</i>	<i>Cell identity</i>	<i>LAC</i>	<i>RAC</i>
				<i>GSM450</i>	<i>GSM480</i>			
<i>Serving, S1</i>	-80	1	1	263	310	0001H	0001H	0001H
<i>Neighbour, N1</i>	-80	1	3	261	308	0002H	0001H	0001H
<i>Neighbour, N2</i>	-80	1	5	282	329	0003H	0001H	0001H
<i>Neighbour, N3</i>	-80	1	7	284	331	0004H	0001H	0001H

For 450/900 and 480/900 MS: 4 cells:

<i>Transmitter</i>	<i>Level</i>	<i>NCC</i>	<i>BSCC</i>	<i>ARFCN</i>	<i>ARFCN</i>	<i>Cell identity</i>	<i>LAC</i>	<i>RAC</i>
				<i>450/900</i>	<i>480/900</i>			
<i>Serving, S1</i>	-80	1	1	263	310	0001H	0001H	0001H
<i>Neighbour, N1</i>	-80	1	3	10	10	0002H	0001H	0001H
<i>Neighbour, N2</i>	-80	1	5	282	329	0003H	0001H	0001H
<i>Neighbour, N3</i>	-80	1	7	90	90	0004H	0001H	0001H

For 450/1800 and 480/1800 MS: 4 cells:

<i>Transmitter</i>	<i>Level</i>	<i>NCC</i>	<i>BSCC</i>	<i>ARFCN</i>	<i>ARFCN</i>	<i>Cell identity</i>	<i>LAC</i>	<i>RAC</i>
				<i>450/1800</i>	<i>480/1800</i>			
<i>Serving, S1</i>	-80	1	1	263	310	0001H	0001H	0001H
<i>Neighbour, N1</i>	-80	1	3	520	520	0002H	0001H	0001H
<i>Neighbour, N2</i>	-80	1	5	282	329	0003H	0001H	0001H
<i>Neighbour, N3</i>	-80	1	7	700	700	0004H	0001H	0001H

For 900/1800 MS: 4 cells:

<i>Transmitter</i>	<i>Level</i>	<i>NCC</i>	<i>BSCC</i>	<i>ARFCN</i>	<i>ARFCN</i>	<i>Cell identity</i>	<i>LAC</i>	<i>RAC</i>
<i>900/1800</i>								
<i>Serving, S1</i>	<i>-80</i>	<i>1</i>	<i>1</i>	<i>20</i>	<i>-</i>	<i>0001H</i>	<i>0001H</i>	<i>0001H</i>
<i>Neighbour, N1</i>	<i>-80</i>	<i>1</i>	<i>3</i>	<i>520</i>	<i>-</i>	<i>0002H</i>	<i>0001H</i>	<i>0001H</i>
<i>Neighbour, N2</i>	<i>-80</i>	<i>1</i>	<i>5</i>	<i>80</i>	<i>-</i>	<i>0003H</i>	<i>0001H</i>	<i>0001H</i>
<i>Neighbour, N3</i>	<i>-80</i>	<i>1</i>	<i>7</i>	<i>700</i>	<i>-</i>	<i>0004H</i>	<i>0001H</i>	<i>0001H</i>

N2 and N3 with BCCH indicating GPRS supported; BCCHs of S1 and N1 indicate not support of GPRS.

Mobile Station:

The MS is GMM-DEREGISTERED, in “packet idle” mode and camped on S1.

Related PICS/PIXT Statement(s)

As default.

Foreseen Final State of the MS

GMM-DEREGISTERED, in “packet idle” mode and camped on S1.

Test Procedure

The MS is triggered to perform a GPRS attach procedure and after the MS has responded with a CHANNEL REQUEST message the SS assigns a hopping SDCCH. The MS shall go to the correct channel and send an RR INITIALISATION REQUEST message. The MS shall send a CLASSMARK CHANGE message containing an MS Classmark 2 and 3. The MS shall send continuously MEASUREMENT REPORT messages on the SACCH. Ten seconds after having sent the IMMEDIATE ASSIGNMENT message, the SS initiates RR-release by sending a CHANNEL RELEASE message. The MS shall have sent measurements for all neighbours, irrespective of their support of GPRS.

Maximum Duration of Test

5 minutes

Expected Sequence

<b>Step</b>	<b>Direction</b>	<b>Message</b>	<b>Comments</b>
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = “One phase packet access”
3	SS → MS	IMMEDIATE ASSIGNMENT	See ‘specific message contents’
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		10 seconds after sending the IMMEDIATE ASSIGNMENT message, the SS checks that measurements for all neighbours have been received
7	SS → MS	CHANNEL RELEASE	

Specific Message Contents

IMMEDIATE ASSIGNMENT

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC
- Hopping channel	RF hopping channel
- MAIO	Chosen arbitrarily from 0 to (N-1). See note 1
- HSN	Chosen arbitrarily from the set (1 to 63)
Mobile Allocation	Same as the CA except for the BCCH carrier.

NOTE 1: N is the number of frequencies in the Mobile Allocation IE.

### 41.4.3 RR commands while on DCCH

#### 41.4.3.1 Assignment Command

##### 41.4.3.1.1 Conformance requirements

1. The mobile shall obey the RR management procedures while on the dedicated channel.
2. The channel assignment procedure shall modify the physical channel configuration of the mobile station without frequency redefinition or change in synchronisation while staying in the same cell.
3. The mobile station shall release the main signalling link, disconnect TCHs if any is allocated, deactivate previously assigned channels, activate new channels and their connections —if applicable— and trigger the establishment of the data link connections for SAPI = 0.
4. If frequency hopping is applied, the mobile station shall use its current CA to decode the mobile allocation.

#### References

GSM 04.08, clauses 3.3.1.3 and 3.4.3.

##### 41.4.3.1.2 Test purpose

To verify that while on a dedicated channel the mobile correctly obeys ASSIGNMENT COMMAND messages.

##### 41.4.3.1.3 Method of test

#### Initial Conditions

System Simulator:

1 cell. GPRS supported using BCCH

For multiband tests, it will operate in upper band.

Mobile Station:

The MS is GMM-DEREGISTERED and in “packet idle” mode.

#### Related PICS/PIXT Statement(s)

As default.

Foreseen Final State of the MS

GMM-DEREGISTERED and in "packet idle" mode.

Test Procedure

The MS is triggered to perform a GPRS attach procedure. The MS shall go to the correct channel and send an RR INITIALISATION REQUEST message. As soon as the DCCH is established, the SS sends an ASSIGNMENT COMMAND message and the MS shall switch to the assigned channel and return an ASSIGNMENT COMPLETE message on the new channel. The MS shall send MEASUREMENT REPORT messages on the SACCH associated with the new DCCH. The SS clears the new DCCH by sending a CHANNEL RELEASE message 10 seconds after sending the ASSIGNMENT COMMAND.

For K = 1, the test is done with the SS sending an IMMEDIATE ASSIGNMENT message describing a hopping SDCCH/8 and the ASSIGNMENT COMMAND message describing an SDCCH/8.

For K = 2, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing an SDCCH/4 and the ASSIGNMENT COMMAND message describing an SDCCH/8.

For K = 3, and the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing an SDCCH/8 and the ASSIGNMENT COMMAND message describing a TCH/F.

Maximum Duration of Test

5 minutes

Expected Sequence

This sequence is performed for execution counter K = 1 to 3.

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	
3	SS → MS	IMMEDIATE ASSIGNMENT	See 'specific message contents'
4	MS → SS	RR INITIALISATION REQUEST	
5		{ Classmark and measurement }	Macro
6	SS → MS	ASSIGNMENT COMMAND	See 'specific message contents'
7	MS → SS	ASSIGNMENT COMPLETE	Sent on the correct channel after establishment of the main signalling link. Cause = "normal event"
8		{ Measurement reporting }	Macro. Messages sent on the SACCH associated with the new DCCH
9	SS → MS	CHANNEL RELEASE	10 seconds after sending the ASSIGNMENT COMMAND

Specific Message Contents

IMMEDIATE ASSIGNMENT

K=1: SDCCH/8 FH:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	Chosen arbitrarily, but not zero
- Training Sequence Code	Same as the BCC
- Hopping channel	RF hopping channel
- MAIO	Chosen arbitrarily from 0 to (N-1). See note 1
- HSN	Chosen arbitrarily from the set (1 to 63)
Mobile Allocation	Same as the CA

NOTE 1: N is the number of frequencies in the Mobile Allocation IE.

K=2: SDCCH/4:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/4
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	For GSM 450: 263 For GSM 480: 310 For GSM 900, 450/900 and 480/900: 20 For DCS 1 800, 450/900, 480/900 and for 900/1800: 590
Mobile Allocation	Not included (length = 0)

K=3: SDCCH/8:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	For GSM 450: 267 For GSM 480: 315 For GSM 900, 450/900 and 480/900: 30 For DCS 1 800/450/1800, 480/1800 and for 900/1800: 650
Mobile Allocation	Not included (length = 0)

ASSIGNMENT COMMAND

K=1, 2: SDCCH/8:

Information Element	Value/Remarks
Channel Description 2 - Channel Type and TDMA offset TDMA offset - Timeslot Number - Training Sequence Code - Hopping channel - ARFCN	SDCCH/8 Chosen arbitrarily Chosen arbitrarily, but not zero Same as the BCC Single RF channel For GSM 450: 267 For GSM 480: 315 For GSM 900, 450/900 and 480/900: 30 For DCS 1 800, 450/1800, 480/1800 and for 900/1800: 650
Mobile Allocation	Not included (length = 0)

K=3: TCH/F:

Information Element	Value/Remarks
Channel Description 2 - Channel Type and TDMA offset - Timeslot Number - Training Sequence Code - Hopping channel - ARFCN	TCH/F + ACCHs Chosen arbitrarily, but not zero Same as the BCC Single RF channel For GSM 450: 263 For GSM 480: 310 For GSM 900, 450/900 and 480/900: 20 For DCS 1 800, 450/1800, 480/1800 and for 900/1800: 590
Mobile Allocation	Not included (length = 0)

### 41.4.3.2 Handover

#### 41.4.3.2.1 Conformance requirements

1. The mobile shall obey the RR management procedures while on the dedicated channel.
2. The handover procedure shall modify the physical channel configuration of the mobile station.
3. During the handover procedure the mobile station shall release the main signalling link, disconnect TCHs if any is allocated, deactivate previously assigned channels, activate new channels and their connections —if applicable— and trigger the establishment of the data link connections for SAPI=0.

#### References

GSM 04.08, clauses 3.3.1.3 and 3.4.4

GSM 04.13, clause 5.2.6.2

#### 41.4.3.2.2 Test purpose

To verify that while on a dedicated channel the GPRS mobile correctly obeys HANDOVER COMMAND messages in the particular cases of

1. hopping SDCCH/8 to SDCCH/4,
2. SDCCH/4 to TCH/F.



## 41.4.3.2.3 Method of test

## Initial Conditions

## System Simulator:

2 cells, A and B with same LAI and RAC. GPRS supported using BCCH in both cells.

For multiband test, cell A will operate in lower band and cell B in upper band.

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 DCS 1 800, the Cell Allocation of both Cell A and Cell B shall be coded using range 256 format.

## Mobile Station:

The MS is GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

## Related PICS/PIXT Statement(s)

As default.

## Foreseen Final State of the MS

GMM-DEREGISTERED, in "packet idle" mode and camped on cell B.

## Test Procedure

The MS is triggered to perform a GPRS attach procedure and shall send a CHANNEL REQUEST message. The SS then assigns a DCCH to the MS. Once that this channel has been allocated, the SS waits 5 seconds for the MS to synchronise to the neighbouring cells and sends a HANDOVER COMMAND message on the main DCCH demanding the MS to move to a DCCH in another cell. The MS shall begin to send access bursts on the new DCCH of the target cell. After receiving one access burst, the SS sends a PHYSICAL INFORMATION message. 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<sup>2</sup> a HANDOVER COMPLETE message, before "x" MS after the end of the PHYSICAL INFORMATION message, but not before an UA frame has been sent by the SS. The value of "x" depends upon the target channel and is specified in the specific message contents section. The SS clears the new DCCH by sending a CHANNEL RELEASE message 10 seconds after sending the HANDOVER COMMAND

For K = 1, the test is done with the SS sending an IMMEDIATE ASSIGNMENT message describing a hopping SDCCH/8 and handing over to an SDCCH/4.

For K = 2 the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing an SDCCH/4 and handing over to a TCH/F.

## Maximum Duration of Test

5 minutes

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<sup>2</sup> The term "ready to transmit" is defined in GSM 04.13

Expected Sequence

This sequence is performed for execution counter K = 1 to 2

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Channel Type: see 'specific message contents'
3	SS → MS	IMMEDIATE ASSIGNMENT	
4	MS → SS	RR INITIALISATION REQUEST	
5		{ Classmark and measurement }	
6	SS		Macro The SS waits 5 seconds
7	SS → MS	HANDOVER COMMAND	See 'specific message contents'
8	MS → SS	HANDOVER ACCESS	Repeated on every burst of the uplink main DCCH until reception of PHYSICAL INFORMATION
9	SS → MS	PHYSICAL INFORMATION	
10	MS → SS	L2-SABM	Sent without information field
11	MS → SS	L2-UA	
12	MS → SS	HANDOVER COMPLETE	On the new DCCH. This message shall be ready to be transmitted before "x" ms after the completion of step 1. See specific message contents. RR cause = "Normal event". Handover reference must be the same as in HANDOVER COMMAND
13		{ Measurement reporting }	Sent on the SACCH associated with the new DCCH
14	SS → MS	CHANNEL RELEASE	10 seconds after sending the HANDOVER COMMAND

Specific Message Contents

IMMEDIATE ASSIGNMENT

K=1: SDCCH/8 FH

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	Chosen arbitrarily, but not zero
- Training Sequence Code	Same as the BCC of the cell A
- Hopping channel	RF hopping channel
- MAIO	Chosen arbitrarily from 0 to (N-1). See note 1
- HSN	Chosen arbitrarily from the set (1 to 63)
Mobile Allocation	Same as the CA of the cell A

NOTE 1: N is the number of frequencies in the Mobile Allocation IE.

K=2: SDCCH/4

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/4
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC of the cell A
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier of the cell A
Mobile Allocation	Not included (length = 0)

HANDOVER COMMAND

K=1: SDCCH/4

Information Element	Value/Remarks
Cell Description - BCCH Carrier Number	For GSM 450: 261 For GSM 480: 308 For GSM 900, 450/900 and 480/900: 10 For DCS 1 800, 450/1800, 480/1800 and for 900/1800: 520
Channel Description - Channel Type and TDMA offset TDMA offset - Timeslot Number - Training Sequence Code - Hopping channel - ARFCN	SDCCH/4 Chosen arbitrarily Zero Same as the BCC of the cell B Single RF channel Same as the BCCH carrier of the cell B
Handover reference	Chosen arbitrarily
Synchronisation Indication	IE not included or set to "non-synchronised"

K=2: TCH/F

Information Element	Value/Remarks
Cell Description - BCCH Carrier Number	For GSM 450: 261 For GSM 480: 308 For GSM 900, 450/900 and 480/900: 10 For DCS 1 800, 450/1800, 480/1800 and for 900/1800: 520
Channel Description - Channel Type and TDMA offset - Timeslot Number - Training Sequence Code - Hopping channel - ARFCN	TCH/F Chosen arbitrarily, but not zero Same as the BCC of the cell B Single RF channel Same as the BCCH carrier of the cell B
Handover reference	Chosen arbitrarily
Synchronisation Indication	IE not included or set to "non-synchronised"

Step 12:

x = 500 ms.

### 41.4.3.3 PDCH Assignment Command

#### 41.4.3.3.1 Successful case

##### 41.4.3.3.1.1 Conformance requirements

When in dedicated mode, the network may change the resources of a mobile station that supports the «GPRS» option through the Packet Data Channel procedure.

#### References

GSM 04.08, clause 3.4.19

##### 41.4.3.3.1.2 Test purpose

To verify that while on a dedicated channel the GPRS mobile correctly obeys the PDCH ASSIGNMENT COMMAND message.

41.4.3.3.1.3 Method of test

Initial Conditions

System Simulator:

1 cell. GPRS supported using BCCH

Mobile Station:

The MS is GMM-DEREGISTERED and in “packet idle” mode.

Related PICS/PIXIT Statement(s)

As default plus

- MAC Extended Fixed Allocation supported (Y/N).

Foreseen Final State of the MS

GMM-REGISTERED and in “packet idle” mode.

Test Procedure

The MS is triggered to perform a GPRS attach procedure and shall send CHANNEL REQUEST message. The SS then assigns a DCCH to the MS. On this channel, the SS sends a PDCH ASSIGNMENT COMMAND message assigning a downlink TBF to the MS. The mobile shall move to the TBF and send at least one LLC frame. The SS checks during 10 seconds that the MS does not transmit on the old DCCH.

For K = 1, the test is done with the SS sending an IMMEDIATE ASSIGNMENT message describing an SDCCH/4 and a PDCH ASSIGNMENT COMMAND message describing a hopping TBF with dynamic allocation.

For K = 2, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing a TCH/F and a PDCH ASSIGNMENT COMMAND message describing a TBF on the same frequency as the BCCH and with fixed allocation.

For K = 3, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing a hopping SDCCH/8 and a PDCH ASSIGNMENT COMMAND message describing a TBF on a frequency different from the BCCH carrier with extended fixed allocation, if supported, or dynamic allocation, if not.

Maximum Duration of Test

5 minutes

Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	
3	SS → MS	IMMEDIATE ASSIGNMENT	See ‘specific message contents’
4	MS → SS	RR INITIALISATION REQUEST	
5		{ Classmark and measurement }	Macro
6	SS → MS	PDCH ASSIGNMENT COMMAND	See ‘specific message contents’
7	MS → SS	LLC frame	Sent on the assigned TBF.
8	SS		The SS checks during 10 seconds that the MS does not transmit on the old channel

Specific Message Contents

IMMEDIATE ASSIGNMENT

K=1: SDCCH/4:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/4
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

K=2: TCH/F:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	TCH/F + ACCHs
- Timeslot Number	Chosen arbitrarily, but not zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

K=3: SDCCH/8 FH:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	Chosen arbitrarily, but not zero
- Training Sequence Code	Same as the BCC
- Hopping channel	RF hopping channel
- MAIO	Chosen arbitrarily from 0 to (N-1). See note 1
- HSN	Chosen arbitrarily from the set (1 to 63)
Mobile Allocation	Same as the CA

NOTE 1: N is the number of frequencies in the Mobile Allocation IE.

PDCH ASSIGNMENT COMMAND

K=1: hopping TBF, MAC Dynamic Allocation

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	TCH/F + ACCHs
- Timeslot Number	Chosen arbitrarily
- Training Sequence Code	Same as the BCC
- Hopping channel	RF hopping channel
- MAIO	Chosen arbitrarily from 0 to (N-1). See note 1
- HSN	Chosen arbitrarily from the set (1 to 63)
RR Packet Downlink Assignment	
- MAC_MODE	00 (Dynamic allocation)

K=2: TBF on the BCCH carrier, MAC Fixed Allocation

Information Element	Value/Remarks
Channel Description - Channel Type and TDMA offset - Timeslot Number - Training Sequence Code - Hopping channel - ARFCN	TCH/F + ACCHs Chosen arbitrarily. Same as the BCC Single RF channel Same as BCCH carrier
RR Packet Downlink Assignment - MAC_MODE	01 (Fixed allocation)

K=3: TBF on a frequency different from the BCCH carrier

Information Element	Value/Remarks
Channel Description - Channel Type and TDMA offset - Timeslot Number - Training Sequence Code - Hopping channel - ARFCN	TCH/F + ACCHs Chosen arbitrarily Same as the BCC Single RF channel For GSM 450: 267 For GSM 480: 315 For GSM 900: 30 For DCS 1 800: 650
RR Packet Downlink Assignment - MAC_MODE	10 (Extended Fixed Allocation), if supported 00 (Dynamic Allocation), otherwise

NOTE 1: N is the number of frequencies in the Mobile Allocation IE.

41.4.3.3.2 Failure / T3132 expires

41.4.3.3.2.1 Conformance requirements

1. If the mobile does not successfully receive RLC/MAC blocks within T3132 seconds after PDCH ASSIGNMENT COMMAND message, it shall reactivate the old channels, reconnect the TCHs, if any, and trigger the establishment of the main signalling link.
2. The mobile shall send an ASSIGNMENT FAILURE message with cause “protocol error unspecified” on the DCCH and resumes normal operation as if no assignment attempt had occurred.

References

GSM 04.08, clause 3.4.19

41.4.3.3.2.2 Test purpose

1. To verify that the GPRS mobile returns to the old channels if the SS does not send data or control blocks in the PDCH ASSIGNMENT procedure.
2. To verify that the mobile correctly formats and sends an ASSIGNMENT FAILURE message.

41.4.3.3.2.3 Method of test

Initial Conditions

System Simulator:

1 cell. GPRS supported using BCCH

Mobile Station:

The MS is GMM-DEREGISTERED and in “packet idle” mode.

Related PICS/PIXT Statement(s)

As default.

Foreseen Final State of the MS

GMM-DEREGISTERED and in “packet idle” mode.

Test Procedure

The MS is triggered to perform a GPRS attach procedure and shall send a CHANNEL REQUEST message. The SS then assigns an SDCCH/8 to the MS. On this channel, the SS sends a PDCH ASSIGNMENT COMMAND message assigning a downlink TBF to the MS. The MS shall stop sending measurement reports on the old SACCH, go to the TBF and wait. The SS checks that the MS does not transmit anything on the SDCCH before establishing it again with a layer 2 SABM frame, which shall not be sent before T3132 seconds after the PDCH ASSIGNMENT COMMAND message was sent. Once the old dedicated channel is re-established, the MS shall send an ASSIGNMENT FAILURE message with cause “protocol error unspecified”. The MS shall continue sending MEASUREMENT REPORT messages. The SS finally clears the SDCCH with a CHANNEL RELEASE message 10 seconds after sending the PDCH ASSIGNMENT COMMAND.

Maximum Duration of Test

5 minutes

Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	
3	SS → MS	IMMEDIATE ASSIGNMENT	Channel Type = SDCCH/8
4	MS → SS	RR INITIALISATION REQUEST	
5		{ Classmark and measurement }	Macro
6	SS → MS	PDCH ASSIGNMENT COMMAND	The SS does not transmit any RLC/MAC blocks to the mobile on the assigned TBF.
7	MS → SS	L2-SABM	Sent on the old DCCH. The SS checks that it is not sent before T3132 seconds after the PDCH ASSIGNMENT COMMAND message
8	SS → MS	L2-UA	
9	MS → SS	ASSIGNMENT FAILURE	Cause = “Protocol error unspecified”
10		{ Measurement reporting }	Macro. The SS verifies that the MS sends these messages on the SACCH associated with the SDCCH assigned in step 3
11	SS → MS	CHANNEL RELEASE	10 seconds after sending the PDCH ASSIGNMENT COMMAND

Specific Message Contents

None.

#### 41.4.3.4 Cell change order

##### 41.4.3.4.1 Successful case / Normal procedure

###### 41.4.3.4.1.1 Conformance requirements

When in dedicated mode, the network may modify the channels allocated to a mobile station that supports the «GPRS» option through the RR-Network Commanded Cell Change Order. The mobile station shall obey the RR-Cell Change Order irrespective of whether or not the mobile has any knowledge of the relative synchronisation of the target cell to the serving cell.

#### References

GSM 04.08, clause 3.4.20

###### 41.4.3.4.1.2 Test purpose

1. To verify that, while on a dedicated channel, the GPRS mobile correctly obeys the RR-CELL CHANGE ORDER message.
2. To verify that the GPRS mobile successfully establish a TBF in the target cell.
3. To verify that the GPRS mobile obeys the RR-CELL CHANGE ORDER message both when the target BCCH ARFCN is contained in the SI messages of the serving cell and when it is excluded.

###### 41.4.3.4.1.3 Method of test

#### Initial Conditions

System Simulator:

2 cells: Cell A supports GPRS using the BCCH

As defaults except:



<b>CELL A</b>		
<b>(P)SI</b>	<b>Information Element</b>	<b>Value/Remarks</b>
	BCCH ARFCN	For GSM 450, 450/900 and 450/1800: 263 For GSM 480, 480/900 and 480/1800: 310 For GSM 900 and 900/1800: 20 For DCS 1 800: 590
SI 2	Neighbour Cell Description - BCCH allocation ARFCN	For GSM 450: channel numbers 261,290 and 293 For GSM 480: channel numbers 308, 337 and 340 For GSM 900, 450/900 and 480/900: channel numbers 10, 110 and 120 For DCS 1 800, 450/1800, 480/1800 and 900/1800: channel numbers 520, 810 and 870
SI 2ter	Neighbour Cell Description 2 - BCCH allocation ARFCN	For GSM 450 cells: channel numbers 520, 810 and 870 For GSM 480 cells: channel numbers 520, 810 and 870 For GSM 900 cells: channel numbers 520, 810 and 870 For DCS 1 800 cells: channel numbers 10, 110 and 120
SI 3	Control Channel Description - CCCH_CONF	For execution counter K = 1 and 2, 001 (1 basic physical channel used for CCCH, combined with SDCCHs) For execution counter K = 3, 000 (1 basic physical channel used for CCCH, not combined with SDCCHs)

CELL B		
(P)SI	Information Element	Value/Remarks
	BCCH ARFCN	For GSM 450: For execution counter K = 1 and 3, 284 For execution counter K = 2, 261 For GSM 480: For execution counter K = 1 and 3, 331 For execution counter K = 2, 308 For GSM 900, 450/900 and 480/900: For execution counter K = 1 and 3, 90 For execution counter K = 2, 10 For DCS 1 800, 450/1800, 480/1800 and 900/1800: For execution counter K = 1 and 3, 700 For execution counter K = 2, 520
SI 1	Cell Channel Description - Cell allocation ARFCN	For GSM 450: channel numbers 261, 282, 284 and 287 For GSM 480: channel numbers 308, 329, 331 and 334 For GSM 900, 450/900 and 480/900: channel numbers 10, 80, 90 and 100 For DCS 1 800, 450/1800, 480/1800 and 900/1800: channel numbers 520, 600, 700 and 780
SI 13	SI 13 Rest Octets - { L H } - RA_CODE - { 0 1 }	H 00000101 For execution counter K = 1: 0 (PBCCH not present) For execution counter K = 2 and 3: 1 (PBCCH present)
	- PBCCH Description - TN	(Only for PBCCH present) For execution counter K = 2: 4 For execution counter K = 3: 0
	- TSC - { 0 1 } - ARFCN	3 For execution counter K = 2: 0 (Single RF channel) For GSM 450: 284 For GSM 480: 331 For GSM 900: 90 For DCS 1 800: 700
	- { 0 1 } - MAIO - HSN - Length of MA - Mobile Allocation	For execution counter K = 3: 1 (RF hopping channel) Chosen arbitrarily from 0 to (N-1). See note 1 Chosen arbitrarily from the set (1 to 63) 3 (Number of frequencies = 4) Same as CA

NOTE 1: N is the number of frequencies in the Mobile Allocation IE.

Mobile Station:

The MS is GMM-DEREGISTERED, in “packet idle” mode and camped on cell A.

Related PICS/PIXIT Statement(s)

As default.

Foreseen Final State of the MS

GMM-REGISTERED, in “packet idle” mode and camped on cell B.

## Test Procedure

The MS is triggered to perform a GPRS attach procedure. The MS shall send a CHANNEL REQUEST message. The SS then assigns a DCCH to the MS and waits 10 seconds to allow the MS to decode SI 5 messages and send (on the DCCH) a CLASSMARK CHANGE message containing an MS Classmark 2 and 3 and (on the SACCH) measurement reports on related to the neighbouring cells. On this channel, the SS sends an RR-CELL CHANGE ORDER message describing the BCCH carrier of a neighbouring cell. The MS shall go to this cell and initiate an access procedure by sending a CHANNEL REQUEST message or a PACKET CHANNEL REQUEST message in a valid TDMA frame belonging to the RACH or PRACH of the new cell. The SS sends an IMMEDIATE ASSIGNMENT message or a PACKET UPLINK ASSIGNMENT message describing an uplink TBF. The MS shall move to the TBF and send at least one LLC frame.

For K = 1, the test is done with the SS sending an IMMEDIATE ASSIGNMENT message on cell A describing an SDCCH/4 and an IMMEDIATE ASSIGNMENT message on cell B describing a TBF on the BCCH carrier.

For K = 2, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message on cell A describing an SDCCH/8 on a different frequency from the BCCH carrier and a PACKET UPLINK ASSIGNMENT message on cell B describing a hopping TBF.

For K = 3, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message on cell A describing a TCH/F and a PACKET DOWNLINK ASSIGNMENT message on cell B describing a TBF on a different frequency from the BCCH carrier.

## Maximum Duration of Test

5 minutes

## Expected Sequence

This sequence is performed for execution counter K = 1 to 3.

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access"
3	SS → MS	IMMEDIATE ASSIGNMENT	See 'specific message contents'
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		The SS waits 10 seconds
7	SS → MS	RR-CELL CHANGE ORDER	See 'specific message contents'
8a	MS → SS	CHANNEL REQUEST	Only for K = 1 On cell B. Establishment Cause = "One phase packet access"
9a	SS → MS	IMMEDIATE ASSIGNMENT	See 'specific message contents'
8b	MS → SS	PACKET CHANNEL REQUEST	Only for K = 2 and 3 On cell B. Establishment Cause = "One phase packet access"
9b	SS → MS	PACKET DOWNLINK ASSIGNMENT	See 'specific message contents'
10	MS → SS	LLC frame	Sent on the assigned TBF.

## Specific Message Contents

### IMMEDIATE ASSIGNMENT (Step 3)

K=1: SDCCH/4:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/4
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

K=2: SDCCH/8, not on the BCCH carrier:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	Chosen arbitrarily
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	For GSM 450, 450/900 and 450/1800: 267 For GSM 480, 480/900 and 480/1800: 315 For GSM 900 and 900/1800: 30 For DCS 1 800: 650
Mobile Allocation	Not included (length = 0)

K=3: TCH/F:

Information Element	Value/Remarks
Channel Description	
- Channel Type and TDMA offset	TCH/F
- Timeslot Number	Chosen arbitrarily
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

#### RR-CELL CHANGE ORDER

K=1, 3: Non-synchronised case:

Information Element	Value/Remarks
Cell description	
- BCCH ARFCN	For GSM 450: 284 For GSM 480: 331 For GSM 900, 450/900 and 480/900: 90 For DCS 1 800, 450/1800, 480/1800 and 900/1800: 700

K=2: Synchronised case:

Information Element	Value/Remarks
Cell description	
- BCCH ARFCN	For GSM 450: 261 For GSM 480: 308 For GSM 900, 450/900 and 480/900: 10 For DCS 1 800, 450/1800, 480/1800 and 900/1800: 520

IMMEDIATE ASSIGNMENT (Step 9a)

K=1: TBF on the BCCH carrier:

Information Element	Value/Remarks
Packet Response Type and Dedicated Mode or TBF	0
- Downlink	10 (Binary, packet immediate assignment or packet downlink assignment procedure using the <i>Packet Channel Description</i> IE)
- PR Type	1 (This message assigns a Temporary Block Flow)
- T/D	
Packet Channel Description	
- Channel type	00001 (Binary: PDCH)
- TN	Chosen arbitrarily, but not zero
- TSC	5
- { 0 1 }	0 (Single RF channel)
-	00
- ARFCN	For GSM 450: 284 For GSM 480: 331 For GSM 900, 450/900 and 480/900: 90 For DCS 1 800, 450/1800, 480/1800 and 900/1800: 700

PACKET DOWNLINK ASSIGNMENT

K=2: TBF FH:

Information Element	Value/Remarks
{ L H <Frequency Parameters> }	H (Frequency Parameters present)
- { 0 1 }	1 (RF hopping channel)
- MA_NUMBER	Chosen arbitrarily
- MAIO	Chosen arbitrarily
- MA_CHANGE_MARK	Chosen arbitrarily

K=3: TBF on a different frequency from the BCCH carrier:

Information Element	Value/Remarks
{ L H <Frequency Parameters> }	H (Frequency Parameters present)
- { 0 1 }	0 (Single RF channel)
- ARFCN	For GSM 450: 282 For GSM 480: 329 For GSM 900, 450/900 and 480/900: 80 For DCS 1 800, 450/1800, 480/1800 and 900/1800: 600
- TSC	5

41.4.3.4.2 Successful case / DCCH on the target cell

41.4.3.4.2.1 Conformance requirements

When in dedicated mode, the network may modify the channels allocated to a mobile station that supports the «GPRS» option through the RR-Network Commanded Cell Change Order.

References

GSM 04.08, clause 3.4.20

41.4.3.4.2.2 Test purpose

1. To verify that while on a dedicated channel, the GPRS mobile correctly obeys the RR-CELL CHANGE ORDER message.

2. To verify that the GPRS mobile correctly establish a DCCH in the target cell after the access procedure.
3. To verify that the GPRS mobile successfully establish a TBF in the target cell from the DCCH.

41.4.3.4.2.3 Method of test

Initial Conditions

System Simulator:

2 cells: Cells A and B. Both cells support GPRS using the BCCH.

As defaults except:

CELL A		
(P)SI	Information Element	Value/Remarks
	BCCH ARFCN	For GSM 450: 263 For GSM 480: 310 For GSM 900, 450/900 and 480/900: 20 For DCS 1 800, 450/1800, 480/1800 and 900/1800: 590
SI 2	Neighbour Cell Description - BCCH allocation ARFCN	For GSM 450, 450/900 and 450/1800: channel numbers 261, 290 and 293 For GSM 480, 480/900 and 480/1800: channel numbers 308, 337 and 340 For GSM 900 and 900/1800: channel numbers 10, 110 and 120 For DCS 1 800: channel numbers 520, 810 and 870
SI 2ter	Neighbour Cell Description 2 - BCCH allocation ARFCN	For GSM 450 cells: channel numbers 520, 810 and 870 For GSM 480 cells: channel numbers 520, 810 and 870

CELL B		
(P)SI	Information Element	Value/Remarks
	BCCH ARFCN	For GSM 450, 450/900 and 450/1800: 284 For GSM 480, 480/900 and 480/1800: 331 For GSM 900 and 900/1800: 90 For DCS 1 800: 700
SI 1	Cell Channel Description - Cell allocation ARFCN	For GSM 450, 450/900 and 450/1800: channel numbers 261, 282, 284 and 287 For GSM 480, 480/900 and 480/1800: channel numbers 308, 329, 331 and 334 For GSM 900 and 900/1800: channel numbers 10, 80, 90 and 100 For DCS 1 800: channel numbers 520, 600, 700 and 780

NOTE 1: N is the number of frequencies in the Mobile Allocation IE.

Mobile Station:

The MS is GMM-DEREGISTERED, in “packet idle” mode and camped on cell A.

## Related PICS/PIXIT Statement(s)

As default.

## Foreseen Final State of the MS

GMM-REGISTERED, in “packet idle” mode and camped on cell B.

## Test Procedure

The MS is triggered to perform a GPRS attach procedure. The MS shall send a CHANNEL REQUEST message. The SS then assigns an SDCCH/8 to the MS and waits 10 seconds to allow the MS to decode SI 5 messages and send (on the assigned SDCCH/8) a CLASSMARK CHANGE message containing an MS Classmark 2 and 3 and (on the SACCH associated with the assigned SDCCH/8) measurement reports related to the neighbouring cells. The SS sends an RR-CELL CHANGE ORDER message on the SDCCH/8 describing the BCCH carrier of a neighbouring cell. The MS shall go to this cell and initiate an access procedure sending a CHANNEL REQUEST message in a valid TDMA frame belonging to the RACH of the new cell. The SS sends an IMMEDIATE ASSIGNMENT message describing an SDCCH/4. The MS shall connect this channel and send on it a CLASSMARK CHANGE message containing MS Classmark 2 and 3 and the MS shall send measurement reports on the associated SACCH. The SS then sends a PDCH ASSIGNMENT COMMAND message on the SDCCH/4 describing an uplink TBF. The MS shall move to this TBF and send at least one LLC frame on the assigned TBF.

## Maximum Duration of Test

5 minutes

## Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = “One phase packet access”
3	SS → MS	IMMEDIATE ASSIGNMENT	See ‘specific message contents’
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		The SS waits 10 seconds
7	SS → MS	RR-CELL CHANGE ORDER	See ‘specific message contents’
8	MS → SS	CHANNEL REQUEST	On cell B. Establishment Cause = “One phase packet access”
9	SS → MS	IMMEDIATE ASSIGNMENT	See ‘specific message contents’
10	MS → SS	RR INITIALISATION REQUEST	Sent on the new DCCH
11		{ Classmark and measurement }	Macro. Sent on the SACCH associated with the new DCCH
12	SS → MS	PDCH ASSIGNMENT COMMAND	See ‘specific message contents’
13	MS → SS	LLC frame	Sent on the assigned TBF.

Specific Message Contents

IMMEDIATE ASSIGNMENT (Step 3)

Information Element	Value/Remarks
Packet Response Type and Dedicated mode or TBF -T/D	Dedicated mode
Channel Description - Channel Type and TDMA offset TDMA offset - Timeslot Number - Training Sequence Code - Hopping channel - ARFCN	SDCCH/8 Chosen arbitrarily Zero Same as the BCC Single RF channel For GSM 450: 267 For GSM 480: 315 For GSM 900, 450/900 and 480/900: 30 For DCS 1 800, 450/1800, 480/1800 and 900/1800: 650
Mobile Allocation	Not included (length = 0)

RR-CELL CHANGE ORDER

Information Element	Value/Remarks
Cell description - BCCH ARFCN	For GSM 450, 450/900 and 450/1800: 284 For GSM 480, 480/900 and 480/1800: 331 For GSM 900 and 900/1800: 90 For DCS 1 800: 700

IMMEDIATE ASSIGNMENT (Step 9)

Information Element	Value/Remarks
Packet Response Type and Dedicated mode or TBF -T/D	Dedicated mode
Channel Description - Channel Type and TDMA offset TDMA offset - Timeslot Number - Training Sequence Code - Hopping channel - ARFCN	SDCCH/4 Chosen arbitrarily Zero Same as the BCC Single RF channel For GSM 450, 450/900 and 450/1800: 284 For GSM 480, 480/900 and 480/1800: 331 For GSM 900 and 900/1800: 90 For DCS 1 800: 700
Mobile Allocation	Not included (length = 0)

PDCH ASSIGNMENT COMMAND

Information Element	Value/Remarks
Channel Description - Channel Type and TDMA offset - Timeslot Number - Training Sequence Code - Hopping channel - ARFCN	TCH/F + ACCHs Chosen arbitrarily Same as the BCC Single RF channel For GSM 450, 450/900 and 450/1800: 284 For GSm 480, 480/900 and 480/1800: 331 For GSM 900 and 900/1800: 90 For DCS 1 800: 700



#### 41.4.3.4.3 Failure / Immediate Assignment Reject on CCCH of the target cell

##### 41.4.3.4.3.1 Conformance requirements

1. On receipt of an IMMEDIATE ASSIGNMENT REJECT message corresponding to one of its 3 last CHANNEL REQUEST messages, the mobile station, stops sending CHANNEL REQUEST messages.
2. If an IMMEDIATE ASSIGNMENT REJECT message is received from the new cell then the mobile station shall reactivate the old channels, reconnect the TCHs if any and trigger the establishment of the main signalling link. It then sends a HANDOVER FAILURE message on the main signalling link and resumes normal operation as if no handover attempt had occurred.

##### References

GSM 04.08, clauses 3.3.1.1.3.2 and 3.4.20.3

##### 41.4.3.4.3.2 Test purpose

1. To verify that the GPRS mobile stops transmitting CHANNEL REQUEST messages when receiving in an access procedure an IMMEDIATE ASSIGNMENT REJECT message within an RR-Network Commanded Cell Change Order procedure.
2. To verify that the GPRS mobile re-establishes the old DCCH.
3. To verify that the GPRS mobile correctly formats the HANDOVER FAILURE message and sends it on the old DCCH.

##### 41.4.3.4.3.3 Method of test

##### Initial Conditions

System Simulator:

2 cells: cell A and cell B. Both cells support GPRS on the BCCH.

Mobile Station:

The MS is GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

##### Related PICS/PIXIT Statement(s)

As default.

##### Foreseen Final State of the MS

GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

##### Test Procedure

The MS is triggered to perform a GPRS attach procedure. The MS shall send a CHANNEL REQUEST message. The SS then assigns an SDCCH/4 to the MS and waits 10 seconds to allow the MS to decode SI 5 messages and send (on the assigned SDCCH/4) a CLASSMARK CHANGE message containing an MS Classmark 2 and 3, and (on the SACCH associated with the assigned SDCCH/4) measurement reports related to the neighbouring cells. On this channel, the SS sends an RR-CELL CHANGE ORDER message describing the BCCH carrier of a neighbouring cell. The MS shall go to this cell and initiate an access procedure sending a CHANNEL REQUEST message in a valid TDMA frame belonging to the RACH of the new cell. The SS sends an IMMEDIATE ASSIGNMENT REJECT message. The MS shall re-establish the old SDCCH/4 and send a HANDOVER FAILURE message on it and continue sending MEASUREMENT REPORT messages on the SACCH associated with the old SDCCH/4. The SS finally clears the SDCCH/4 with a CHANNEL RELEASE message 10 seconds after sending the RR-CELL CHANGE ORDER.

Maximum Duration of Test

5 minutes

Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access"
3	SS → MS	IMMEDIATE ASSIGNMENT	Channel Type = SDCCH/4
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		The SS waits 10 seconds
7	SS → MS	RR-CELL CHANGE ORDER	
8	MS → SS	CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
9	SS → MS	IMMEDIATE ASSIGNMENT REJECT	
10	MS → SS	L2-SABM	Sent on the old DCCH
11	SS → MS	L2-UA	
12	MS → SS	HANDOVER FAILURE	Sent on the old DCCH
13		{ Measurement reporting }	Macro. Sent on the SACCH associated with the old DCCH
14	SS → MS	CHANNEL RELEASE	10 seconds after sending the RR-CELL CHANGE ORDER

Specific Message Contents

None

#### 41.4.3.4.4 Failure / Packet Access Reject on PCCCH of the target cell

##### 41.4.3.4.4.1 Conformance requirements

1. On receipt of a PACKET ACCESS REJECT message the mobile station shall stop sending PACKET CHANNEL REQUEST messages.
2. If a PACKET ACCESS REJECT message is received from the new cell then the mobile station shall reactivate the old channels, reconnect the TCHs if any and trigger the establishment of the main signalling link. It then sends a HANDOVER FAILURE message on the main signalling link and resumes normal operation as if no handover attempt had occurred.

References

1. GSM 04.60, clause 7.1.2.2.4
2. GSM 04.08, clause 3.4.20.3 + CR04.08A452

##### 41.4.3.4.4.2 Test purpose

1. To verify that the GPRS mobile stops transmitting PACKET CHANNEL REQUEST messages when receiving in an access procedure a PACKET ACCESS REJECT message after a successful RR-Network Commanded Cell Change Order procedure.
2. To verify that the GPRS mobile re-establishes the old DCCH.
3. To verify that the GPRS mobile correctly formats the HANDOVER FAILURE message and sends it on the old DCCH.

41.4.3.4.4.3 Method of test

Initial Conditions

System Simulator:

2 cells: cell A and cell B. Cell A supports GPRS using the BCCH; cell B supports GPRS using the PBCCH.

Mobile Station:

The MS is GMM-DEREGISTERED, in “packet idle” mode and camped on cell A.

Related PICS/PIXIT Statement(s)

As default.

Foreseen Final State of the MS

GMM-DEREGISTERED, in “packet idle” mode and camped on cell A.

Test Procedure

The MS is triggered to perform a GPRS attach procedure. The MS shall send a CHANNEL REQUEST message. The SS then assigns an SDCCH/4 to the MS and waits 10 seconds to allow the MS to decode SI 5 messages and send (on the assigned SDCCH/4) a CLASSMARK CHANGE message containing an MS Classmark 2 and 3, and (on the SACCH associated with the assigned SDCCH/4) measurement reports related to the neighbouring cells. On this channel, the SS sends an RR-CELL CHANGE ORDER message describing the BCCH carrier of a neighbouring cell. The MS shall go to this cell and initiate a packet access procedure sending a PACKET CHANNEL REQUEST message in a valid TDMA frame belonging to the PRACH of the new cell. The SS sends a PACKET ACCESS REJECT message. The MS shall re-establish the old SDCCH/4 and send a HANDOVER FAILURE message on it and continue sending MEASUREMENT REPORT messages on the SACCH associated with the old SDCCH/4. The SS finally clears the SDCCH/4 with a CHANNEL RELEASE message 10 seconds after sending the RR-CELL CHANGE ORDER.

Maximum Duration of Test

5 minutes

Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = “One phase packet access” Channel Type = SDCCH/4
3	SS → MS	IMMEDIATE ASSIGNMENT	
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		The SS waits 10 seconds
7	SS → MS	RR-CELL CHANGE ORDER	On cell B. Establishment Cause = “One phase packet access”
8	MS → SS	PACKET CHANNEL REQUEST	
9	SS → MS	PACKET ACCESS REJECT	Sent on the old DCCH
10	MS → SS	L2-SABM	
11	SS → MS	L2-UA	Sent on the old DCCH
12	MS → SS	HANDOVER FAILURE	
13		{ Measurement reporting }	Macro. Sent on the SACCH associated with the old DCCH
14	SS → MS	CHANNEL RELEASE	10 seconds after sending the RR-CELL CHANGE ORDER

## Specific Message Contents

None

## 41.4.3.4.5 Failure / T3134 expiry

## 41.4.3.4.5.1 Conformance requirements

If timer T3134 times out before a response to the (PACKET) CHANNEL REQUEST message has been received from the new cell, then the mobile station shall reactivate the old channels, reconnect the TCHs if any and trigger the establishment of the main signalling link. It then sends a HANDOVER FAILURE message on the main signalling link and resumes normal operation as if no handover attempt had occurred.

## References

GSM 04.08, clause 3.4.20.3 + CR04.08A452

## 41.4.3.4.5.2 Test purpose

1. To verify that the GPRS mobile waits for T3134 seconds for an answer to the (PACKET) CHANNEL REQUEST after a successful RR-Network Commanded Cell Change Order procedure.
2. To verify that the GPRS mobile re-establishes the old DCCH.
3. To verify that the GPRS mobile correctly formats the HANDOVER FAILURE message and sends it on the old DCCH.

## 41.4.3.4.5.3 Method of test

## Initial Conditions

System Simulator:

2 cells: cell A and cell B. Cell A supports GPRS on the BCCH.

MAX\_RETRANS is set to 1.

Mobile Station:

The MS is GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

## Related PICS/PIXIT Statement(s)

As default.

## Foreseen Final State of the MS

GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

## Test Procedure

The MS is triggered to perform a GPRS attach procedure. The MS shall send a CHANNEL REQUEST message. The SS then assigns an SDCCH/8 to the MS and waits 10 seconds to allow the MS to decode SI 5 messages and send (on the assigned SDCCH/8) a CLASSMARK CHANGE message containing an MS Classmark 2 and 3, and (on the SACCH associated with the assigned SDCCH/8) measurement reports related to the neighbouring cells. On this channel, the SS sends an RR-CELL CHANGE ORDER message describing the BCCH carrier of a neighbouring cell. The MS shall go to this cell and initiate a (packet) access procedure sending a (PACKET) CHANNEL REQUEST message in a valid TDMA frame belonging to the (P)RACH of the new cell. The MS shall retransmit the (PACKET) CHANNEL REQUEST message. The SS does not answer these (PACKET) CHANNEL REQUEST messages. The SS checks that the mobile reconnects the old SDCCH/8 and sends a HANDOVER FAILURE message, but not before T3134 seconds after the first (PACKET)

CHANNEL REQUEST message. The MS shall send MEASUREMENT REPORT messages on the SACCH associated with the old SDCCH/8. The SS finally clears the SDCCH/8 with a CHANNEL RELEASE message 10 seconds after sending the RR-CELL CHANGE ORDER.

For K = 1, the test is done with cell B supporting GRPS using the BCCH.

For K = 2, the test is repeated with cell B supporting GRPS using the PBCCH.

Maximum Duration of Test

5 minutes

Expected Sequence

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

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access"
3	SS → MS	IMMEDIATE ASSIGNMENT	Channel Type = SDCCH/8
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		The SS waits 10 seconds
7	SS → MS	RR-CELL CHANGE ORDER	
8a	MS → SS	CHANNEL REQUEST	Only for K = 1 On cell B. Establishment Cause = "One phase packet access"
9a	MS → SS	CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
8b	MS → SS	PACKET CHANNEL REQUEST	Only for K = 2 On cell B. Establishment Cause = "One phase packet access"
9b	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
10	MS → SS	L2-SABM	Sent on the old DCCH
11	SS → MS	L2-UA	
12	MS → SS	HANDOVER FAILURE	Sent on the old DCCH not before T3134 seconds after the first (PACKET) CHANNEL REQUEST message
13		{ Measurement reporting }	Macro. Sent on the SACCH associated with the old DCCH
14	SS → MS	CHANNEL RELEASE	10 seconds after sending the RR-CELL CHANGE ORDER

Specific Message Contents

None

41.4.3.4.6 Contention resolution failure / GPRS supported using BCCH

41.4.3.4.6.1 Conformance requirements

1. If the contention resolution procedure fails on the new cell then the mobile station shall reactivate the old channels, reconnect the TCHs if any and trigger the establishment of the main signalling link. It then sends a HANDOVER FAILURE message on the main signalling link and resumes normal operation as if no handover attempt had occurred.
2. If an information field mismatch occurs in the first contention resolution procedure on the target cell, the allocated channel is released and the immediate assignment procedure shall be repeated. If an information field mismatch

occurs in the repeated contention resolution procedure, the MS shall release the allocated channel and return to the old cell.

## References

GSM 04.08, clauses 3.3.1.1.5 and 3.4.20

### 41.4.3.4.6.2 Test purpose

1. To verify that the MS stops transmitting on the allocated channel in the target cell and restarts the immediate assignment procedure after the first identity mismatch in the contention resolution procedure.
2. To verify that the MS stops transmitting on the allocated channel in the target after the second identity mismatch in the contention resolution procedure.
3. To verify that the GPRS mobile re-establishes the old DCCH.
4. To verify that the GPRS mobile correctly formats the HANDOVER FAILURE message and sends it on the old DCCH.

### 41.4.3.4.6.3 Method of test

#### Initial Conditions

System Simulator:

2 cells: cell A and cell B. Both cells support GPRS on the BCCH.

Mobile Station:

The MS is GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

#### Related PICS/PIXIT Statement(s)

As default.

#### Foreseen Final State of the MS

GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

#### Test Procedure

The MS is triggered to perform a GPRS attach procedure. The MS shall send a CHANNEL REQUEST message. The SS then assigns an SDCCH/4 to the MS and waits 10 seconds to allow the MS to decode SI 5 messages and send (on the assigned SDCCH/4) a CLASSMARK CHANGE message containing an MS Classmark 2 and 3, and (on the SACCH associated with the assigned SDCCH/4) measurement reports related to the neighbouring cells. On this channel, the SS sends an RR-CELL CHANGE ORDER message describing the BCCH carrier of a neighbouring cell. The MS shall go to this cell and initiate an access procedure sending a CHANNEL REQUEST message in a valid TDMA frame belonging to the RACH of the new cell. The SS assigns an SDCCH/4. The MS shall go to the correct channel and send an RR INITIALISATION REQUEST message containing its identity. The SS answers with a P-TMSI not corresponding to the MS. The MS shall stop transmitting on the assigned SDCCH/4 and restart the access procedure. The SS answers again with a P-TMSI not corresponding to the MS and checks that the mobile re-establishes the SDCCH/4 of cell A and sends a HANDOVER FAILURE message on the old SDCCH/4. The MS shall continue sending MEASUREMENT REPORT messages on SACCH associated with the old SDCCH/4. The SS finally clears the SDCCH/4 with a CHANNEL RELEASE message 20 seconds after sending the RR-CELL CHANGE ORDER.

#### Maximum Duration of Test

5 minutes

## Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access"
3	SS → MS	IMMEDIATE ASSIGNMENT	Channel Type = SDCCH/4
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		The SS waits 10 seconds
7	SS → MS	RR-CELL CHANGE ORDER	
8	MS → SS	CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
9	SS → MS	IMMEDIATE ASSIGNMENT	Channel Type = SDCCH/4
10	MS → SS	RR INITIALISATION REQUEST	Contains P-TMSI of the MS
11	SS → MS	L2-UA	UA frame: contains P-TMSI different to the MS's
12	SS		The SS checks that there is no transmission on the DCCH until the CHANNEL REQUEST is received
13	MS → SS	CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
14	SS → MS	IMMEDIATE ASSIGNMENT	Channel Type = SDCCH/4
15	MS → SS	RR INITIALISATION REQUEST	Contains P-TMSI of the MS
16	SS → MS	L2-UA	UA frame: contains P-TMSI different to the MS's
17	MS → SS	L2-SABM	Sent on the old DCCH
18	SS → MS	L2-UA	
19	MS → SS	HANDOVER FAILURE	Sent on the old DCCH
20		{ Measurement reporting }	Macro. Sent on the SACCH associated with the old DCCH
21	SS → MS	CHANNEL RELEASE	20 seconds after sending the RR-CELL CHANGE ORDER

## Specific Message Contents

None

## 41.4.3.4.7 Contention resolution failure / GPRS supported using PBCCH / Timer or counter expiry

## 41.4.3.4.7.1 Conformance requirements

1. The contention resolution has failed on the mobile station side when the counter N3104 has reached its maximum value, or on expiry of timer. The mobile station shall then reset the counter N3104, stop timer T3166 if not expired, immediately stop transmitting on this TBF and reinitiate the packet access procedure unless it has already been repeated 4 times. In that case, TBF failure has occurred.
2. On the mobile station side if the contention resolution procedure fails on the new cell then the mobile station shall reactivate the old channels, reconnect the TCHs if any and trigger the establishment of the main signalling link. It then sends a HANDOVER FAILURE message on the main signalling link and resumes normal operation as if no handover attempt had occurred. The operational parameters (e.g. ciphering mode) when returning on the old channel are those applied before the RR-CELL CHANGE ORDER message was received.

## References

GSM 04.60, clauses 7.1.2.3 and 7.1.4 + CR 04.60A223

GSM 04.08, clause 3.4.20.3

#### 41.4.3.4.7.2 Test purpose

To verify that during an RR-cell change order procedure, if the SS does not acknowledge any of the uplink RLC/MAC data blocks on the target cell, the mobile repeats the packet access procedure four times and then returns to the DCCH in the old cell.

#### 41.4.3.4.7.3 Method of test

##### Initial Conditions

###### System Simulator:

2 cells, A and B. Cell A supports GPRS using BCCH; cell B supports GPRS using PBCCH.

For multiband test, cell A will operate in lower band and cell B in upper band.

###### Mobile Station:

The MS is GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

##### Related PICS/PIXT Statement(s)

As default.

##### Foreseen Final State of the MS

GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

##### Test Procedure

The MS is triggered to perform a GPRS attach procedure. The MS shall send a CHANNEL REQUEST message. The SS assigns an SDCCH/8. The MS shall go to the correct channel, send an RR INITIALISATION REQUEST message, send (on the assigned SDCCH/8) a CLASSMARK CHANGE containing an MS Classmark 2 and 3 and send (on the SACCH associated with the assigned SDCCH/8) continuously MEASUREMENT REPORT messages. Five seconds after having received the RR INITIALISATION REQUEST message, the SS sends an RR-CELL CHANGE ORDER message, containing the ARFCN of the BCCH carrier of cell B. The MS shall then start the packet access procedure by sending a PACKET CHANNEL REQUEST message on the PRACH of the target cell. The SS assigns an uplink TBF to the mobile with a PACKET UPLINK ASSIGNMENT message. The mobile shall then start to transmit uplink data blocks. The first three blocks, and only them, shall contain the TLLI of the MS. The SS waits and does not send any acknowledgement message. The MS shall stop transmitting on the TBF and restart the packet access procedure with a new PACKET CHANNEL REQUEST message on the target cell. This sequence is performed five times. After the fifth failed attempt, the mobile shall re-establish the old SDCCH by sending a layer 2 SABM frame. Once on the old dedicated channel, the MS shall continue sending MEASUREMENT REPORT messages; the SS checks this during 5 seconds and then clears the SDCCH with a CHANNEL RELEASE message 30 seconds after sending the RR-CELL CHANGE ORDER.

For K = 1, the test is done with:

- BS\_CV\_MAX set to 1
- the SS includes the USF of the mobile in the header of every available block transmitted downlink in the same PDCH that the MS is using

For K = 2, the test is repeated with:

- BS\_CV\_MAX set to 15
- the SS includes the USF of the mobile in the header of blocks transmitted downlink in the same PDCH that the MS is using, at the rate of one per second

##### Maximum Duration of Test

5 minutes



## Expected Sequence

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

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure.
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access"
3	SS → MS	IMMEDIATE ASSIGNMENT	Channel type = 'SDCCH/8'
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		The SS waits 5 seconds
7	SS → MS	RR-CELL CHANGE ORDER	
8	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
9	SS → MS	PACKET UPLINK ASSIGNMENT	See 'Specific Message Contents'
10		{ Uplink data transfer }	Macro. The first three data blocks, and only them, must contain the MS's TLLI. The SS does not send any acknowledgement message
11	MS		The MS stops transmitting on the TBF
12	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
13	SS → MS	PACKET UPLINK ASSIGNMENT	See 'Specific Message Contents'
14		{ Uplink data transfer }	Macro. The first three data blocks, and only them, must contain the MS's TLLI. The SS does not send any acknowledgement message
15	MS		The MS stops transmitting on the TBF
16	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
17	SS → MS	PACKET UPLINK ASSIGNMENT	See 'Specific Message Contents'
18		{ Uplink data transfer }	Macro. The first three data blocks, and only them, must contain the MS's TLLI. The SS does not send any acknowledgement message
19	MS		The MS stops transmitting on the TBF
20	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
21	SS → MS	PACKET UPLINK ASSIGNMENT	See 'Specific Message Contents'
22		{ Uplink data transfer }	Macro. The first three data blocks, and only them, must contain the MS's TLLI. The SS does not send any acknowledgement message
23	MS		The MS stops transmitting on the TBF
24	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
25	SS → MS	PACKET UPLINK ASSIGNMENT	Fixed allocation struct present
26		{ Uplink data transfer }	Macro. The first three data blocks, and only them, must contain the MS's TLLI. The SS does not send any acknowledgement message
27	MS		The MS stops transmitting on the TBF
28	MS → SS	L2-SABM	On the old SDCCH/8 assigned in step 3
29	SS → MS	L2-UA	

30		{ Measurement reporting }	Macro. On the SACCH associated with the SDCCH/8.
31	SS → MS	CHANNEL RELEASE	The SS checks 5 seconds. 30 seconds after sending the RR-CELL CHANGE ORDER

### Specific Message Contents

None

#### 41.4.3.4.8 Contention resolution failure / GPRS supported using PBCCH / TLLI mismatch

##### 41.4.3.4.8.1 Conformance requirements

1. The contention resolution has failed on the mobile station side when the mobile station receives a PACKET UPLINK ASSIGNMENT message with the same TFI but with another TLLI than the one the mobile station has included in the PACKET RESOURCE REQUEST message. The mobile station shall then stop timer T3168 and reinitiate the packet access procedure unless it has already been repeated 4 times. In that case, TBF failure has occurred.
2. On the mobile station side if the contention resolution procedure fails on the new cell then the mobile station shall reactivate the old channels, reconnect the TCHs if any and trigger the establishment of the main signalling link. It then sends a HANOVER FAILURE message on the main signalling link and resumes normal operation as if no handover attempt had occurred. The operational parameters (e.g. ciphering mode) when returning on the old channel are those applied before the RR-CELL CHANGE ORDER message was received.

### References

GSM 04.60, clauses 7.1.3.2.1 and 7.1.4 + CR 04.60A223

GSM 04.08, clause 3.4.20.3

##### 41.4.3.4.8.2 Test purpose

To verify that during an RR-cell change order procedure, if the SS sends

1. a PACKET UPLINK ACK/NACK message in response to the first RLC/MAC data block, in the case of one phase packet access procedure, or
2. a PACKET UPLINK ASSIGNMENT message in response to the PACKET RESOURCE REQUEST message, in the case of two phase packet access procedure,

the mobile repeats the packet access procedure four times and then returns to the DCCH in the old cell.

##### 41.4.3.4.8.3 Method of test

### Initial Conditions

System Simulator:

2 cells, A and B. Cell A supports GPRS using BCCH; Cell B supports GPRS using PBCCH.

For multiband test, cell A will operate in lower band and cell B in upper band.

Mobile Station:

The MS is GMM-DEREGISTERED, in "packet idle" mode and camped on cell A.

### Related PICS/PIXT Statement(s)

As default.

### Foreseen Final State of the MS

GMM-DEREGISTERED, in “packet idle” mode and camped on cell A.

### Test Procedure

The MS is triggered to perform a GPRS attach procedure. The MS shall send a CHANNEL REQUEST message. The SS assigns an SDCCH/4. The MS shall go to the correct channel, send an RR INITIALISATION REQUEST message, send (on the assigned SDCCH/4) a CLASSMARK CHANGE containing an MS Classmark 2 and 3 and send (on the SACCH associated with the assigned SDCCH/4) continuously MEASUREMENT REPORT messages. Five seconds after having received the RR INITIALISATION REQUEST message, the SS sends an RR-CELL CHANGE ORDER message, containing the ARFCN of the BCCH carrier of cell B. The MS shall then start the packet access procedure by sending a PACKET CHANNEL REQUEST message on the PRACH of the target cell. The SS assigns an uplink TBF to the mobile with a PACKET UPLINK ASSIGNMENT message.

The mobile shall send a PACKET RESOURCE REQUEST message containing its TLLI. The SS then answers with a PACKET UPLINK ASSIGNMENT message containing a different TLLI.

The MS shall stop transmitting on the TBF and restart the packet access procedure with a new PACKET CHANNEL REQUEST message on the target cell. This sequence is performed five times. After the fifth failed attempt, the mobile shall re-establish the old SDCCH by sending a layer 2 SABM frame. Once on the old dedicated channel, the MS shall continue sending MEASUREMENT REPORT messages. The SS clears the SDCCH with a CHANNEL RELEASE message 30 seconds after sending the RR-CELL CHANGE ORDER.

### Maximum Duration of Test

5 minutes

## Expected Sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure.
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access"
3	SS → MS	IMMEDIATE ASSIGNMENT	Channel type = 'SDCCH/4'
4	MS → SS	RR INITIALISATION REQUEST	Sent on the correct channel after establishment of the main signalling link
5		{ Classmark and measurement }	Macro
6	SS		The SS waits 5 seconds
7	SS → MS	RR-CELL CHANGE ORDER	
8	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
9	SS → MS	PACKET UPLINK ASSIGNMENT	See 'Specific Message Contents'
10	MS → SS	PACKET RESOURCE REQUEST	It must contain the TLLI
11	SS → MS	PACKET UPLINK ASSIGNMENT	With a different TLLI
12	MS		The MS stops transmitting on the TBF
13	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
14	SS → MS	PACKET UPLINK ASSIGNMENT	See 'Specific Message Contents'
15	MS → SS	PACKET RESOURCE REQUEST	It must contain the TLLI
16	SS → MS	PACKET UPLINK ASSIGNMENT	With a different TLLI
17	MS		The MS stops transmitting on the TBF
18	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
19	SS → MS	PACKET UPLINK ASSIGNMENT	See 'Specific Message Contents'
20	MS → SS	PACKET RESOURCE REQUEST	It must contain the TLLI
21	SS → MS	PACKET UPLINK ASSIGNMENT	With a different TLLI
22	MS		The MS stops transmitting on the TBF
23	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
24	SS → MS	PACKET UPLINK ASSIGNMENT	Single block allocation struct present
25	MS → SS	PACKET RESOURCE REQUEST	It must contain the TLLI
26	SS → MS	PACKET UPLINK ASSIGNMENT	With a different TLLI
27	MS		The MS stops transmitting on the TBF
28	MS → SS	PACKET CHANNEL REQUEST	On cell B. Establishment Cause = "One phase packet access"
29	SS → MS	PACKET UPLINK ASSIGNMENT	See 'Specific Message Contents'
30	MS → SS	PACKET RESOURCE REQUEST	It must contain the TLLI
31	SS → MS	PACKET UPLINK ASSIGNMENT	With a different TLLI
32	MS		The MS stops transmitting on the TBF
33	MS → SS	L2-SABM	On the old SDCCH/8 assigned in step 3
34	SS → MS	L2-UA	
35		{ Measurement reporting }	Macro. Sent on the SACCH associated with the old SDCCH/8
36	SS → MS	CHANNEL RELEASE	30 seconds after sending the RR-CELL CHANGE ORDER

## Specific Message Contents

PACKET UPLINK ASSIGNMENT

None

### 41.4.3.5 Release

#### 41.4.3.5.1 Conformance requirements

1. The mobile shall obey the RR management procedures while on the dedicated channel.
2. Upon receipt of CHANNEL RELEASE message, the mobile shall release the dedicated channels and return to idle mode. If the mobile station is IMSI attached for GPRS services at release of the RR connection, the mobile station shall return to packet idle mode, or if a temporary block flow is established, continue in packet transfer mode.

#### References

GSM 04.08, clauses 3.3.1.3 and 3.4.13

#### 41.4.3.5.2 Test purpose

To verify that the mobile while on a DCCH correctly obeys a CHANNEL RELEASE message, releasing the dedicated channels and returning to packet idle mode.

#### 41.4.3.5.3 Method of test

#### Initial Conditions

System Simulator:

1 cell, GPRS supported using BCCH

Mobile Station:

The MS is GMM-DEREGISTERED and in "packet idle" mode.

#### Related PICS/PIXIT Statement(s)

As default.

#### Foreseen Final State of the MS

GMM-DEREGISTERED and in "packet idle" mode.

#### Test Procedure

The MS is triggered to perform a GPRS attach procedure. The SS assigns a DCCH to the MS and then sends a CHANNEL RELEASE message. The MS shall initiate a Layer 2 disconnection process on the main signalling link and stop the transmission of Layer 2 messages, which is verified by the SS during 5 seconds. The SS then waits 10 seconds to allow cell reselection on the MS side. The MS shall return to ready state, which is verified with a normal paging procedure.

For K = 1, the test is done with the SS sending an IMMEDIATE ASSIGNMENT message describing an SDCCH/4.

For K = 2, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing an SDCCH/8.

For K = 3, the test is repeated with the SS sending an IMMEDIATE ASSIGNMENT message describing a TCH/F.

#### Maximum Duration of Test

5 minutes

Expected Sequence

This sequence is performed for execution counter K = 1 to 3.

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access" See 'specific message contents'
3	SS → MS	IMMEDIATE ASSIGNMENT	
4	MS → SS	RR INITIALISATION REQUEST	
5	SS → MS	CHANNEL RELEASE	
6	MS → SS	L2-DISC	
7	SS → MS	L2-UA	
8	SS		
9	SS		The SS waits 10 seconds to allow the MS to perform cell reselection.
10	SS → MS	PAGING REQUEST Type 1	
11	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access" See 'specific message contents'
12	SS → MS	IMMEDIATE ASSIGNMENT	
13	MS → SS	RR INITIALISATION REQUEST	
14	SS → MS	CHANNEL RELEASE	

Specific Message Contents

IMMEDIATE ASSIGNMENT (step 3)

K=1: SDCCH/4

Information Element	Value/Remarks
Channel description	
- Channel Type and TDMA offset	SDCCH/4
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

K=2: SDCCH/8

Information Element	Value/Remarks
Channel description	
- Channel Type and TDMA offset	SDCCH/8
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

K=3: TCH/F

Information Element	Value/Remarks
Channel description	
- Channel Type and TDMA offset	SDCCH/4
TDMA offset	Chosen arbitrarily
- Timeslot Number	Zero
- Training Sequence Code	Same as the BCC
- Hopping channel	Single RF channel
- ARFCN	Same as the BCCH carrier
Mobile Allocation	Not included (length = 0)

### 41.4.3.6 Radio link failure

#### 41.4.3.6.1 Conformance requirements

1. A radio link failure can be detected by several ways, in particular, when a lower layer failure happens while the mobile station attempts to connect back to the old channels in a channel assignment procedure, handover procedure, PDCH Assignment Command procedure or an RR-Cell Change Order procedure.<sup>3</sup>
2. When a radio link failure is detected by the mobile station,
  - the MS shall perform a local end release on all signalling links unless otherwise specified;
  - deactivate all channels;
  - the RR sublayer of the mobile station shall indicate an RR connection failure to the MM sublayer, unless otherwise specified.

#### References

GSM 04.08, clause 3.4.13.2.

#### 41.4.3.6.2 Test purpose

To verify that the MS releases and deactivates the old channel after a radio link failure during the following procedures:

- Assignment
- Handover
- PDCH Assignment
- RR-Cell Change Order

#### 41.4.3.6.3 Method of test

##### Initial Conditions

System Simulator:

2 cells, A and B with same LAI and RAC. GPRS supported using BCCH in both cells

MAX\_RETRANS is set to 1 in cell B

For multiband test, cell A will operate in upper band and cell B in lower band.

Mobile Station:

<sup>3</sup> After CR to 04.08

The MS is GMM-DEREGISTERED and in “packet idle” mode.

Related PICS/PIXT Statement(s)

As default.

Foreseen Final State of the MS

GMM-DEREGISTERED and in “packet idle” mode.

Test Procedure

The MS is triggered to perform a GPRS attach procedure. The SS then assigns a SDCCH/8. On the dedicated channel, the SS sends

- for K = 1, an ASSIGNMENT COMMAND message, describing an SDCCH/4,
- for K = 2, a HANDOVER COMMAND message, describing a hopping SDCCH/8 on cell B,
- for K = 3, a PDCH ASSIGNMENT COMMAND message, describing a downlink TBF,
- for K = 4, an RR-CELL CHANGE ORDER message, describing the BCCH ARFCN of cell B.

The mobile then shall go to the described channel or cell and try to establish the new main signalling link. The SS does not answer any of the MS attempts of connection, either as layer 2 SABM frames on the target DCCH or CHANNEL REQUEST messages on the target cell, and checks during 30 seconds that the MS does not transmit either on the target DCCH or TBF or cell or on the old DCCH.

Maximum Duration of Test

5 minutes



Expected Sequence

This sequence is performed for execution counter K = 1 to 4.

Step	Direction	Message	Comments
1	MS		The MS is triggered to perform a GPRS attach procedure
2	MS → SS	CHANNEL REQUEST	Establishment Cause = "One phase packet access" Describes an SDCCH/8  Macro
3	SS → MS	IMMEDIATE ASSIGNMENT	
4	MS → SS	RR INITIALISATION REQUEST	
5		{ Classmark and measurement }	
6a	SS → MS	ASSIGNMENT COMMAND	
7a	MS → SS	RR INITIALISATION REQUEST	K = 1 On the target DCCH. The SS does not send L2-UA frame
8a	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
9a	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
10a	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
11a	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
12a	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
6b	SS → MS	HANDOVER COMMAND	K = 2
7b	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
8b	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
9b	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
10b	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
11b	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
12b	MS → SS	RR INITIALISATION REQUEST	On the target DCCH. The SS does not send L2-UA frame
6c	SS → MS	PDCH ASSIGNMENT COMMAND	K = 3. Describes a downlink TBF
7c	SS		The SS does not transmit on the described TBF
6d	SS → MS	RR-CELL CHANGE ORDER	K = 4
7d	MS → SS	CHANNEL REQUEST	On the target cell
8d	MS → SS	CHANNEL REQUEST	On the target cell
n	MS → SS	L2-SABM	On the old DCCH. The SS does not send L2-UA frame
n+1	MS → SS	L2-SABM	On the old DCCH. The SS does not send L2-UA frame
n+2	MS → SS	L2-SABM	On the old DCCH. The SS does not send L2-UA frame
n+3	MS → SS	L2-SABM	On the old DCCH. The SS does not send L2-UA frame
n+4	MS → SS	L2-SABM	On the old DCCH. The SS does not send L2-UA frame
n+5	MS → SS	L2-SABM	On the old DCCH. The SS does not send L2-UA frame
n+6	SS		The SS checks that the MS does not transmit either on the target DCCH or on the old DCCH

NOTE: n = 13, for K = 1 and 2  
 n = 7, for K = 3  
 n = 9, for K = 4

Specific Message Contents

None