42 Test of Medium Access Control (MAC) protocol

42.1 Test of Medium Access Control (MAC) Procedures on PCCCH in idle mode

This clause presents tests for "Medium Access Control (MAC) Procedures on PCCCH in idle mode" which are specified in GSM 04.60/7.

Applicability and default conditions

The clause is applicable for all mobiles supporting GPRS unless otherwise stated in a specific test.

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

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

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

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

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

42.1.1 Packet Channel Request

42.1.1.1 Packet Channel Request / Message format

42.1.1.1.1 Conformance requirements

There are two formats of the PACKET CHANNEL REQUEST message containing either 8 bits or 11 bits of information. The format to be applied on PRACH is controlled by the parameter ACC_BURST_TYPE that is broadcast on PBCCH.

Reference

GSM 04.60 subclause 7.1.2.1

42.1.1.1.2 Test purpose

To verify that the mobile station applies the correct PACKET CHANNEL REQUEST message format on PRACH according to the ACC_BURST_TYPE parameter broadcast on PBCCH.

42.1.1.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 11 bit access.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Method of trigger GPRS attach.

Switch On/off Yes / No.

Test procedure

The MS is switched on and triggered to perform a GPRS attach. The MS shall send PACKET CHANNEL REQUEST message. The SS verifies that the MS requests 11 bit access format. Switch off the MS.

Change the ACCESS_BURST_TYPE parameter in Packet System Information to 8 bit format and repeat the test procedure. The SS verifies that the MS requests 8 bit access format.

Maximum duration of the test

1 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is switched on and triggered to perform a GPRS attach.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = "Mobility Management procedure". Received on PRACH.
3	SS		SS verifies the requested access bit format.
4	MS		If possible the MS is powered down or switched off otherwise it has its power source removed and then restored.
5	SS	PACKET SYSTEM INFORMATION Type 1	Change ACCESS_BURST_TYPE to indicate 8 bit access. Sent on PBCCH.
6			Repeat step 1 to 3.

Specific message contents

None.

42.1.1.2 Packet Channel Request / Response to Packet Paging

42.1.1.2.1 Conformance requirements

A mobile station in class A or class B mode of operation shall respond to a PACKET PAGING REQUEST message indicating an RR connection establishment. A mobile station in class B mode of operation may abort the packet access procedure at the receipt of a PACKET PAGING REQUEST message indicating an establishment of a RR connection. PACKET PAGING REQUEST messages indicating a non-RR connection shall be ignored.

Mobile stations in class C mode of operating shall not respond to any type of PACKET PAGING REQUEST messages during the packet access procedure but decode the PERSISTENCE_LEVEL parameter if included in the message.

Reference

GSM 04.60 subclause 7.1.2.1

42.1.1.2.2 Test purpose

To verify that the mobile station ignores PACKET PAGING REQUEST messages indicating a non-RR connection after scheduling the sending of PACKET CHANNEL REQUEST messages.

To verify that a mobile station in class A or class B mode of operation shall respond to a PACKET PAGING REQUEST message indicating an RR connection establishment after scheduling the sending of PACKET CHANNEL REQUEST messages.

To verify that a mobile station in class C mode of operating shall not respond to any type of PACKET PAGING REQUEST messages during the packet access procedure.

42.1.1.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access and MAX_RETRANS indicates 7 allowed retransmission.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Supporting GPRS MS class A, B or C Yes/No

Support PDP context.

Method of triggering the MS to initiate an uplink packet transfer.

Test procedure

All MS classes, non-RR connection paging.

The MS is triggered to initiate an uplink packet transfer. When SS has received the first PACKET CHANNEL REQUEST message shall PACKET PAGING REQUEST message indicating a non-RR connection be sent to the MS. The MS shall ignore the PACKET PAGING REQUEST message and continue to send PACKET CHANNEL REQUEST messages requesting one or two phase access. The SS sends PACKET ACCESS REJECT to end the test case.

MS class A and class B, RR connection paging.

The MS is triggered to initiate an uplink packet transfer. When SS has received the first PACKET CHANNEL REQUEST message shall PACKET PAGING REQUEST message indicating a RR connection be sent to the MS. The MS shall send CHANNEL REQUEST messages with establishment cause = “Answer to paging”. SS verify that the MS request RR connection. The SS sends IMMEDIATE ASSIGNMENT REJECT to end the test case.

MS class C, RR connection paging.

The MS is triggered to initiate an uplink packet transfer. When SS has received the first PACKET CHANNEL REQUEST message shall PACKET PAGING REQUEST message indicating a RR connection be sent to the MS. The MS shall ignore the PACKET PAGING REQUEST message and continue to send PACKET CHANNEL REQUEST messages requesting one or two phase access. The SS sends PACKET ACCESS REJECT to end the test case.

Maximum duration of the test

1 min.

Expected sequence

All MS classes, non-RR connection paging.

Step	Direction	Message	Comments
1	MS		The MS is triggered to send 200 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = “One or Two Phase Access Request”. Received on PRACH.
3	SS -> MS	PACKET PAGING REQUEST	Sent on PPCH for TBF establishment.
4	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = “One or Two Phase Access Request”. Received on PRACH. The SS verifies that the MS continue request One or Two Phase packet Access.
5	SS -> MS	PACKET ACCESS REJECT	Sent on PAGCH.

MS class A and class B, RR connection paging.

Only Network mode I.

Step	Direction	Message	Comments
1	MS		The MS is triggered to send 200 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = “One or Two Phase Access Request”. Received on PRACH.
3	SS -> MS	PACKET PAGING REQUEST (1)	See specific message contents. Sent on PPCH for RR connection.
4	MS -> SS	CHANNEL REQUEST	Establishment cause = Answer to paging”. Received on RACH. The SS verifies that the MS request RR connection.
5	SS -> MS	IMMEDIATE ASSIGNMENT REJECT	

MS class C, RR connection paging.

Step	Direction	Message	Comments
1	MS		The MS is triggered to send 200 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = “One or Two Phase Access Request”. Received on PRACH.
3	SS -> MS	PACKET PAGING REQUEST (1)	See specific message contents. Sent on PPCH for RR connection.
4	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = “One or Two Phase Access Request”. Received on PRACH. The SS verifies that the MS request One or Two Phase packet Access.
5	SS -> MS	PACKET ACCESS REJECT	Sent on PAGCH.

Specific message contents

As default messages contents, except:

PACKET PAGING REQUEST (1)

Information element	Value/remark
{1|< Repeated Page info >}	1 (start of Repeated Page info)
{1	1 (page request for RR connection establ.)
{0 < TMSI >	0 (allocated TMSI
< CHANNEL_NEEDED >	00 (any channel type)
{0|1 < eMLPP_PRIORITY >	1 (page request to trigger RR connection)
-eMLPP_PRIORITY}	000 (no priority specified)

42.1.1.3 Packet Channel Request / Access type

42.1.1.3.1 Conformance requirements

If the mobile station intends to use the TBF to send user data, it shall request two phase access if the requested RLC mode is unacknowledged mode. If the requested RLC mode is acknowledged mode and the amount of data can fit in 8 or less than 8 RLC/MAC blocks, the mobile station shall indicate Short Access as access type. The number of blocks shall be calculated assuming channel coding scheme CS-1. If the requested RLC mode is acknowledged mode and amount of data to send takes more than 8 RLC/MAC blocks, the mobile station shall request either one phase access or two phase access.

Reference

GSM 04.60 subclause 7.1.2.1

42.1.1.3.2 Test purpose

1 To verify that the mobile station indicates Short Access as access type if the amount of data to send can fit in 8 or less than 8 RLC/MAC blocks if the requested RLC mode is acknowledged mode.

2 To verify that the mobile station requests either one phase or two phase access if the amount of data to send takes more than 8 RLC/MAC blocks if the requested RLC mode is acknowledged mode.

3 To verify that the mobile station requests two phase access if the requested RLC mode is unacknowledged mode.

42.1.1.3.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink packet data transfer.

Test procedure

The MS is triggered to send data that can fit in 8 or less RLC data blocks. The SS verifies that the MS indicates Short Access Request as the access type in the PACKET CHANNEL REQUEST message. The SS sends PACKET ACCESS REJECT to end the test case.

The MS is triggered to send data where the amount of data takes more than 8 RLC blocks. The SS verifies that the MS indicates One or Two Phase Access Request as the access type in the PACKET CHANNEL REQUEST message. The SS sends PACKET ACCESS REJECT to end the test case.

Repeat above tests with RLC unacknowledged mode.

Maximum duration of the test

20 s.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to send data that can fit in 8 or less RLC data blocks.
2	MS -> SS	PACKET CHANNEL REQUEST	SS verifies that the MS indicates Short Access Request as access type. Received on PRACH.
3	SS -> MS	PACKET ACCESS REJECT	Sent on PAGCH.
4	MS		The MS is triggered to send data where the amount of data takes more than 8 RLC/MAC blocks.
5	MS -> SS	PACKET CHANNEL REQUEST	SS verifies that the MS indicate One or Two Phase Access Request. Received on PRACH.
6	SS -> MS	PACKET ACCESS REJECT	Sent on PAGCH.

Repeat above tests with RLC unacknowledged mode. The SS shall verify that the MS request Two Phase Access in the PACKET CHANNEL REQUEST messages.

Specific message contents

None.

42.1.1.4 Packet Channel Request / Access persistence control on PRACH

42.1.1.4.1 Packet Channel Request / Access persistence control on PRACH / M+1 attempts

42.1.1.4.1.1 Conformance requirements

The mobile station shall make maximally M + 1 attempts to send a PACKET CHANNEL REQUEST message.

Having made M + 1 attempts to send a PACKET CHANNEL REQUEST, the mobile station shall stop timer T3186 and start timer T3170. At expiry of timer T3170, the packet access procedure shall be aborted, a packet access failure shall be indicated to the upper layer and the mobile station shall return to packet idle mode.

Reference

GSM 04.60 subclause 7.1.2.1.1

42.1.1.4.1.2 Test purpose

To verify that the mobile station makes a maximum of M + 1 attempts to send a PACKET CHANNEL REQUEST message, M is the parameter MAX_RETRANS broadcast on PBCCH.

To verify that the mobile station aborts the packet access procedure when the network does not respond to the PACKET CHANNEL REQUEST messages.

42.1.3.1.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access, MAX_RETRANS indicate 1 retransmission and PERSISTENCE_LEVEL P(i)=0.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Test procedure

The SS send PACKET PAGING REQUEST message. The MS is expected to send M+1 PACKET CHANNEL REQUEST messages, M is the parameter MAX_RETRANS broadcast on PBCCH. The SS monitors the MS transmission for a period equal to the maximum length of time it can take to send M+1 PACKET CHANNEL REQUEST messages plus the duration of timer T3170. The SS verifies that the MS makes maximally M+1 attempts to send PACKET CHANNEL REQUEST messages in this period. When the SS not respond the MS shall abort the packet access procedure and perform an abnormal release. The SS sends PACKET UPLINK ASSIGNMENT message corresponding to one of its 3 last PACKET CHANNEL REQUEST messages after a time higher than the duration of timer T3170 and the MS shall not respond to the message.

Repeat the test procedure with the different MAX_RETRANS parameters {2, 4, 7} sent in Packet System Information.

Maximum duration of the test

4 min.

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	Sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST(n)	n = 1, …, M+1. ACCESS TYPE = "Page response". Received on PRACH.
.	.	.	
.	.	.	
3	SS		The SS waits M+1 PACKET CHANNEL REQUESTs+ timer T3170 + 0.5s. The SS verifies that the MS makes maximally M+1 attempts to send PACKET CHANNEL REQUEST messages in this period.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Correspond to one of the last 3 messages in step 2. The MS shall not respond to this message. Sent on PAGCH.
5	SS		Change MAX_RETRANS in PSI1 to 2 retransmission.
6			Repeat step 1 to 4 after 30 seconds.
7	SS		Change MAX_RETRANS in PSI1 to 4 retransmission.
8			Repeat step 1 to 4 after 30 seconds.
9	SS		Change MAX_RETRANS in PSI1 to 7 retransmission.
10			Repeat step 1 to 4 after 30 seconds.

Specific message contents

None.

42.1.1.4.2 Packet Channel Request / Access persistence control on PRACH / Persistence level

42.1.1.4.2.1 Conformance requirements

The first attempt to send a PACKET CHANNEL REQUEST message, may be initiated at the first possible TDMA frame containing PRACH on PDCH defined by the PCCCH_GROUP for the mobile station (see GSM 05.02). For each attempt, the mobile station shall draw a random value R with uniform probability distribution in the set {0, 1, ..., 15}. The mobile station is allowed to transmit a PACKET CHANNEL REQUEST message if P(i), where i is the radio priority of the TBF being established, is less than or equal to R.

Reference

GSM 04.60 subclause 7.1.2.1.1

42.1.1.4.2.2 Test purpose

To verify that for each attempt, the mobile station shall draw a random value R with uniform probability distribution in the set {0, 1, ..., 15}. The mobile station is only allowed to transmit a PACKET CHANNEL REQUEST message if P(i), where i is the radio priority of the TBF being established, is less than or equal to R.

42.1.1.4.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information indicates BS_PCC_CHANS = 3, BS_PAG_BLKS_ RES = 2 and BS_PBCCH_BLKS = 3, BS_PRACH_BLKS = 12 (all Blocks reserved for PRACH).

Mobile Station:

The MS is GPRS attached and in packet idle mode.

Related PICS/PIXIT statement

Support GPRS service.

Test procedure

Specific test parameters:

K equals the value of 120/(MAX_RETRANS+1).

MAX_RETRANS is chosen from {1, 2, 4, 7}

PERSISTENCE_LEVEL P(i) is chosen from {0, 1, 2, ..., 14, 16}

Counter J is initialized with 0 (total number of received Packet Channel Requests)

The SS sends PACKET PAGING REQUEST message. The MS shall send between 0 and M+1 PACKET CHANNEL REQUEST message indicating page response. The SS verifies that the MS draw a random value R for each attach. Every received Packet Channel Request in response to Packet Paging Request increment counter J by 1. This test sequence is performed K times.

The test is performed with Persistence level set to at least P(i)=0, P(i)=8 and P(i)=16.

Maximum duration of the test

The execution of one sequence (for one value k): 30s

Between two consecutive executions (for k and k+1), the SS must wait for amount of time which is enough to guarantee that the MS is in service (listening to its paging subchannel).

Expected sequence

The sequence is executed for execution counter k = 1, …, K.

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	Sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	N0 := number of received Packet Channel Requests in response to step1;
3	MS -> SS	PACKET CHANNEL REQUEST	Count for 10 sec. N0;
:	:	:	J = J + N0;
:	:	:	$0 \le N0 \le M+1$;
			ACCESS TYPE = “Page Response”. Received on
M+2	MS -> SS	PACKET CHANNEL REQUEST	PRACH.
M+3	SS		SS waits for expiry of T3170
M+4	SS		SS waits to allow Cell Reselection

Editors note:

The 10 sec in steps 2 to M+2 is derived from the following consideration:

Answer time for the first Packet Channel Request: 0,7 sec + 8*4,615 ms

Maximum TDMA frame spread between two successive Packet Channel Requests:

max{S+T-1}*4,615ms = 266 * 4,615ms => maximum time to send M+1 Packet Channel Requests

0,7 sec + 8 * 4,615ms + M * 266 * 4,615ms = 9,33 sec.

Verification

According the test procedure J is B(120 ; 1-P(i)/16) distributed. i.e. we will accept MSs, when the following inequality holds $(1-P(i)/16) - 0{,}0161 \cdot \mathrm{sqrt}(P(i)\cdot(16 - P(i))) \le J/120 \le (1-P(i)/16) + 0{,}0161 \cdot \mathrm{sqrt}(P(i)\cdot(16 - P(i)))$

this confidence interval is chosen in such a way that the possibility of non accepting a correct MS is less than 0,5 %.

Remark: If P(i) = 0 the above inequality is simplified to $1 \le J/120 \le 1$, i.e. J =120, i.e. the MS has to answer every PACKET PAGING REQUEST with M+1 PACKET CHANNEL REQUESTS. And if P(i) = 16 the above inequality is simplified to $0 \le J/120 \le 0$, i.e. J = 0, i.e. the MS is not allowed to send PACKET CHANNEL REQUESTS.

Specific message contents

None.

42.1.1.4.3 Packet Channel Request / Access persistence control on PRACH / Successive Attempts

42.1.1.4.3.1 Conformance requirements

The first attempt to send a PACKET CHANNEL REQUEST message, may be initiated at the first possible TDMA frame containing PRACH on PDCH defined by the PCCCH_GROUP for the mobile station (see GSM 05.02). For each attempt, the mobile station shall draw a random value R with uniform probability distribution in the set {0, 1, ..., 15}.The mobile station is allowed to transmit a PACKET CHANNEL REQUEST message if P(i), where i is the radio priority of the TBF being established, is less than or equal to R.

After each attempt, the S and T parameters are used to determine the next TDMA frame in which it may be allowed to make a successive attempt. The number of TDMA frames belonging to the PRACH on the PDCH defined by the PCCCH group for the mobile station between two successive attempts to send a PACKET CHANNEL REQUEST message excluding the TDMA frames potentially containing the messages themselves is a random value drawn for each transmission with uniform probability distribution in the set {S, S + 1, ..., S + T - 1}.

Reference

GSM 04.60 subclause 7.1.2.1.1

42.1.3.4.3.2 Test purpose

To verify that the number of TDMA frames belonging to the PRACH on the PDCH defined by the PCCCH group for the mobile station between two successive attempts to send a PACKET CHANNEL REQUEST message excluding the TDMA frames potentially containing the messages themselves is a random value drawn for each transmission with uniform probability distribution in the set {S, S + 1, ..., S + T - 1}.

42.1.3.4.3.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information:

BS_PCC_CHANS = 3, BS_PAG_BLKS_RES = 2 and BS_PBCCH_BLKS = 3.MAX_RETRANS is arbitrarily chosen in the set {1,2,4,7}.

TX_INT is arbitrarily chosen in the set {6, 7, 8, 9, 10, 12, 14, 16, 20, 25, 32, 50}.

S is arbitrarily chosen in the set {12, 15, 20, 30, 41, 55, 76, 109, 163, 217}.

PERSISTENCE_LEVEL P(i) = 0.

Mobile Station:

The MS is GPRS attached and in packet idle mode.

Related PICS/PIXIT statement

Support GPRS service.

Test procedure

Specific test parameters:

K equals the upper rounded value of 230/M.

The SS sends PACKET PAGING REQUEST message. The MS shall send PACKET CHANNEL REQUEST messages M+1 times indicating page response. After each attempt, the S and T parameters are used to determine the next TDMA frame in which it may be allowed to make a successive attempt. The SS measure the number of TDMA frames f(n,k) between each attempt, excluding the slots containing the messages themselves. The SS does not answer the PACKET CHANNEL REQUEST messages MAX_RETRANS times. The SS sends an PACKET ACCESS REJECT message. The test sequence is executed K times.

M is the value of the parameter MAX_RETRANS,

T is the value of the parameter TX_INT,

S is the value of the parameter S.

Maximum duration of the test

The execution of one sequence (for one value k): 10s

Between two consecutive executions (for k and k+1), the SS must wait for amount of time which is enough to guarantee that the MS is in service (listening to its paging subchannel).

Expected sequence

The sequence is executed for execution counter k = 1, …, K.

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	Sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = "Page Response". Received on PRACH.
			Step 3-5 are executed for execution counter n=1,…,MAX_RETRANS.
3	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = "Page Response". Received on PRACH.
4	SS		See verification.
5	SS -> MS	PACKET ACCESS REJECT	Sent on PAGCH.

Verification

In step 4 the SS measure the number of TDMA frames belonging to the PRACH on the PDCH defined by the PCCCH group for the MS between two successive attempts to send a PACKET CHANNEL REQUEST message excluding the TDMA frames potentially containing the messages themselves. f(n,k) shall be in the set {S, S + 1, ..., S + T - 1}. The SS stores f.

Test:

The following requirement shall be met

((((sq(Sum(S)) + sq(Sum(S+1)) + ... + sq(Sum(S+T-1))) * T/(K*M)) – (K*M) ≤

½ * sq(sqrt(2T-3) + 2,58) + 1,1

Sum(X) := CARD { k | f(n,k) = X} := the number of times that f(n,k) equals X.

The test and the number of sample are chosen in such a way that the possibility of non-accepting a correct MS is less than [0,5%].

Specific message contents

None.

42.1.2 Packet Uplink/Downlink Assignment

42.1.2.1 Packet uplink assignment procedure

42.1.2.1.1 Packet Uplink Assignment / Packet access queuing notification procedure

42.1.2.1.1.1 Packet Uplink Assignment / Packet queuing notification / Stop sending Packet Channel Requests

42.1.2.1.1.1.1 Conformance requirements

On receipt of a PACKET QUEUING NOTIFICATION message corresponding to one of its 3 last PACKET CHANNEL REQUEST messages, the mobile station shall stop timers T3186 and T3170 if running, start timer T3162, and stop sending PACKET CHANNEL REQUEST messages.

Reference

GSM 04.60 subclause 7.1.2.2.2

42.1.2.1.1.1.2 Test purpose

To verify that the mobile station stops sending PACKET CHANNEL REQUEST messages on receipt of a PACKET QUEUING NOTIFICATION message.

42.1.2.1.1.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information MAX_RETRANS indicates 7 allowed retransmission.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Switch off on button Yes/No.

Method of trigger GPRS attach.

Test procedure

The MS is switched on and triggered to perform a GPRS attach. The SS sends PACKET QUEUING NOTIFICATION message corresponding to one of the last three PACKET CHANNEL REQUEST messages. The SS verifies that the MS stops sending PACKET CHANNEL REQUEST messages. The SS sends PACKET ACCESS REJECT message to end the test procedure.

Maximum duration of the test

15 s.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is powered up or switched on and triggered to perform a GPRS attach.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
4	SS -> MS	PACKET QUEUING NOTIFICATION	Corresponding to message in step 2. FRAME_NUMBER set to indicating + 2200 frames. Sent on PAGCH. The SS verifies during 10 seconds that MS stop sending PACKET CHANNEL REQUEST messages.
5	SS -> MS	PACKET ACCESS REJECT	Sent on PAGCH.

Specific message contents

None.

42.1.2.1.1.2 Packet Uplink Assignment / Packet queuing notification / Ignoring Packet Queuing Notification

42.1.2.1.1.2.1 Conformance requirements

If the mobile station receives a PACKET QUEUING NOTIFICATION message while waiting for the TBF Starting Time of a valid PACKET UPLINK ASSIGNMENT message, the mobile station shall ignore the PACKET QUEUEING NOTIFICATION.

Reference

GSM 04.60 subclause 7.1.2.2.2

42.1.2.1.1.2.2 Test purpose

To verify that the mobile station ignores the PACKET QUEUEING NOTIFICATION if the mobile station receives a PACKET QUEUING NOTIFICATION message while waiting for the TBF Starting Time of a valid PACKET UPLINK ASSIGNMENT message.

42.1.2.1.1.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Switch off on button Yes/No.

Method of trigger GPRS attach.

Test procedure

The MS is switched on and triggered to perform a GPRS attach. The SS sends PACKET UPLINK ASSIGNMENT message containing a TBF Starting Time. While the MS is waiting for the TBF Starting Time the SS sends a PACKET QUEUING NOTIFICATION message. The MS shall ignore PACKET QUEUING NOTIFICATION message and at the frame number indicated by the TBF Starting Time, the MS shall starts to send the uplink RLC data in the allocated uplink resources. The SS allows the MS to complete the GPRS attach procedure.

Maximum duration of the test

15 s.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is switched on and triggered to perform a GPRS attach.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	See specific message contents. Sent on PAGCH.
4	SS -> MS	PACKET QUEUING NOTIFICATION	See specific message contents. Sent on PAGCH before starting time in step 3 have elapsed.
5		{GPRS Attach procedure}	Macro. Completion from step 4 in the attach procedure. The SS verifies that the first RLC data block sends according to the indicated starting time in step 3.

Specific message contents

As default messages contents, except:

PACKET UPLINK ASSIGNMENT in step 3

Information element	Value/remark
Fixed Allocation < TBF_Starting_Time >	 [Arbitrarily chosen]

PACKET QUEUING NOTIFICATION in step 4

Information element	Value/remark
Packet Request Reference IE < FRAME_NUMBER > < TQI >	 [Arbitrarily chosen] Allocate a TQI to the MS.

42.1.2.1.1.3 Packet Uplink Assignment / Packet queuing notification / Assigned PDCHs

42.1.2.1.1.3.1 Conformance requirements

On receipt of a PACKET UPLINK ASSIGNMENT message following a PACKET QUEUING NOTIFICATION message, the mobile station shall stop timer T3162, and follow the procedures defined in subclause 7.1.2.2.1.

If the PACKET UPLINK ASSIGNMENT message does not specify a TBF starting time, the mobile station shall switch to the assigned PDCHs, start timer T3164 and proceed with contention resolution of the one phase access procedure according to subclause 7.1.2.3.

Reference

GSM 04.60 subclause 7.1.2.2.2 and subclause 7.1.2.2.1.

42.1.2.1.1.3.2 Test purpose

To verify that the mobile station switches to the assigned PDCHs on receipt of a PACKET UPLINK ASSIGNMENT message after a PACKET QUEUING NOTIFICATION message.

42.1.2.1.1.3.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Switch off on button Yes/No.

Method of trigger GPRS attach.

Test procedure

The MS is switched on and triggered to perform a GPRS attach. The SS send PACKET QUEUING NOTIFICATION message and sends then PACKET UPLINK ASSIGNMENT message. The SS allows the MS to complete the GPRS attach procedure.

Maximum duration of the test

15 s.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is switched on and triggered to perform a GPRS attach procedure.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET QUEUING NOTIFICATION	See specific message contents. Sent on PAGCH.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Include same TQI as step 3. Sent on PAGCH before timer T3162 expires.
5		{GPRS attach procedure }	Macro. Completion from step 4 in the attach procedure.

Specific message contents

As default messages contents, except:

PACKET QUEUING NOTIFICATION in step 3

Information element	Value/remark
Packet Request Reference IE	
< FRAME_NUMBER >	[Arbitrarily chosen]
< TQI >	Allocate a TQI to the MS.

42.1.2.1.1.4 Packet Uplink Assignment / Packet queuing notification / Expiry of timer T3162

42.1.2.1.1.4.1 Conformance requirements

On receipt of a PACKET QUEUING NOTIFICATION message corresponding to one of its 3 last PACKET CHANNEL REQUEST messages the mobile station shall stop timer T3170 and T3186 if running and stop sending PACKET CHANNEL REQUEST messages. On receipt of a PACKET UPLINK ASSIGNMENT message following a PACKET QUEUING NOTIFICATION message, the mobile station shall stop timer T3162 and follow the procedures defined in subclause 7.1.2.2.1.At expiry of timer T3162, the packet access procedure shall be aborted and a packet access failure indicated to the upper layer and the mobile station shall return to packet idle mode.

Reference

GSM 04.60 subclause 7.1.2.2.2, subclause 13.1.

42.1.2.1.1.4.2 Test purpose

1 To verify that the MS waits T3162 seconds before aborting the packet access procedure on receipt of a PACKET QUEUING NOTIFICATION message.

2 To verify that the mobile station listening to its paging channel after a time greater than timer T3162.

42.1.2.1.1.4.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

The MS is GPRS attached and in packet idle mode.

Related PICS/PIXIT statement

Support GPRS service.

Test procedure

The SS page the MS with a PACKET PAGING REQUEST message. The SS sends PACKET QUEUING NOTIFICATION message corresponding to one of its 3 last PACKET CHANNEL REQUEST messages. The SS waits until T3162 seconds elapse and sends an PACKET UPLINK ASSIGNMENT message which shall be ignored by the MS since the access procedure should be aborted.

The SS page the MS with a PACKET PAGING REQUEST message. The SS verifies that the MS respond to the paging request and sends PACKET QUEUING NOTIFICATION message corresponding to one of its 3 last PACKET CHANNEL REQUEST messages. The SS sends a PACKET UPLINK ASSIGNMENT message before T3162 seconds elapse and the MS shall complete the uplink data transfer containing the paging response.

Maximum duration of the test

1 min.

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	Sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = "Page response". Received on PRACH.
3	SS -> MS	PACKET QUEUING NOTIFICATION	Allocate a TQI to the MS. Sent on PAGCH.
4	SS		The SS waits T3162 + 0.1*T3162 .
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Include same TQI as in step 3 and dynamic allocation struct. Sent on PAGCH.
6	SS		The SS verifies for 5 s that the MS does not respond.
7	SS -> MS	PACKET PAGING REQUEST	Sent on PPCH.
8	MS -> SS	PACKET CHANNEL REQUEST	ACCESS TYPE = "Page response". Received on PRACH.
9	SS -> MS	PACKET QUEUING NOTIFICATION	Allocate a TQI to the MS. Sent on PAGCH.
10	SS		The SS waits T3162 - 0.1*T3162 .
11	SS -> MS	PACKET UPLINK ASSIGNMENT	Include same TQI as in step 9, dynamic allocation struct. Sent on PAGCH.
12	MS -> SS	UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating paging response. Received on uplink PDTCH assigned in step 11.
13	SS -> MS	PACKET UPLINK ACK/NACK	Acknowledge the received RLC data block, Final Ack Indicator = "1". Sent on PACCH
14	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Acknowledge the RLC control message. Received on PACCH.

Specific message contents

None.

42.1.2.1.2 Packet Uplink Assignment / Response to packet polling request

42.1.2.1.2.1 Conformance requirements

On receipt of a PACKET POLLING REQUEST message, the mobile station shall respond to the network with the PACKET CONTROL ACKNOWLEDGEMENT message in the reserved uplink radio block specified by the RRBP field.

Reference

GSM 04.60 subclause 7.1.2.2.3

42.1.2.1.2.2 Test purpose

To verify that the mobile station responds to the Network with a PACKET CONTROL ACKNOWLEDGEMENT message in the reserved uplink radio block specified by the RRBP field on receipt of a PACKET POLLING REQUEST message.

42.1.2.1.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access and CONTROL_ACK_TYPE indicates four access bursts.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink packet data transfer.

Test procedure

The MS is triggered to transfer data. The SS sends a PACKET QUEUING NOTIFICATION message and sends then a PACKET POLLING REQUEST message. On receipt of PACKET POLLING REQUEST message the MS shall respond with PACKET CONTROL ACKNOWLEDGEMENT message as four access bursts. The SS verifies that MS sends the PACKET CONTROL ACKNOWLEDGEMENT and send PACKET UPLINK ASSIGNMENT message. The uplink data transfer is completed.

Maximum duration of the test

30 s.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to transfer 200 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET QUEUING NOTIFICATION	Allocate a TQI to the MS. Sent on PAGCH.
4	SS -> MS	PACKET POLLING REQUEST	Include same TQI as step 3. Sent on PAGCH.
5	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the uplink block specified by the RRBP field on PACCH as four access bursts.
6	SS		SS verifies that the message in step 5 was received.
7	SS -> MS	PACKET UPLINK ASSIGNMENT	Include same TQI as step 3, dynamic allocation struct and USF_GRANULARITY = four blocks. Sent on PAGCH.
8		{Uplink data transfer, dynamic allocation}	Macro. Completion from step 4 in the TBF procedure.

Specific message contents

None.

42.1.2.1.3 Packet Uplink Assignment / Packet access reject procedure

42.1.2.1.3.1 Packet Uplink Assignment / Packet access reject / Action during Wait_Indication

42.1.2.1.3.1.1 Conformance requirements

On receipt of a PACKET ACCESS REJECT message containing a Reject structure addressed to the mobile station, where the Packet Request Reference in the Reject structure corresponds to one of its three 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 if present, start timer T3170 if it has not already been started and listen to the downlink PCCCH until timer T3170 expires. During this time, the mobile station shall ignore additional PACKET ACCESS REJECT message, but on reception of any PACKET UPLINK ASSIGNMENT message corresponding to any other of its 3 last PACKET CHANNEL REQUEST MESSAGE the mobile station shall stop timers T3170 and T3172 if running and follow the procedure defined in subclause 7.1.2.2.1.

Reference

GSM 04.60 subclause 7.1.2.2.4

42.1.2.1.3.1.2 Test purpose

To verify that the mobile station stops sending PACKET CHANNEL REQUEST messages on receipt of a PACKET ACCESS REJECT message containing a WAIT_INDICATION field.

To verify that the mobile station ignores additional PACKET ACCESS REJECT messages, but on reception of any PACKET UPLINK ASSIGNMENT message corresponding to any other of its 3 last PACKET CHANNEL REQUEST messages the mobile station shall switch to the assigned PDCHs if the message is received before timer T3170 expire.

42.1.2.1.3.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.The packet system information MAX_RETRANS indicates 7 retransmissions, TX_INT indicates 50 slots to spread transmission and parameter S indicates the value 217.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Switch off on button Yes/No.

Method of trigger GPRS attach.

Test procedures

The MS is switched on and triggered to perform a GPRS attach. The SS sends PACKET ACCESS REJECT message with WAIT_INDICATION field corresponding to one of the last three PACKET CHANNEL REQUEST messages. The SS verifies that the MS does not send further PACKET CHANNEL REQUEST messages. The SS sends a new PACKET ACCESS REJECT message without WAIT_INDICATION field The SS shall then send a PACKET UPLINK ASSIGNMENT message corresponding to one of the last three sent PACKET CHANNEL REQUEST messages before the timer T3170 expire (T+2*S TDMA frames). The SS allows the MS to complete the GPRS attach procedure.

Maximum duration of the test

15 s.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is switched on and triggered to perform a GPRS attach.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
4	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
5	SS -> MS	PACKET ACCESS REJECT	Containing WAIT_INDICATION = 15 seconds and packet request reference = pertaining to message received in step 2. Sent on PAGCH.
6	SS		The SS checks 0,8*T3170 that the MS does not send further PACKET CHANNEL REQUEST messages.
7	SS -> MS	PACKET ACCESS REJECT	Without WAIT_INDICATION. Sent 0,8*T3170 on PAGCH. The MS shall not consider this message.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Random Reference = pertaining to message received in step 2. Sent 0,9*T3170 on PAGCH.
9		{GPRS attach procedure}	Macro. Completion from step 4 in the attach procedure.

Specific message contents

None.

42.1.2.1.3.2 Packet Uplink Assignment / Packet access reject / No respond

42.1.2.1.3.2.1 Conformance requirements

On receipt of a PACKET ACCESS REJECT message containing 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 is not allowed to make a new attempt for packet access in the same cell until timer T3172 expires, but may attempt packet access in an other cell after successful cell reselection for radio conditions reasons (see GSM 05.08). A mobile station in class A or B mode of operation may attempt to enter the dedicated mode in the same cell before timer T3172 has expired. During the timer T3172 is running, the mobile station shall ignore all received PACKET PAGING REQUEST messages except paging request to trigger RR connection establishment.

Reference

GSM 04.60 subclause 7.1.2.2.4

42.1.2.1.3.2.2 Test purpose

To verify that the mobile station ignores PACKET PAGING REQUEST messages requesting TBF establishment when T3172 is running.

42.1.2.1.3.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

The MS is GPRS attached and in packet idle mode.

Related PICS/PIXIT statement

Support GPRS service.

Supporting GPRS MS class A and MS class B.

Test procedure

The SS sends a PACKET PAGING REQUEST message. After response from the MS the SS sends PACKET ACCESS REJECT message with WAIT_INDICATION set to a value between 1-255 seconds (see specific message contents). The SS sends then a PACKET UPLINK ASSIGNMENT message after timer T3170 has elapse. The SS verifies that the MS not respond to the message. The SS sends a PACKET PAGING REQUEST message request TBF establishment before the wait indication has elapse. The SS verifies that the MS not respond to the message. The SS sends a PACKET PAGING REQUEST message request TBF establishment after the wait indication has elapse. The SS verifies that the MS respond to the message.

The test procedures shall be repeated with different chosen values of WAIT INDICATION.

Maximum duration of the test

10 min.

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	Sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET ACCESS REJECT	See specific message contents. Sent on PAGCH.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Send this message 1,1*T3170on PAGCH.
5	SS		Verify for 5 seconds that the MS does not respond to message in step 4.
6	SS -> MS	PACKET PAGING REQUEST	Request TBF establishment. Send this message after (0,9*WAIT INDICATION (step 3)) on PPCH.
7	SS		Verify that the MS does not respond to message in step 6.
8	SS -> MS	PACKET PAGING REQUEST	Request TBF establishment. Send this message after (1,1*WAIT INDICATION (step 3)) on PPCH.
9	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.

The test is repeated with different values of WAIT INDICATION, see specific message contents.

Specific message contents

As default messages contents, except:

PACKET ACCESS REJECT in step 3

Information element	Value/remark
< WAIT_INDICATION >	Set values between 1-255, see below.
< WAIT_INDICATION_SIZE >	0 (units of seconds)

Case 1 : WAIT_INDICATION = 60.

Case 2 : WAIT_INDICATION = 240.

42.1.2.1.3.3 Packet Uplink Assignment / Packet access reject / Trigger RR connection

Applicability

This test is only applicable to GPRS mobiles that can operate in mode B in network mode 1.

42.1.2.1.3.3.1 Conformance requirements

On receipt of a PACKET ACCESS REJECT message containing 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 is not allowed to make a new attempt for packet access in the same cell until timer T3172 expires, but may attempt packet access in an other cell after successful cell reselection for radio conditions reasons (see GSM 05.08). A mobile station in class A or B mode of operation may attempt to enter the dedicated mode in the same cell before timer T3172 has expired. During the timer T3172 is running, the mobile station shall ignore all received PACKET PAGING REQUEST messages except paging request to trigger RR connection establishment.

Reference

GSM 04.60 subclause 7.1.2.2.4

42.1.2.1.3.3.2 Test purpose

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

42.1.2.1.3.3.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

The MS is GPRS attached and in packet idle mode. The MS shall have a valid TMSI.

Related PICS/PIXIT statement

Support GPRS service.

Supporting GPRS MS class B.

Test procedure

The SS sends a PACKET PAGING REQUEST message request TBF connection establishment. After response from the MS the SS sends PACKET ACCESS REJECT message with a WAIT_INDICATION value. The SS trigger first paging with TBF connection establishment and then RR connection establishment before the wait indication has elapse. The SS verifies that the MS not respond to the TBF connection establishment but respond to the RR connection establishment.

Maximum duration of the test

1 min.

Expected sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET PAGING REQUEST	Request TBF connection establishment sent on PPCH.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET ACCESS REJECT	See specific message contents. Sent on PAGCH.
4	SS -> MS	PACKET PAGING REQUEST	Request TBF connection establishment sent on PPCH.
5	SS		Verify no respond from MS.
6	SS -> MS	PACKET PAGING REQUEST	Request RR connection establishment see specific message contents. Send this message after 0,5*WAIT_INDICATION on PPCH.
7	MS -> SS	CHANNEL REQUEST	Request RR connection. Received on RACH.

Specific message contents

As default messages contents, except:

PACKET ACCESS REJECT in step 3

Information element	Value/remark
< WAIT_INDICATION >	30
< WAIT_INDICATION_SIZE >	0 (units of seconds)

PACKET PAGING REQUEST in step 6:

< MESSAGE_TYPE >	100010
< PAGE_MODE >	00 (Normal Paging)
{0|1< PERSISTENCE_LEVEL >}	0 (no persistence level present)
{0|1< NLN >}	0 (no notification list number)
{1|< Repeated Page info>}	1 (start of Repeated Page info)
{1	1 (Page request for Rrconn. establishment)
{0< TMSI >	0 (TMSI)
- TMSI	allocated TMSI
< padding bits >	spare Padding

42.1.2.1.4 Packet Uplink Assignment / Packet Uplink Assignment handling

42.1.2.1.4.1 Conformance requirements

On receipt of a PACKET UPLINK ASSIGNMENT message corresponding to one of its 3 last PACKET CHANNEL REQUEST messages, the mobile station shall stop timers T3186 and T3170 if running, stop sending PACKET CHANNEL REQUEST messages.

Reference

GSM 04.60 subclause 7.1.2.2.1

42.1.2.1.4.2 Test purpose

To verify that the mobile station stops sending PACKET CHANNEL REQUEST messages on receipt of a PACKET UPLINK ASSIGNMENT message.

42.1.2.1.4.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information MAX_RETRANS indicates 7 allowed retransmission.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Switch off on button Yes/No.

Method of trigger GPRS attach.

Foreseen final state of the MS

Packet idle mode.

Test procedure

The MS is switched on and triggered to perform a GPRS attach. The SS send a PACKET UPLINK ASSIGNMENT message corresponding to one of the last 3 PACKET CHANNEL REQUEST messages from the MS. The SS verifies that the MS stops sending PACKET CHANNEL REQUEST messages. The SS allows the MS to complete the GPRS attach procedure.

Maximum duration of the test

15 s.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is switched on and triggered to perform a GPRS attach.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Respond to requests message in step 2. Sent on PAGCH with dynamic allocation struct. The SS shall verify for 4.5 seconds that the MS stops sending packet channel request messages.
5		{GPRS attach procedure }	Macro. Completion from step 4 in the attach procedure.

Specific message contents

None.

42.1.2.1.5 Packet Uplink Assignment / One or two phase access

42.1.2.1.5.1 Conformance requirements

A mobile station that has not indicated Single Block Without TBF Establishment in the PACKET CHANNEL REQUEST message shall perform a two phase access if the Single Block Allocation struct is included in the PACKET UPLINK ASSIGNMENT message, or a one phase access if the Dynamic Allocation or Fixed Allocation struct is included.

Reference

GSM 04.60 subclause 7.1.2.2.1

42.1.2.1.5.2 Test purpose

To verify that the mobile station proceeds with one phase access or two phase access according to the parameters in the PACKET UPLINK ASSIGNMENT message.

42.1.2.1.5.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Switch off on button Yes/No.

Method of trigger GPRS attach.

Test procedures

The MS is switched on and triggered to perform a GPRS attach. The SS send a PACKET UPLINK ASSIGNMENT message with Dynamic Allocation struct information field, the MS shall proceed with a one-phase access. The SS allows the MS to complete the GPRS attach procedure. Switch off the MS.

The MS is switched on and triggered to perform a GPRS attach. The SS send a PACKET UPLINK ASSIGNMENT message with Fixed Allocation struct information field, the MS shall proceed with a one-phase access. The SS allows the MS to complete the GPRS attach procedure. Switch off the MS.

The MS is switched on and triggered to perform a GPRS attach. The SS send a PACKET UPLINK ASSIGNMENT message with Single Block Allocation struct information field, the MS shall perform a two-phase access i.e. it should transmit a PACKET RESOURCE REQUEST message on the allocated uplink resource. The SS responds with a PACKET UPLINK ASSIGNMENT message with Dynamic Allocation struct information field. The SS allows the MS to complete the GPRS attach procedure. Switch off the MS.

The MS is switched on and triggered to perform a GPRS attach. The SS send a PACKET UPLINK ASSIGNMENT message with Single Block Allocation struct information field, the MS shall perform a two-phase access i.e. it should transmit a PACKET RESOURCE REQUEST message on the allocated uplink resource. The SS responds with a PACKET UPLINK ASSIGNMENT message with Fixed Allocation struct information field. The SS allows the MS to complete the GPRS attach procedure.

Maximum duration of the test

2 min.

Expected sequences

Step	Direction	Message	Comments
1	MS		The MS is switched on and triggered to perform a GPRS attach.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Dynamic Allocation struct information. Sent on PAGCH.
4		{GPRS attach procedure }	Macro. Completions from step 4 in the attach procedure as one phase access.
5	MS		Switch off the MS.
6	MS		The MS is switched on and triggered to perform a GPRS attach.
7	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Fixed Allocation struct information. Sent on PAGCH.
9	MS -> SS	Uplink RLC data blocks (GMM ATTACH REQUEST)	
10	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH to acknowledge the data blocks.
11	SS -> MS	PACKET DOWNLINK ASSIGNMENT	
12	SS -> MS	Downlink RLC data blocks (GMM ATTACH ACCEPT)	
13	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on PACCH.
14	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
15	SS -> MS	PACKET UPLINK ASSIGNMENT	Fixed Allocation struct information. Sent on PAGCH.
16	MS -> SS	Uplink RLC data blocks (GMM ATTACH COMPLETE)	
17	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH to acknowledge the data blocks.
18	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	
19	MS		Switch off the MS.
20	MS		The MS is switched on and triggered to perform a GPRS attach.
21	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
22	SS -> MS	PACKET UPLINK ASSIGNMENT	Single Block Allocation struct information. Sent on PAGCH.
23	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 22.
24	SS -> MS	PACKET UPLINK ASSIGNMENT	Dynamic Allocation struct information. Sent on PACCH.
25		{ GPRS attach procedure }	Macro. Completion from step 4 in the attach procedure.
26	MS		Switch off the MS.
27	MS		The MS is switched on and triggered to perform a GPRS attach.
28	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
29	SS -> MS	PACKET UPLINK ASSIGNMENT	Single Block Allocation struct information. Sent on PAGCH.
30	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 29.
31	SS -> MS	PACKET UPLINK ASSIGNMENT	Fixed Allocation struct information. Sent on PACCH.
32	MS -> SS	Uplink RLC data blocks (GMM ATTACH REQUEST)	
33	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH to acknowledge the data blocks.
34	SS -> MS	PACKET DOWNLINK ASSIGNMENT	
35	SS -> MS	Downlink RLC data blocks (GMM ATTACH ACCEPT)	
36	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on PACCH.
37	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
38	SS -> MS	PACKET UPLINK ASSIGNMENT	Single Block Allocation struct information. Sent on PAGCH.

39	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 38.
40	SS -> MS	PACKET UPLINK ASSIGNMENT	Fixed Allocation struct information. Sent on PACCH.
41	MS -> SS	Uplink RLC data blocks (GMM ATTACH COMPLETE)	
42	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH to acknowledge the data blocks.
43	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	

Specific message contents

PACKET UPLINK ASSIGNMENT dynamic allocation struct specified in 42.1.3.2.8

PACKET UPLINK ASSIGNMENT fixed allocation struct specified in 42.1.3.2.9

PACKET UPLINK ASSIGNMENT single block allocation struct specified in 42.1.3.2.10

42.1.2.1.6 Packet Uplink Assignment / Decoding of frequency parameters

42.1.2.1.6.1 Conformance requirements

The mobile station may use information received on PBCCH, BCCH or a previous assignment message to decode the frequency parameters contained in the assignment message. If the mobile station detects an invalid Frequency Parameters information element in the assignment message, it shall abort the procedure, if required initiate a partial acquisition of PBCCH or BCCH, and may then re-initiate this procedure.

When the indirect encoding is used, the network may include a CHANGE_MARK_1 and a CHANGE_MARK_2 in the Frequency Parameters information element. The mobile station shall then verify that it is using a set of PBCCH or BCCH information identified by a PSI or SI *change mark* corresponding to one of the CHANGE_MARK_1 or 2 parameters, for the decoding of the frequency information. If that is not the case, an abnormal condition occurs.

Reference

GSM 04.60 subclause 7.1.2.2.1, subclause 5.5.1.7.

42.1.2.1.6.2 Test purpose

To verify that the mobile station uses information received on PBCCH to decode the frequency parameters contained in the assignment message and when the mobile station receives a PACKET UPLINK ASSIGNMENT message with an invalid frequency parameters information element the mobile station shall abort the procedure.

42.1.2.1.6.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. Packet system information PSI2 including frequency hopping parameters.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Switch off on button Yes/No.

Method of trigger GPRS attach.

Test procedure

The MS is switched on and triggered to perform a GPRS attach. The SS send a PACKET UPLINK ASSIGNMENT message containing frequency parameter information elements. The SS allows the MS to complete the GPRS attach procedure. The MS is switched off, then switched on again and triggered to perform a GPRS attach. The SS sends PACKET UPLINK ASSIGNMENT message containing an invalid frequency parameter as respond to the PACKET CHANNEL REQUEST message from the MS. The SS verifies that the MS abort the GPRS attach procedure.

Maximum duration of the test

30 s.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is switched on and triggered to perform a GPRS attach.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Include frequency parameters see specific message contents. Sent on PAGCH.
4		{GPRS attach procedure}	Macro. Completion from step 4 in the attach procedure.
5	MS		Switch off the MS.
6	MS		The MS is switched on and triggered to perform a GPRS attach.
7	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Include invalid frequency parameter see specific message contents. Sent on PAGCH.
9	SS		The SS verifies that the MS abort the GPRS attach procedure.

Specific message contents

As default messages contents, except:

PACKET SYSTEM INFORMATION type 2 in initial condition

Information element	Value/remark
< PSI2_CHANGE_MARK >	00
< PCCCH Description List struct >	
< TSC >	arbitrarily chosen
{0|1< Hopping PCCCH carriers >	1
< MA_NUMBER	0001 (List 1)
< Hopping PCCCH carriers struct >	
< Hopping PCCCH carriers struct >	
< MAIO >	arbitrarily chosen
< TIMESLOT_ALLOCATION	000000100 (timeslot 2)

PACKET UPLINK ASSIGNMENT in step 3

Information element	Value/remark
{0|1< Frequency Parameters >}	1 (hopping channel)
< Frequency Parameters IE >	
< TSC >	Same as PSI2.
< Indirect encoding struct >	01 (Indirect encoding)
< MAIO >	Same as PSI2.
< MA_NUMBER >	Same as PSI2.
{0|1< CHANGE_MARK_1 >	1 (CHANGE_MARK_1 present)
- CHANGE_MARK_1}	00 (same change mark as PSI2_CHANGE_MARK)
{0|1< CHANGE_MARK_2 >}	0 (no CHANGE_MARK_2)

PACKET UPLINK ASSIGNMENT in step 8

Information element	Value/remark
{0|1< Frequency Parameters >}	1 (hopping channel)
< Frequency Parameters IE >	
< TSC >	Same as PSI2.
< Indirect encoding struct >	01 (Indirect encoding)
< MAIO >	Same as PSI2.
< MA_NUMBER >	Same as PSI2.
{0|1< CHANGE_MARK_1 >	1 (CHANGE_MARK_1 present)
- CHANGE_MARK_1}	01 (which mismatches PSI2_CHANGE_MARK)
{0|1< CHANGE_MARK_2 >}	0 (no CHANGE_MARK_2)

42.1.2.1.7 Packet Uplink Assignment / Most recently received Packet Uplink Assignment

42.1.2.1.7.1 Conformance requirements

A PACKET UPLINK ASSIGNMENT message may indicate an assignment starting time in the TBF Starting Time parameter. The mobile station shall monitor PCCCH until the point in time denoted by the TBF Starting Time. If while monitoring the PCCCH the mobile station receives more than one PACKET UPLINK ASSIGNMENT message, it shall act upon the most recently received message and shall ignore the previous message.

Reference

GSM 04.60 subclause 7.1.2.2.1

42.1.2.1.7.2 Test purpose

To verify that the mobile station monitors PCCCH until the point in time denoted by the TBF Starting Time and that the mobile station acts on the most recently received Packet Uplink Assignment.

42.1.2.1.7.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Switch off on button Yes/No.

Method of trigger GPRS attach.

Test procedure

The MS is switched on and triggered to perform a GPRS attach. The SS sends PACKET UPLINK ASSIGNMENT message with a TBF starting time. Then send a new PACKET UPLINK ASSIGNMENT message with another TBF starting time and a different timeslot on PCCCH before the first TBF starting time has elapse. The MS shall start to send the RLC data block on the allocated uplink according to the second TBF starting time. The SS allows the MS to complete the GPRS attach procedure.

Maximum duration of the test

15 s.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is switched on and triggered to perform a GPRS attach procedure.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	See specific message contents. Sent on PAGCH.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	See specific message contents. Sent on PAGCH.
5		{GPRS attach procedure}	Macro. Completion from step 4 in the attach procedure. Sent on allocated uplink resource. The SS verifies that the MS starts to send data according to information in step 4.

Specific message contents

As default messages contents, except:

PACKET UPLINK ASSIGNMENT in step 3

Information element	Value/remark
Dynamic allocation struct	
< TIMESLOT_ALLOCATION >	00010000, allocate timeslot 3.
< TBF_STARTING_TIME >	Arbitrarily chosen, high enough so the next message will be sent before the time has elapsed.

PACKET UPLINK ASSIGNMENT in step 4

Information element	Value/remark
Dynamic allocation struct	
< TIMESLOT_ALLOCATION >	00000010, allocate timeslot 6.
< TBF_STARTING_TIME >	Arbitrarily chosen.

42.1.2.1.8 Packet Uplink Assignment / One phase access

42.1.2.1.8.1 Packet Uplink Assignment / One phase access / Contention Resolution

The contention resolution is completed on the mobile station when the mobile station receives a PACKET UPLINK ACK/NACK message with the same TLLI as the mobile station has included in the RLC header of the first RLC data blocks. The mobile station shall then stop timer T3166 and counter N3104.

At sending of the first RLC data block, the mobile station shall stop timer T3164, set counter N3104 to 1, and start timer T3166. Counter N3104 shall be stepped each time the mobile station sends an RLC data block.

42.1.2.1.8.1.1 Packet Uplink Assignment / One phase access / Contention resolution / Inclusion of TLLI in RLC data blocks

42.1.2.1.8.1.1.1 Conformance requirements

In order to uniquely identify the mobile station when sending on uplink, the RLC Header is extended to include the TLLI of the mobile station until contention resolution is completed on the mobile station side.

All the RLC data blocks of an uplink TBF initiated by one phase access shall each contain a TLLI field in the RLC data block header until the contention resolution is completed on the mobile station side. After the reaction time specified in GSM 05.10 no other RLC data blocks shall contain a TLLI field.

The TLLI_BLOCK_CHANNEL_CODING parameter in the PACKET UPLINK ASSIGNMENT message indicates whether a RLC data block containing a TLLI field in the RLC data block header shall be encoded using CS-1 or using the channel coding scheme commanded.

The mobile station shall send all other RLC data blocks using the channel coding scheme commanded.

Upon contention resolution during one phase access, the mobile station shall start transmitting RLC data blocks without the TLLI field no later than the next occurrence of block B((x+3) mod 12) where block B(x) is the radio block containing the contention resolution message.

Reference

GSM 04.60 subclause 7.1.2.3, subclause 8.1.1, GSM 05.10 subclause 6.11.3.

42.1.2.1.8.1.1.2 Test purpose

To verify that in one phase access the first RLC data blocks of an uplink TBF contain a TLLI field in the RLC data block header and that these blocks are encoded according to the TLLI_BLOCK_CHANNEL_CODING parameter specified in the PACKET UPLINK ASSIGNMENT message.

1. To verify that upon contention resolution during one phase access the RLC data blocks not contain a TLLI field and are encoded using the CHANNEL_CODING_COMMAND parameter included in the PACKET_UPLINK_ASSIGNMENT after the contention resolution reaction time.

42.1.2.1.8.1.2 Packet Uplink Assignment / One phase access / Contention resolution / Counter N3104

42.1.2.1.8.1.2.1 Conformance requirements

The contention resolution has failed on the mobile station side when the counter N3104 has reached its maximum value, or on expiry of timer T3166, or if the mobile station receives a PACKET UPLINK ACK/NACK message with the right TFI but with a another TLLI than the mobile station has included in the RLC header of the first RLC data blocks. 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.

Reference

GSM 04.60 subclause 7.1.2.3

42.1.2.1.8.1.2.2 Test purpose

To verify that the mobile station 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 * no-of-timeslots-assigned, where BS_CV_MAX is broadcast in PSI1.

42.1.2.1.8.1.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information BS_CV _MAX value = 1.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink packet data transfer.

Test procedure

The MS is triggered to initiate packet uplink transfer of an LLC PDU. The SS assigns packet uplink resources in a PACKET UPLINK ASSIGNMENT message indicating one phase packet access. The MS shall start transferring RLC data blocks.. The SS verifies that the MS stops transmitting and re-initiates the 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

5 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 500 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Indicating one phase packet access granted and CS-1. Sent on PAGCH.
4	MS -> SS	n RLC data blocks	SS receives n = N3104_MAX data blocks. Received on the assigned PDTCH.
5	SS		SS verifies that MS does not send further RLC data blocks.
6	MS -> SS	PACKET CHANNEL REQUEST	MS re-initiates packet access procedure. Received on PRACH.
7	SS -> MS	PACKET UPLINK ASSIGNMENT	Indicating one phase packet access granted. Sent on PAGCH.
8	MS -> SS	n-1 RLC data blocks	SS receives N3104_MAX – 1 data blocks. Received on the assigned PDTCH.
9	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
10		{Uplink data transfer, dynamic allocation}	Macro. Completion of the macro procedure.

Specific message contents

None.

42.1.2.1.8.1.3 Packet Uplink Assignment / One phase access / Contention resolution / Timer T3166

42.1.2.1.8.1.3.1 Conformance requirements

The contention resolution has failed on the mobile station side when the counter N3104 has reached its maximum value, or on expiry of timer T3166, or if the mobile station receives a PACKET UPLINK ACK/NACK message with the right TFI but with a another TLLI than the mobile station has included in the RLC header of the first RLC data blocks. 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.

Reference

GSM 04.60 subclause 7.1.2.3

42.1.2.1.8.1.3.2 Test purpose

To verify that the mobile station correctly considers timer T3166.

42.1.2.1.8.1.3.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access and BS_CV_MAX value = 15.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink packet data transfer.

Foreseen final state of the MS

Packet idle mode.

Test procedure

The MS is triggered to initiate packet uplink transfer of an LLC PDU. The SS assigns packet uplink resources in a PACKET UPLINK ASSIGNMENT message indicating one phase packet access. 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 re-initiates the packet access procedure.

At the second attempt, the SS sends PACKET UPLINK ACK/NACK before T3166 expire. 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 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 1000 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Indicating one phase packet access granted, CS-1 shall be used and USF_GRANULARITY = one block. Sent on PAGCH.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF addressing the MS. Sent on PACCH of PDCH assigned in step 3.
5	MS -> SS	RLC data block	Received on the assigned PDTCH.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
8	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
14	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
15	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
16	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF not addressing the MS. Sent on PACCH.
17	MS<->SS		Steps 4 to 16 are repeated at most 22 times or until MS does not send further RLC data blocks at step 5. Note: steps 4 to 16 transfer one block every 52 frames, or 240 ms. 22 repetitions require about 5.5 s. (Timer T3166 shall expire).
19	MS -> SS	PACKET CHANNEL REQUEST	MS re-initiates packet access procedure. Received on PRACH.
20	SS -> MS	PACKET UPLINK ASSIGNMENT	Indicating one phase packet access granted, CS-1 shall be used and USF_GRANULARITY = one block. Sent on PAGCH.
21	MS<->SS		Steps 4 to 16 are repeated 17 times. Note: 17 repetitions require about 4.3 s. (Timer T3166 should not expire).
22	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
23		{Uplink data transfer, dynamic allocation}	Macro. Completion of the TBF procedure.

42.1.2.1.8.1.4 Packet Uplink Assignment / One phase access / Contention resolution / TLLI mismatch

42.1.2.1.8.1.4.1 Conformance requirements

The contention resolution has failed on the mobile station side when the counter N3104 has reached its maximum value, or on expiry of timer T3166, or if the mobile station receives a PACKET UPLINK ACK/NACK message with the right TFI but with a another TLLI than the mobile station has included in the RLC header of the first RLC data blocks. 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.

Reference

GSM 04.60 subclause 7.1.2.3

42.1.2.1.8.1.4.2 Test purpose

To verify that the mobile station reinitiates packet access when it receives a PACKET UPLINK ACK/NACK message with the correct TFI but with a TLLI other than the mobile station has included in the RLC header.

42.1.2.1.8.1.4.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink packet data transfer.

Test procedure

The MS is triggered to initiate packet uplink transfer of an LLC PDU. The SS assigns packet uplink resources in a PACKET UPLINK ASSIGNMENT message indicating one phase packet access. The MS shall start transferring RLC data block after SS has assigned USF to the MS. The SS acknowledges the RLC block transfer with a PACKET UPLINK ACK/NACK including correct TFI and incorrect TLLI. The SS continue to assign USF to the MS. The SS shall verify that the MS immediately stops transmitting (see note below) and retries packet access procedure.

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

Note:

A mobile station, receiving a commanding message in block number N, shall take an “immediate” action as a result of the command, starting in any block from block number N+1 to N+6 (inclusive).

Maximum duration of the test

5 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 200 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Indicating one phase packet access granted, dynamic allocation struct and USF_GRANULARITY = one block. Sent on PAGCH.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Contained USF assigned to the MS.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
6	SS -> MS	PACKET UPLINK ACK/NACK	Assign USF to the MS, include correct TFI and incorrect TLLI. Sent on PACCH.
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Execute step 7 six times with USF assigned to the MS or until the MS sends Packet Channel request in step 8. The SS verifies that the MS does not transmit more than 6 uplink RLC data block after step 6 and before step 8.
8	MS -> SS	PACKET CHANNEL REQUEST	MS re-initiates packet access procedure. Received on PRACH.
9	SS -> MS	PACKET UPLINK ASSIGNMENT	Indicating one phase packet access granted, dynamic allocation struct and USF_GRANULARITY = one block. Sent on PAGCH.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Contained USF assigned to the MS.
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
12	SS -> MS	PACKET UPLINK ACK/NACK	Including correct TLLI. Sent on PACCH.
13		{Uplink data transfer, dynamic allocation}	Macro. Completion of the TBF procedure.

42.1.2.1.8.1.5 Packet Uplink Assignment / One phase access / Contention resolution / 4 access repetition attempts

42.1.2.1.8.1.5.1 Conformance requirement

The contention resolution has failed on the mobile station side when the counter N3104 has reached its maximum value, or on expiry of timer T3166, or if the mobile station receives a PACKET UPLINK ACK/NACK message with the right TFI but with a another TLLI than the mobile station has included in the RLC header of the first RLC data blocks.

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.

Reference

GSM 04.60 subclause 7.1.2.3

42.1.2.1.8.1.5.2 Test purpose

To verify that the mobile station repeats the packet access initiation 4 times.

42.1.2.1.8.1.5.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink packet data transfer.

Test procedure

The MS is triggered to initiate packet uplink transfer of an LLC PDU. The SS assigns packet uplink resources in a PACKET UPLINK ASSIGNMENT message indicating one phase packet access. The MS shall start transferring RLC data blocks after SS has assigned USF to the MS. 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. This test sequence shall be repeated four times.

Maximum duration of the test

5 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 200 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Indicating one phase packet access granted, dynamic allocation struct and USF_GRANULARITY = one block. Sent on PAGCH.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Contained USF assigned to the MS.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
6	SS -> MS	PACKET UPLINK ACK/NACK	Assign USF to the MS, include a incorrect TLLI. Sent on PACCH.
7	SS		The SS verifies that the MS reinitiates the packet access procedure from step 2 four times.

Specific message contents

None.

42.1.2.1.8.2 Packet Uplink Assignment / One phase access / Timing Advance

42.1.2.1.8.2.1 Packet Uplink Assignment / One phase access / Timing Advance / TA Index present

42.1.2.1.8.2.1.1 Conformance requirements

If a Timing Advance Index is included in the assignment message, the mobile station shall use the continuous update timing advance mechanism, using its allocation on PTCCH (see GSM 05.10).

Reference

GSM 04.60 subclause 7.1.2.5, GSM 03.64 subclause 6.5.7.2

42.1.2.1.8.2.1.2 Test purpose

To verify that the mobile station uses the continuous update timing advance mechanism and sends access bursts on the PTCCH slots as determined by the Timing Advance Index sent in the PACKET UPLINK ASSIGNMENT message.

42.1.2.1.8.2.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink packet data transfer.

Test procedure

The MS is triggered to initiate uplink data packet transfer. The SS responds with PACKET UPLINK ASSIGNMENT message indicating one phase access and containing a Timing Advance Index. The MS shall start to send data on the allocated uplink. The SS allows the MS to send the uplink data transfer. During the Uplink data transfer, the SS shall verify that the access bursts are sent correctly by the MS in the PTCCH.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 500 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Including Timing Advance Index = 0, Dynamic allocation struct. Sent on PAGCH.
4		{Uplink data transfer, dynamic allocation}	Macro. Completion from step 4 in the TBF procedure. Verification, see below.

Verification

During the uplink data transfer (step 4) the SS monitors the access burst on PTCCH which are located on slots with numbers FN, such that (FN mod (8*52)) = 12 for Timing Advance Index = 0 (GSM 03.64/6.5.7.2 and GSM 05.02/Table 6). The access burst contents shall be MESSAGE_TYPE = 011111 and CTRL_ACK = 11.

The test is repeated with an arbitrarily chosen Timing Advance Index in the range 1 to 15. SS shall verify that the access burst are sent in the correct idle slots as specified in GSM 05.02/Table 6.

Specific message contents

None.

42.1.2.1.8.2.2 Packet Uplink Assignment / One phase access / Timing Advance / TA Index not present

42.1.2.1.8.2.2.1 Conformance requirements

If a Timing Advance Index is included in the assignment message, the mobile station shall use the continuous update timing advance mechanism, using its allocation on PTCCH (see GSM 05.10). Otherwise, the continuous update timing advance mechanism shall not be used.

Reference

GSM 04.60 subclause 7.1.2.5.

42.1.2.1.8.2.2.2 Test purpose

To verify that the mobile station does not send any access bursts on the PTCCH if Timing Advance Index is not present in the PACKET UPLINK ASSIGNMENT message.

42.1.2.1.8.2.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink data transfer.

Test procedure

The MS is triggered to initiate uplink data transfer. The SS responds with PACKET UPLINK ASSIGNMENT message that request one phase access and not including a Timing Advance Index. The MS shall start to send data on the allocated uplink. The SS allows the MS to send the uplink data transfer. During the uplink data transfer, the SS shall verify that the MS not send any access bursts on PTCCH.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 500 octets data..
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Not include Timing Advance Index. Indicating Dynamic allocation struct. Sent on PAGCH.
4		{Uplink data transfer, dynamic allocation}	Macro. Completion from step 4 in the TBF procedure. Verification, see below.

Verification

The SS verifies that the MS does not transmit in idle frames during data block transfer (steps 4). Idle frame numbers are 12, 25, 38 and 51 in the 52-multiframe structure.

Specific message contents

None.

42.1.2.1.8.2.3 Packet Uplink Assignment / One phase access / Timing Advance / TA value field not provided

42.1.2.1.8.2.3.1 Conformance requirements

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

Reference

GSM 04.60 subclause 7.1.2.5.

42.1.2.1.8.2.2.2 Test purpose

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

42.1.2.1.8.2.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink data transfer.

Test procedure

The MS is triggered to initiate uplink data transfer. The SS responds with PACKET UPLINK ASSIGNMENT message that request one phase access and does not include Timing Advance Value field. The SS shall wait 2 seconds and then send a PACKET POWER CONTROL/TIMING ADVANCE message with a valid timing advance information. The MS shall start to send data on the allocated uplink. The SS allows the MS to send the uplink data transfer. The SS verifies that the MS not send any normal burst on the uplink until the SS sends a valid timing advance.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 500 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	No Timing Advance Value. Indicating Dynamic allocation struct. Sent on PAGCH.
4	SS		Wait 2 seconds and verifies that the MS not send any normal burst on the uplink.
5	SS -> MS	PACKET POWER CONTROL/TIMING ADVANCE	Include a valid Timing Advance information. Sent on PACCH.
6		{Uplink data transfer, dynamic allocation}	Macro. Completion of the TBF procedure.

Specific message contents

None.

42.1.2.1.9 Packet Uplink Assignment / Two phase access

42.1.2.1.9.1 Packet Uplink Assignment / Two phase access / Packet Resource Request / RLC Octet Count

42.1.2.1.9.1.1 Conformance requirements

The mobile station may request an open-ended or a close-ended TBF. If a close-ended TBF is requested, the number of octets of user data that the MS has to transfer in the TBF shall be indicated in the PACKET RESOURCE REQUEST message.

Reference

GSM 04.60 subclause 7.1.3.1

42.1.2.1.9.1.2 Test purpose

To verify that the mobile station indicates the number of octets of user data that it has to be transferred in the TBF.

42.1.2.1.9.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink data transfer.

Test procedure

The MS is triggered to initiate unacknowledged uplink data transfer. The SS shall send PACKET UPLINK ASSIGNMENT message including Single Block Allocation struct information to instruct the MS to send PACKET RESOURCE REQUEST. The MS should perform a two-phase access i.e. the MS shall transmit a PACKET RESOURCE REQUEST message on the allocated uplink resource.

The RLC_OCTET_COUNT field shall indicate the number of LLC data octets the MS wishes to transfer.

The SS should then respond with PACKET UPLINK ASSIGNMENT message and the MS should begin transmitting RLC data blocks on the allocated uplink resources. The SS allows the MS to complete the sending of the data.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate the transfer of 100 user data octets.
2	MS -> SS	PACKET CHANNEL REQUEST	Two Phase Access Request. Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block allocation struct. Sent on PAGCH.
4	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 3.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Dynamic allocation struct. Sent on the PACCH of the assigned PDCH.
6		{Uplink data transfer, dynamic allocation}	Macro. Completion from step 4 in the TBF procedure.
7	SS		The SS verifies that the MS has transferred the number of user data octets indicated in step 4 as RLC_OCTET_COUNT value.

Specific message contents

None.

42.1.2.1.9.2 Packet Uplink Assignment / Two phase access / Contention resolution

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

42.1.2.1.9.2.1.1 Conformance requirements

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

Reference

GSM 04.60 subclause 7.1.3.3

42.1.2.1.9.2.1.2 Test purpose

To verify that the mobile station reinitiates the packet access procedure after a time equal to timer T3168 and the procedure shall be repeated 4 times.

42.1.2.1.9.2.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. PSI GPRS Cell Options, T3168 = 7

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink data transfer.

Test procedure

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

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 200 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Two Phase Access Request. Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Single Block Allocation struct. Sent on PAGCH.
4	MS -> SS	PACKET RESOURCE REQUEST	ACCESS_TYPE = “Two Phase Access Request”. Received on the single block assigned in step 3.
5	SS		The SS waits T3168 expiry.
6			The SS verifies that the MS reinitiate packet access procedure four times.

Specific message contents

None.

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

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

42.1.2.1.9.2.2.1 Conformance requirements

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

Reference

GSM 04.60 subclause 7.1.4, subclause 7.1.3.3

42.1.2.1.9.2.2.2 Test purpose

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

42.1.2.1.9.2.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink data transfer.

Test procedure

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

This procedure shall be repeated 4 times.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 200 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Two Phase Access Request. Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Single Block Allocation struct. Sent on PAGCH.
4	MS -> SS	PACKET RESOURCE REQUEST	ACCESS_TYPE = “Two Phase Access Request”. Include TLLI. Received on the single block assigned in step 3.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Include incorrect TLLI according to step 4. Sent on the PACCH of the assigned PDCH.
6			The SS verifies that the MS reinitiate packet access procedure four times.

Specific message contents

None.

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

42.1.2.1.9.3.1 Conformance requirements

When the mobile station has received a PACKET UPLINK ASSIGNMENT message it shall respond with a PACKET RESOURCE REQUEST message in the allocated single radio block. At sending of the PACKET RESOURCE REQUEST message, the mobile station shall start timer T3168. Further more, the mobile station shall not respond to PACKET DOWNLINK ASSIGNMENT messages while timer T3168 is running.

Reference

GSM 04.60 subclause 7.1.3.1

42.1.2.1.9.3.2 Test purpose

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

42.1.2.1.9.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access, T3168 indicates value 7 in GPRS Cell Options.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink data transfer.

Test procedure

The MS is triggered to initiate unacknowledged uplink data transfer. The SS shall send PACKET UPLINK ASSIGNMENT message including Single Block Allocation struct information to instruct the MS to send PACKET RESOURCE REQUEST. The MS should perform a two-phase access i.e. the MS shall transmit a PACKET RESOURCE REQUEST message on the allocated uplink resource.

While timer T3186 is running the SS send PACKET DOWNLINK ASSIGNMENT message and starts to send data on the allocated downlink before the timer expire. The MS shall not respond to the Downlink data transfer.

The SS should then send PACKET UPLINK ASSIGNMENT message before the timer T3186 expire and the MS should then begin transmitting RLC data blocks on the allocated uplink resources. The SS allows the MS to complete the sending of the data.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU containing 400 octets of data.
2	MS -> SS	PACKET CHANNEL REQUEST	Two Phase Access Request. Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block allocation struct. Sent on PAGCH.
4	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 3.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH.
6	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on the assigned PDTCH with poll bit set to 1.
	SS		Verify no response from the MS.
7	SS -> MS	PACKET UPLINK ASSIGNMENT	Dynamic allocation struct. Sent on the PACCH of the assigned PDCH 0,9* T3186.
8		{Uplink data transfer, dynamic allocation}	Macro. Completion from step 4 in the TBF procedure.

Specific message contents

None.

42.1.2.1.10 Packet Uplink Assignment / Abnormal cases

42.1.2.1.10.1 Packet Uplink Assignment / Abnormal cases / Incorrect PDCH assignment

42.1.2.1.10.1.1 Conformance requirements

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

Reference

GSM 04.60 subclause 7.1.4

42.1.2.1.10.1.2 Test purpose

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

42.1.2.1.10.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

The MS is switched off.

Related PICS/PIXIT statement

Support GPRS service.

Switch off on button Yes/No.

Multislot class.

Method of trigger GPRS attach.

Test procedure

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

The MS is switched on and triggered to perform a GPRS attach. The SS sends PACKET UPLINK ASSIGNMENT message containing more assigned PDCHs than the MS supports according to its multislot class. The MS shall reinitiate packet access procedure; this procedure shall be repeated 4 times.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is switched on and triggered to perform a GPRS attach.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign one more Tx than the MS supported . Sent on PAGCH.
4			The SS verifies that the MS reinitiate packet access procedure four times.

Specific message contents

None.

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

42.1.2.1.10.2.1 Conformance requirements

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

Reference

GSM 04.60 subclause 7.1.4

42.1.2.1.10.2.2 Test purpose

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

42.1.2.1.10.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Support PDP context.

Method of triggering the MS to initiate an uplink data transfer.

Test procedure

The MS is triggered to initiate uplink data transfer. The SS sends PACKET UPLINK ASSIGNMENT message with a USF assigned to the MS. The SS shall send PACKET DOWNLINK DUMMY CONTROL BLOCK messages with USF not assigned to the MS. The SS verifies that the MS reinitiate packet access procedure after a time equal to timer T3164; this shall be repeated 3 times.

Maximum duration of the test

1 min.

Expected sequence

Step	Direction	Message	Comments
1	MS		The MS is triggered to initiate packet uplink transfer of an LLC PDU consisting of 200 octets data.
2	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Allocate a USF for the MS. Sent on PAGCH.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCKs	Don't contain the assigned USF in step 3. Repeat step 4 during timer T3164 is running.
5	MS		The SS verifies that the packet access procedure is reinitiated after a time equal to timer T3164 four times.

Specific message contents

None.

42.1.2.2 Packet Downlink Assignment

42.1.2.2.1 Packet Downlink Assignment / Response to poll bit

42.1.2.2.1.1 Conformance requirements

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

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

Reference

GSM 04.60 subclause 7.2.1.1

42.1.2.2.1.2 Test purpose

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

42.1.2.2.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information CONTROL_ACK_TYPE is set to indicate PACKET CONTROL ACKNOWLEGEMENT format as four access bursts and the ACCESS_BURST_TYPE indicates 11 bit access.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Test procedure

The SS initiate a downlink data transfer. The SS sends PACKET DOWNLINK ASSIGNMENT message. The poll bit in the MAC header of the PACKET DOWNLINK ASSIGNMENT message will be set to indicate RRBP field is valid. The SS verifies that the MS sends PACKET CONTROL ACKNOWLEDGEMENT as four access bursts.

Maximum duration of the test

2 min.

Expected sequence

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

Specific message contents

None.

42.1.2.2.2 Packet Downlink Assignment / PCCCH monitoring

42.1.2.2.2.1 Conformance requirements

A PACKET DOWNLINK ASSIGNMENT message may indicate an assignment starting time in the TBF Starting Time parameter. The mobile station shall monitor PCCCH until the point in time denoted by the TBF Starting Time. Thereafter it shall switch to the assigned PDCHs. If while monitoring the PCCCH the mobile station receives more than one PACKET DOWNLINK ASSIGNMENT message, it shall act upon the most recently received message and shall ignore the previous message.

Reference

GSM 04.60 subclause 7.2.1.1

42.1.2.2.2.2 Test purpose

To verify that the mobile station monitors PCCCH until the point in time denoted by the TBF Starting Time.

To verify that the mobile station considers the most recently received PACKET DOWNLINK ASSIGNMENT message.

42.1.2.2.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

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

Related PICS/PIXIT statement

Support of GPRS Yes/No.

Test procedure

The SS initiate a downlink data transfer. The SS sends PACKET DOWNLINK ASSIGNMENT message to the MS with a TBF starting time. Then send a new PACKET DOWNLINK ASSIGNMENT message on PCCCH with another TBF starting time and a different timeslot before the first starting time has occurred. The SS starts to send RLC/MAC data blocks according to the second PACKET DOWNLINK ASSIGNMENT message. The MS shall send PACKET DOWNLINK ACK/NACK message to indicate correct reception of data blocks.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	SS		The SS initiate a downlink transfer of 200 octets data.
2	SS -> MS	PACKET DOWNLINK ASSIGNMENT	See specific message contents. Sent on PCCCH.
3	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent 3 blocks before TBF starting time in step 2 has elapsed. See specific message contents. Sent on PCCCH.
4	SS -> MS	DOWNLINK RLC DATA BLOCK	SS sends data starting at frame as indicated by TBF starting time in step 3 on assigned PDTCH.
5	MS -> SS	PACKET DOWNLINK ACK/NACK	Indicating correct reception of downlink data block. Received on PACCH.

Specific message contents

As default messages contents, except:

PACKET DOWNLINK ASSIGNMENT in step 2

Information element	Value/remark
< TIMESLOT_ALLOCATION >	00010000, allocate timeslot 3.
{0|1< TBF Starting Time >	1
-TBF_STARTING_TIME}	arbitrarily chosen

PACKET DOWNLINK ASSIGNMENT in step 3

Information element	Value/remark
< TIMESLOT_ALLOCATION >	00000010, allocate timeslot 6.
{0|1< TBF Starting Time >	1
-TBF_STARTING_TIME}	arbitrarily chosen different from step 2

42.1.2.2.3 Packet Downlink Assignment / Frequency hopping

42.1.2.2.3.1 Conformance requirements

The mobile station shall use information received on the PBCCH to decode the channel descriptions contained in the assignment. If frequency hopping is applied, the mobile station shall use the last CA received on PBCCH to decode the Mobile Allocation.

Reference

GSM 04.60 subclause 7.2.1.1

42.1.2.2.3.2 Test purpose

To verify that, if frequency hopping is applied, the mobile station uses the last CA received on PBCCH to decode the Mobile Allocation.

To verify that, if frequency hopping is applied, indirect encoding, direct encoding 1 and direct encoding 2 worked as intend together with the information received on PBCCH.

42.1.2.2.3.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. PACKET SYSTEM INFORMATION Type 2 (PSI2) sent on PBCCH indicate frequency hopping parameters, see specific message contents.

Mobile Station:

The MS is GPRS attached and in packet idle mode.

Related PICS/PIXIT statement

Support GPRS service.

Test procedure

The SS initiate a downlink data transfer. The SS send PACKET DOWNLINK ASSIGNMENT message indicating indirect encoding in frequency parameters. The SS shall start to transmit the downlink data to the MS. The MS and SS complete the downlink data transfer. The SS verifies that the MS use the last CA information received on PBCCH to decode the Mobile Allocation. Repeat the test with frequency parameters Direct encoding 1 and Direct encoding 2.

Maximum duration of the test

5 min

Expected sequence

Step	Direction	Message	Comments
1	SS		Wait until MS has read initial PSI2.
2	SS -> MS	PACKET SYSTEM INFORMATION Type 2	Change Reference Frequency List, CA and MA see specific message contents.
3	SS		Wait 35 seconds.
4	SS		The SS initiate a downlink transfer of 200 octets data.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	See specific message contents. Sent on PCCCH.
6	SS -> MS	DOWNLINK RLC DATA BLOCKs	Sent on assigned PDTCHs.
7	MS -> SS	PACKET DOWNLINK ACK/NACK	The SS verifies that the MS use the last CA information received on PBCCH. Received on PACCH.
8			Repeat step 6 to 7 five times.
9	SS -> MS	PACKET PDCH RELEASE	

Repeat the test with frequency parameters Direct encoding 1 and Direct encoding 2.

Specific message contents

As default messages contents, except:

PACKET SYSTEM INFORMATION Type 2 in initial condition

Information element	Value/remark
< PSI2_CHANGE_MARK >	00
< PCCCH Description List struct >	
< TSC >	value arbitrarily chosen from valid values (default 5)
{0|1< Hopping PCCCH carriers >	1
< MA_NUMBER	0001 (list 1)
< Hopping PCCCH carriers struct >	
< Hopping PCCCH carriers struct >	
< MAIO >	arbitrarily chosen
< TIMESLOT_ALLOCATION	00001000 (timeslot 4)

PACKET SYSTEM INFORMATION Type 2 in step 2

Information element	Value/remark
< PSI2_CHANGE_MARK >	01
{0|1< Reference Frequency Lists>	1 Reference Frequency lists present
-RFL_NUMBER	0010 List 2
-Length of RFL contents	1111 IE length = 16
-RFL contents}	For GSM900, in bit map 0, (10, 25, 40, 55, 70, 85, 100) For DCS1800, in bit map 0, (740, 755, 770, 785, 800, 810, 825)
{0|1<Cell Allocation>	1 Cell Allocation present
-RFL_NUMBER	0010 List 2
-{0|1<Cell Allocation>}}	0 No Further Cell Allocation present
{0|1<GPRS Mobile Allocations>	1 GPRS Mobile Allocation present
-MA_NUMBER	0010 List 2
-HSN	000000 Sequence 0
-{0|1<RFL number list>}	1 Number list present
-RFL_NUMBER	0010 List 2
-{0	0
-MA_LENGTH	000111 7 octets
-MA_BITMAP}	1010101 4 belonging

42.1.2.2.4 Packet Downlink Assignment / Response to Packet Polling

42.1.2.2.4.1 Conformance requirements

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

- if the PACKET DOWNLINK ASSIGNMENT message is not segmented and the CONTROL_ACK_TYPE parameter in the System Information indicates acknowledgement is access bursts, the network may set the poll bit in the PACKET DOWNLINK ASSIGNMENT message.

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

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

Reference

GSM 04.60 subclause 7.2.1.3 and subclause 7.2.1.1

42.1.2.2.4.2 Test purpose

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

42.1.2.2.4.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information CONTROL_ACK_TYPE is set to not indicate acknowledgement as four access bursts and ACCESS_BURST_TYPE indicate 8 bit access.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Test procedure

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

Maximum duration of the test

5 min.

Expected sequence

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

Specific message contents

As default messages contents, except:

PACKET DOWNLINK ASSIGNMENT in step 2

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

PACKET DOWNLINK ASSIGNMENT in step 8

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

PACKET POLLING REQUEST in step 3 and 9

Information element	Value/remark
RRBP in MAC header S/P in MAC header	Set to 1 Set to 1 : RRBP field is valid
< MESSAGE_TYPE > < PAGE_MODE { 0 < **Global TFI >** | 10 < **TLLI >** | 110 < **TQI** >} **< TYPE_OF_ACK >**	000100 Normal Paging 10 (TLLI) 0 as four access bursts

42.1.2.2.5 Packet Downlink Assignment / Abnormal cases

42.1.2.2.5.1 Packet Downlink Assignment / Abnormal cases / Incorrect PDCH assignment

42.1.2.2.5.1.1 Conformance requirements

If the mobile station has been assigned more PDCHs than it supports according to its MS multislot class, the mobile station shall return to packet idle mode.

Reference

GSM 04.60 subclause 7.2.2

42.1.2.2.5.1.2 Test purpose

To verify that the mobile station return to packet idle mode if the mobile station is assigned more PDCHs than it supports according to its MS multislot class.

42.1.2.2.5.1.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Multislot Class.

Test procedure

Convert MS Multislot Class to number of downlink timeslot supported.

The SS initiated a downlink data transfer. The SS sends PACKET DOWNLINK ASSIGNMENT message containing one more assigned Rx than the MS supports according to its multislot class. The SS sends RLC data blocks. The SS verify that the MS not respond to the RLC data blocks sent by SS. Verify that the MS return to packet idle mode.

The SS sends PACKET DOWNLINK ASSIGNMENT message again containing correct multislot class. The SS starts to send RLC data blocks and the MS complete the downlink data transfer.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	SS		The SS initiate a downlink transfer of 200 octets data.
2	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Assign one more Rx timeslot than the MS support. Sent on PCCCH.
3	SS		Wait one block period.
4	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on assigned PDTCHs.
5	SS		Verify for 10 seconds that the MS not respond.
6	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Assign Rx timeslot according to the MS multislot class. Sent on PCCCH.
7	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on assigned PDTCHs with a valid RRBP field.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	The SS verifies that the MS indicating correct reception of downlink data blocks. Received on PACCH.

Specific message contents

None.

42.1.2.2.5.2 Packet Downlink Assignment / Abnormal cases / Expiry of timer T3190

42.1.2.2.5.2.1 Conformance requirements

When receiving the PACKET DOWNLINK ASSIGNMENT message and after waiting the TBF Starting Time when applicable, the mobile station starts timer T3190. The timer is reset when receiving the first valid RLC/MAC block.

On expiry of timer T3190, the mobile station shall return to packet idle mode.

Reference

GSM 04.60 subclause 7.2.1.1 and subclause 7.2.2.

42.1.2.2.5.2.2 Test purpose

To verify that the mobile station aborts the TBF and returns to packet idle mode if a valid RLC block is not received within the duration of timer T3190.

42.1.2.2.5.2.3 Method of test

Initial conditions

System Simulator:

1 cell supporting GPRS. The packet system information ACCESS_BURST_TYPE indicates 8 bit access.

Mobile Station:

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

Related PICS/PIXIT statement

Support GPRS service.

Test procedure

The SS initiate a downlink data transfer. The SS sends PACKET DOWNLINK ASSIGNMENT message to the MS. The SS wait to send RLC data blocks for a time greater than timer T3190. The SS verifies that the MS not respond to the RLC data blocks sent by SS.

The SS reinitiate the sending of downlink data transfer. The SS sends PACKET DOWNLINK ASSIGNMENT message again and starts to send RLC data blocks after a time less than timer T3190. The MS shall complete the downlink data transfer.

Maximum duration of the test

2 min.

Expected sequence

Step	Direction	Message	Comments
1	SS		The SS initiate a downlink transfer of 200 octets data.
2	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Not indicating any TBF Starting Time. Sent on PCCCH.
3	SS		The SS waits timer T3190 + 0.1*T3190.
4	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on assigned PDTCHs.
5	SS		Verify for 10 seconds that the MS not respond.
6	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Reinitiate the downlink data transfer. Sent on PCCCH.
7	SS		The SS waits timer T3190 – 0.1*T3190.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on assigned PDTCHs with a valid RRBP field.
9	MS -> SS	PACKET DOWNLINK ACK/NACK	Indicating correct reception of downlink data blocks. SS verifies that ACK/NACK is sent from the MS.

Specific message contents

None.

42.1.3 Macro and default message contents

42.1.3.1 Macro

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. This Macro is only applicable to test case in clause 42.1.1 and 42.1.2.

42.1.3.1.1 GPRS attach procedure

The following table describes a signaling sequence performing the GPRS attach procedure when PCCCH is present. Note that there are different possible sequences implementing the GPRS attach procedure. In this case we use dynamic allocation and simultaneous uplink and downlink TBFs.

{GPRS attach procedure}

Step	Direction	Message	Comments
1			MS is triggered to initiate the GPRS attach procedure.
2	MS -> SS	PACKET CHANNEL REQUEST	Mobility Management procedure request.
3	SS -> MS	PACKET UPLINK ASSIGNMENT	Indicate dynamic allocation struct.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Containing USF assigned to the MS.
5	MS -> SS	UPLINK RLC DATA BLOCKs (GMM ATTACH REQUEST)	
6	SS -> MS	PACKET UPLINK ACK/NACK	Containing Final Ack Indicator bit = 1, and valid RRBP field.
7	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Sent in the block assigned by the RRBP field in step 6.
8	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Assign a downlink TBF, “MAC mode” = dynamic allocation.
9	SS -> MS	DOWNLINK RLC DATA BLOCKs (GMM ATTACH ACCEPT)	Containing USF assigned to the MS. Last block shall contain Final Block Indicator bit = 1, and valid RRBP field.
10	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent in the block assigned by the RRBP field in step 9.
11	MS -> SS	PACKET CHANNEL REQUEST	Mobility Management procedure request.
12	SS -> MS	PACKET UPLINK ASSIGNMENT	Indicate dynamic allocation struct.
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Containing USF assigned to the MS.
14	MS -> SS	UPLINK RLC DATA BLOCKs (GMM ATTACH COMPLETE)	
15	SS -> MS	PACKET UPLINK ACK/NACK	Containing Final Ack Indicator bit = 1, and valid RRBP field.
16	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Sent in the block assigned by the RRBP field in step 15.

42.1.3.1.2 Uplink data transfer, dynamic allocation

The following table describes a sequence performing uplink data transfer with one phase access dynamic allocation when PCCCH is present.

{Uplink data transfer, dynamic allocation}

Step	Direction	Message	Comments
1			PDP context 2 has been established. The MS is triggered to send data.
2	MS -> SS	PACKET CHANNEL REQUEST	
3	SS -> MS	PACKET UPLINK ASSIGNMENT	One phase access, dynamic allocation struct.
4	SS -> MS	PACKET DOWLINK DUMMY CONTROL BLOCK	Containing USF assigned to the MS.
5	MS -> SS	UPLINK RLC DATA BLOCK(S)	If USF_GRANULARITY = four blocks, 4 RLC data block will be sent.
6	SS -> MS	PACKET UPLINK ACK/NACK	Containing USF assigned to the MS.
7	MS -> SS	UPLINK RLC DATA BLOCK(S)	If USF_GRANULARITY = four blocks, 4 RLC data block will be sent.
8			Repeat step 6 and 7 until the countdown value CV=0 in step 7 .
9	SS -> MS	PACKET UPLINK ACK/NACK	Final Ack Indicator = 1 containing valid RRBP.
10	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	

42.1.3.2 Default Messages

These default message contents override those specified in “GPRS default conditions” but messages specified in a test case have always the highest precedence.

42.1.3.2.1 PACKET CHANNEL REQUEST message:

< Access Type >	"One phase access request" or "Two phase access request"
< Multislot class >	Not checked
< Radio priority >	Not checked
< Random Reference >	Not checked.

42.1.3.2.2 PACKET CONTROL ACKNOWLEDGEMENT message:

< MESSAGE_TYPE >	000001
< TLLI >	not checked
< CTRL_ACK >	not checked
< padding bits >	Spare Padding

42.1.3.2.3 PACKET DOWNLINK ACK/NACK message:

< MESSAGE_TYPE >	000010
< DOWNLINK_TFI >	pertaining to the downlink TBF
< Ack/Nack Description >	
< FINAL_ACK_INDICATION >	0 (not final ack)
< STARTING_SEQUENCE_NUMBER >	not checked
< RECEIVED_BLOCK_BITMAP >	not checked
{0|1 < Channel Request Description >}	0 (no channel request)
< Channel Quality Report >	
< C_VALUE >	not checked
< RXQUAL >	not checked
< SIGN_VAR >	not checked
{0|1<I_LEVEL_TN0>}	not checked
{0|1<I_LEVEL_TN1>}	not checked
{0|1<I_LEVEL_TN2>}	not checked
{0|1<I_LEVEL_TN3>}	not checked
{0|1<I_LEVEL_TN4>}	not checked
{0|1<I_LEVEL_TN5>}	not checked
{0|1<I_LEVEL_TN6>}	not checked
{0|1<I_LEVEL_TN7>}	not checked
< padding bits >	Spare Padding

42.1.3.2.4 PACKET DOWNLINK ASSIGNMET message:

<table>
<tr><td>< MESSAGE_TYPE ></td><td>000010</td></tr>
<tr><td>< PAGE_MODE ></td><td>Normal Paging</td></tr>
<tr><td>{0|1< PERSISTENCE_LEVEL >}</td><td>0 (no persistence level present)</td></tr>
<tr><td>{ {0 < Global TFI</td><td>10 (address is TLLI)</td></tr>
<tr><td>|10 < TLLI >}</td><td>same as the value received from MS</td></tr>
<tr><td>< MAC_MODE</td><td>Dynamic Allocation</td></tr>
<tr><td>< RLC_MODE</td><td>acknowledged mode</td></tr>
<tr><td>< CONTROL_ACK</td><td>0</td></tr>
<tr><td>< TIMESLOT_ALLOCATION</td><td>single slot arbitrarily chosen from valid values (default slot 2)</td></tr>
<tr><td>< Packet Timing Advance ></td><td></td></tr>
<tr><td>{0|1< TIMING_ADVANCE_VALUE >}</td><td>1 (timing advance value)</td></tr>
<tr><td>- TIMING_ADVANCE_VALUE</td><td>30 bit periods</td></tr>
<tr><td>{0|1<DOWNLINK_TIMING_ADVANCE_INDEX></td><td>0 (no timing advance index)</td></tr>
<tr><td>{0|1 < P0 ></td><td>0 (no power control parameter)</td></tr>
<tr><td>{0|1< Frequency Parameters >}</td><td>1 (Frequency Parameters present)</td></tr>
<tr><td>< TSC ></td><td>value arbitrarily chosen from valid values (default 5)</td></tr>
<tr><td>{ 00 < ARFCN >}</td><td>00 (ARFCN no hopping)</td></tr>
<tr><td>- ARFCN</td><td>For GSM 900, 30
For DCS 1800, 650</td></tr>
<tr><td>{0|1< DOWNLINK_TFI_ASSIGNMENT >}</td><td>1 (assign downlink TFI)</td></tr>
<tr><td>< DOWNLINK_TFI_ASSIGNMENT ></td><td>arbitrarily chosen from valid values (default 3)</td></tr>
<tr><td>{0|1< Power Control Parameters >}</td><td>1 (Power Control Parameters present)</td></tr>
<tr><td>< ALPHA ></td><td>0.5</td></tr>
<tr><td>{0|1< GAMMA_TN0 >}</td><td>depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN0)</td></tr>
<tr><td>{0|1< GAMMA_TN1 >}</td><td>depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN1)</td></tr>
<tr><td>{0|1< GAMMA_TN2 >}</td><td>depending on the value in TIMESLOT_ALLOCATION (default 1 GAMMA_TN2)</td></tr>
<tr><td>- GAMMA_TN2</td><td>For GSM 900, +9 dBm
For DCS 1800, +6 dBm</td></tr>
<tr><td>{0|1< GAMMA_TN3 >}</td><td>depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN0)</td></tr>
<tr><td>{0|1< GAMMA_TN4 >}</td><td>depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN4)</td></tr>
<tr><td>{0|1< GAMMA_TN5 >}</td><td>depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN5)</td></tr>
<tr><td>{0|1< GAMMA_TN6 >}</td><td>depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN6)</td></tr>
<tr><td>{0|1< GAMMA_TN7 >}</td><td>depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN7)</td></tr>
<tr><td>{0|1< TBF_STARTING_TIME >}</td><td>0 (no starting time present)</td></tr>
<tr><td>{0|1< Measurement Mapping >}</td><td>0 (no measurement mapping)</td></tr>
<tr><td>< padding bits ></td><td>Spare Padding</td></tr>
</table>

42.1.3.2.5 PACKET PAGING REQUEST message:

<table>
<tr><td>< MESSAGE_TYPE ></td><td>100010</td></tr>
<tr><td>< PAGE_MODE ></td><td>00 (Normal Paging)</td></tr>
<tr><td>{0|1< PERSISTENCE_LEVEL >}</td><td>0 (no persistence level present)</td></tr>
<tr><td>{0|1< NLN >}</td><td>0 (no notification list number)</td></tr>
<tr><td>{1|< Repeated Page info>}</td><td>1 (start of Repeated Page info)</td></tr>
<tr><td>{0</td><td>0 (Page request for TBF establishment)</td></tr>
<tr><td>{0< PTMSI ></td><td>0 (PTMSI)</td></tr>
<tr><td>- PTMSI</td><td>P-TMSI allocated during GPRS attach procedure</td></tr>
<tr><td>< padding bits ></td><td>Spare Padding</td></tr>
</table>

42.1.3.2.6 PACKET RESOURCE REQUEST message (two phase access):

< MESSAGE_TYPE >	000101
{0|1< ACCESS_TYPE >}	1 (response to single block assignment)
- ACCESS_TYPE	00 (two phase access)
{0< Global TFI >	1 (TLLI)
|1 < TLLI >}	
- TLLI	not checked
{0|1< MS Radio Access Capability >}	1 (MS Radio Access Capability)
- MS Radio Access Capability	not checked
< Channel Request Description >	
- PEAK_THROUGHPUT_CLASS	not checked
- RADIO_PRIORITY	not checked
- RLC_MODE	not checked
- LLC_PDU_TYPE	1 (not SACK or ACK)
- RLC_OCTET_COUNT	not checked
{0|1< CHANGE_MARK >}	not checked
< C_VALUE >	not checked
{0|1< SIGN_VAR >	not checked
{0|1< I_LEVEL_TN0 >}	not checked
{0|1< I_LEVEL_TN1 >}	not checked
{0|1< I_LEVEL_TN2 >}	not checked
{0|1< I_LEVEL_TN3 >}	not checked
{0|1< I_LEVEL_TN4 >}	not checked
{0|1< I_LEVEL_TN5 >}	not checked
{0|1< I_LEVEL_TN6 >}	not checked
{0|1< I_LEVEL_TN7 >}	not checked
< padding bits >	Spare Padding

42.1.3.2.7 PACKET UPLINK ACK/NACK message:

< MESSAGE_TYPE >	001001
< UPLINK_TFI >	same as the TFI value of the TBF which the message applies
< CHANNEL_CODING_COMMAND >	same as the coding scheme of the TBF which the message applies
< Ack/Nack Description >	
< FINAL_ACK_INDICATION >	0 (not a final ACK)
< STARTING_SEQUENCE_NUMBER >	V(R)
< RECEIVED_BLOCK_BITMAP >	acknowledges all data blocks transmitted by the MS
{0|1< CONTENTION_RESOLUTION_TLLI >}	0 (no contention resolution TLLI)
{0|1< Packet Timing Advance >}	0 (no packet timing advance)
{0|1< Power Control Parameters >}	0 (no power control parameters)
{0|1< Fixed Allocation parameters >}	0 (no fixed allocation parameters present)
< padding bits >	Spare Padding

42.1.3.2.8 PACKET UPLINK ASSIGNMENT message (dynamic allocation)

<table>
<tr><td>< MESSAGE_TYPE ></td><td>001010</td></tr>
<tr><td>< PAGE_MODE ></td><td>Normal Paging</td></tr>
<tr><td>{0|1< PERSISTENCE_LEVEL ></td><td>0 (no persistence level present)</td></tr>
<tr><td>Referenced Address struct</td><td></td></tr>
<tr><td>{ 0 < Global TFI ></td><td></td></tr>
<tr><td>| 10 < TLLI ></td><td>10 (TLLI, the value received from the MS)</td></tr>
<tr><td>| 110 < TQI ></td><td></td></tr>
<tr><td>| 111 <Packet Request Reference >}</td><td></td></tr>
<tr><td>< CHANNEL_CODING_COMMAND ></td><td>arbitrarily chosen from the valid values (default CS-1)</td></tr>
<tr><td>< TLLI_BLOCK_CHANNEL_CODING ></td><td>arbitrarily chosen but different from CHANNEL_CODING_COMMAND</td></tr>
<tr><td>< Packet Timing Advance ></td><td></td></tr>
<tr><td>{ 0|1< TIMING_ADVANCE_VALUE ></td><td>1 (timing advance value)</td></tr>
<tr><td>- TIMING_ADVANCE_VALUE }</td><td>30 bit periods</td></tr>
<tr><td>{ 0|1< TIMING_ADVANCE_INDEX ></td><td>0 (no timing advance index)</td></tr>
<tr><td><TIMING_ADVANCE_TIMESLOT_NUMBER > }</td><td></td></tr>
<tr><td>{0|1< Frequency Parameters ></td><td>1 (Frequency Parameters present)</td></tr>
<tr><td>< TSC ></td><td>arbitrarily chosen (default 5)</td></tr>
<tr><td>{ 00< ARFCN >}</td><td>00 (ARFCN no hopping)</td></tr>
<tr><td>- ARFCN }</td><td>For GSM 900, 30
For DCS 1800, 650</td></tr>
<tr><td>{ 01 < Dynamic Allocation ></td><td>01 (Dynamic allocation)</td></tr>
<tr><td>< Extended Dynamic Allocation ></td><td>0 (Dynamic allocation)</td></tr>
<tr><td>{ 0|1< P0 ></td><td>1</td></tr>
<tr><td>-P0</td><td>0 dB</td></tr>
<tr><td>< PR_MODE : bit (1) > }</td><td>0 (PR mode A)</td></tr>
<tr><td>< USF_GRANULARITY ></td><td>0 (one block)</td></tr>
<tr><td>{0|1< UPLINK_TFI_ASSIGNMENT ></td><td>1 (uplink TFI assignment)</td></tr>
<tr><td>- UPLINK_TFI_ASSIGNMENT }</td><td>arbitrarily chosen (default 00101)</td></tr>
<tr><td>{0|1< RLC_DATA_BLOCKS_GRANTED >}</td><td>0 (no RLC_DATA_BLOCKS_GRANTED, open-ended TBF)</td></tr>
<tr><td>{0|1< TBF_STARTING_TIME >}</td><td>0 (no starting time)</td></tr>
<tr><td>{0|1< Timeslot Allocation ></td><td>1 (Timeslot Allocation with Power Control Parameters) one slot arbitrarily chosen and the following USF_TNx and GAMMA_TNx shall be corresponding to the chosen value (default slot 2)</td></tr>
<tr><td>< ALPHA ></td><td>0.5</td></tr>
<tr><td>{0|1< USF_TN0><GAMMA_TN0 >}</td><td>0 (timeslot 0 not assigned)</td></tr>
<tr><td>{0|1< USF_TN1><GAMMA_TN1 >}</td><td>0 (timeslot 1 not assigned)</td></tr>
<tr><td>{0|1< USF_TN2><GAMMA_TN2 ></td><td>1 (timeslot 2 assigned)</td></tr>
<tr><td>- USF_TN2</td><td>arbitrarily chosen (default 101)</td></tr>
<tr><td>- GAMMA_TN2 }</td><td>For GSM 900, +9 dBm
For DCS 1800, +6 dBm</td></tr>
<tr><td>{0|1< USF_TN3><GAMMA_TN3 >}</td><td>0 (timeslot 3 not assigned)</td></tr>
<tr><td>{0|1< USF_TN4><GAMMA_TN4 >}</td><td>0 (timeslot 4 not assigned)</td></tr>
<tr><td>{0|1< USF_TN5><GAMMA_TN5 >}</td><td>0 (timeslot 5 not assigned)</td></tr>
<tr><td>{0|1< USF_TN6><GAMMA_TN6 >}</td><td>0 (timeslot 6 not assigned)</td></tr>
<tr><td>{0|1< USF_TN7><GAMMA_TN7>}}</td><td>0 (timeslot 7 not assigned)</td></tr>
<tr><td>< padding bits ></td><td>Spare Padding</td></tr>
</table>

42.1.3.2.9 PACKET UPLINK ASSIGNMENT message (fixed allocation)

<table>
<tr><td>< MESSAGE_TYPE ></td><td>001010</td></tr>
<tr><td>< PAGE_MODE ></td><td>Normal Paging</td></tr>
<tr><td>{0|1< PERSISTENCE_LEVEL ></td><td>0 (no persistence level present)</td></tr>
<tr><td>Referenced Address struct
{ 0 < Global TFI >
| 10 < TLLI >
| 110 < TQI ></td><td></td></tr>
<tr><td>| 111 <Packet Request Reference >}</td><td>111 (Packet Request Reference, information field sent in PACKET CHANNEL REQUEST and frame number in which PACKET CHANNEL REQUEST was received</td></tr>
<tr><td>< CHANNEL_CODING_COMMAND ></td><td>00 (CS-1 coding)</td></tr>
<tr><td>< TLLI_BLOCK_CHANNEL_CODING ></td><td>0 (CS-1)</td></tr>
<tr><td>< Packet Timing Advance ></td><td></td></tr>
<tr><td>{0|1< TIMING_ADVANCE_VALUE ></td><td>1 (timing advance value)</td></tr>
<tr><td>- TIMING_ADVANCE_VALUE}</td><td>30 bit periods</td></tr>
<tr><td>{0|1<TIMING_ADVANCE_INDEX>
<TIMING_ADVANCE_TIMESLOT_NUMBER >}</td><td>0 (no timing advance index)</td></tr>
<tr><td>{0|1< Frequency Parameters ></td><td>1 (Frequency Parameters present)</td></tr>
<tr><td>< TSC ></td><td>arbitrarily chosen (default 5)</td></tr>
<tr><td>{ 00< ARFCN >}</td><td>00 (ARFCN no hopping)</td></tr>
<tr><td>- ARFCN }</td><td>For GSM 900, 30
For DCS 1800, 650</td></tr>
<tr><td>{ 11 < Fixed Allocation ></td><td>11 (Fixed allocation)</td></tr>
<tr><td>{0|1< UPLINK_TFI_ASSIGNMENT >}</td><td>1</td></tr>
<tr><td>-UPLINK_TFI_ASSIGNMENT</td><td>arbitrarily chosen</td></tr>
<tr><td>< FINAL_ALLOCATION ></td><td>Final allocation</td></tr>
<tr><td>< DOWNLINK_CONTROL_TIMESLOT ></td><td>arbitrarily chosen (default 2)</td></tr>
<tr><td>{ 0|1</td><td>1</td></tr>
<tr><td>< P0 ></td><td>0 dB</td></tr>
<tr><td>< BTS_PWR_CTRL_MODE >}</td><td>0 (mode A)</td></tr>
<tr><td>< PR_MODE : bit (1) > }</td><td>0 (PR mode A)</td></tr>
<tr><td>{0|1 < Timeslot Allocation ></td><td>1 (Timeslot Allocation with Power Control Parameters) one slot arbitrarily chosen and the following GAMMA_TNx shall be corresponding to the chosen value (default slot 2)</td></tr>
<tr><td>< ALPHA ></td><td>0.5</td></tr>
<tr><td>< GAMMA_TN0 ></td><td>0 (no GAMMA_TN0)</td></tr>
<tr><td>< GAMMA_TN1 ></td><td>0 (no GAMMA_TN1)</td></tr>
<tr><td>< GAMMA_TN2 ></td><td>1 (GAMMA_TN2)</td></tr>
<tr><td>- GAMMA_TN2</td><td>For GSM 900, +9 dBm
For DCS 1800, +6 dBm</td></tr>
<tr><td>< GAMMA_TN3 ></td><td>0 (no GAMMA_TN3)</td></tr>
<tr><td>< GAMMA_TN4 ></td><td>0 (no GAMMA_TN4)</td></tr>
<tr><td>< GAMMA_TN5 ></td><td>0 (no GAMMA_TN5)</td></tr>
<tr><td>< GAMMA_TN6 ></td><td>0 (no GAMMA_TN6)</td></tr>
<tr><td>< GAMMA_TN7 >}</td><td>0 (no GAMMA_TN7)</td></tr>
<tr><td>< HALF_DUPLEX_MODE ></td><td>0 (no half duplex mode)</td></tr>
<tr><td>< TBF_STARTING_TIME ></td><td>no TBF starting time</td></tr>
<tr><td>{0|1 <Length of Allocation Bitmap ></td><td>1 (without length of Allocation Bitmap)</td></tr>
<tr><td>< ALLOCATION_BITMAP >}</td><td>allocate 5 blocks</td></tr>
</table>

42.1.3.2.10 PACKET UPLINK ASSIGNMENT message (single block allocation):

<table>
<tr><td>< MESSAGE_TYPE ></td><td>001010</td></tr>
<tr><td>< PAGE_MODE ></td><td>Normal Paging</td></tr>
<tr><td>{0|1< PERSISTENCE_LEVEL ></td><td></td></tr>
<tr><td>Referenced Address struct</td><td></td></tr>
<tr><td>{ 0 < Global TFI ></td><td></td></tr>
<tr><td>| 10 < TLLI ></td><td></td></tr>
<tr><td>| 110 < TQI ></td><td></td></tr>
<tr><td>| 111 <Packet Request Reference >}</td><td>111 (Packet Request Reference, information field sent in PACKET CHANNEL REQUEST and frame number in which PACKET CHANNEL REQUEST was received)</td></tr>
<tr><td>< CHANNEL_CODING_COMMAND ></td><td>arbitrarily chosen (default CS-1)</td></tr>
<tr><td>< TLLI_BLOCK_CHANNEL_CODING ></td><td>arbitrarily chosen but different from CHANNEL_CODING_COMMAND</td></tr>
<tr><td>< Packet Timing Advance ></td><td></td></tr>
<tr><td>- {0|1< TIMING_ADVANCE_VALUE ></td><td>1 (timing advance value)</td></tr>
<tr><td>- TIMING_ADVANCE_VALUE }</td><td>30 bit periods</td></tr>
<tr><td>- {0|1< TIMING_ADVANCE_INDEX></td><td>0 (no timing advance index)</td></tr>
<tr><td><TIMING_ADVANCE_TIMESLOT_NUMBER >}</td><td></td></tr>
<tr><td>{0|1< Frequency Parameters ></td><td>1 (Frequency Parameters present)</td></tr>
<tr><td>< TSC ></td><td>arbitrarily chosen (default 5)</td></tr>
<tr><td>{ 00< ARFCN >}</td><td>00 (ARFCN no hopping)</td></tr>
<tr><td>- ARFCN}</td><td>For GSM 900, 30
For DCS 1800, 650</td></tr>
<tr><td>{ 10 < Single Block Allocation ></td><td>10 (Single block allocation)</td></tr>
<tr><td>< TIMESLOT_NUMBER ></td><td>arbitrarily chosen (default slot 2)</td></tr>
<tr><td>{0|1</td><td>1 (power control parameters)</td></tr>
<tr><td>< ALPHA ></td><td>0.5</td></tr>
<tr><td>< GAMMA_TN >}</td><td>For GSM 900, +9 dBm
For DCS 1800, +6 dBm</td></tr>
<tr><td>{0|1</td><td>1 (downlink power control parameters)</td></tr>
<tr><td>< P0 ></td><td>0 dB</td></tr>
<tr><td>< BTS_PWR_CTRL_MODE ></td><td>0 (mode A)</td></tr>
<tr><td>< PR_MODE: bit (1) > }</td><td>0 (PR mode A)</td></tr>
<tr><td>< TBF_STARTING_TIME ></td><td>no TBF starting time</td></tr>
<tr><td>< padding bits ></td><td>Spare padding</td></tr>
</table>

42.2 Fixed Allocation in Packet Transfer Mode

This clause is applicable for all MS supporting GPRS service.

42.2.1 Generic procedures to bring the MS into uplink transfer mode

For most test cases in sub-clause 42.2.2 the test starts when the MS is in packet uplink transfer mode. This sub-clause defines several generic test procedures to establish an uplink TBF and to bring the MS into the packet transfer mode. Fixed allocation MAC mode is used for the uplink RLC data block transfer.

Before one of the generic test procedures is used, it is necessary in a test to describe the way to trigger the MS for the relevant uplink access.

42.2.1.1 One phase access

The tables below describe message exchanges which bring the MS into the packet uplink transfer mode with the one phase access procedure. In fixed allocation, the one phase access procedure always indicates an open-ended TBF, because the SS does not know how much data the MS intends to transfer.

Table 42.2.1.1/1a: Generic procedure for MS entering uplink transfer mode, one phase access, fixed allocation, open-ended TBF (PBCCH present)

Step	Direction	Message	Comments
1	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH. 11-bit, one phase access requested.
2	SS -> MS	PACKET UPLINK ASSIGNMENT	Uplink fixed allocation. More than one block is allocated, which indicates open-ended TBF. Sent on PAGCH. The fixed allocation parameters are indicated in each test case which uses this generic procedure.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding is the scheme specified by TLLI_BLOCK_CHANNEL_CODING, the TFI is correct and the block contains TLLI.
4	SS -> MS	PACKET UPLINK ACK/NACK	With contention resolution TLLI, Sent on the PACCH of the PDCH assigned in step 2.

Table 42.2.1.1/1b: Generic procedure for MS entering uplink transfer mode, one phase access, fixed allocation, open-ended TBF (PBCCH not present)

Step	Direction	Message	Comments
1	MS -> SS	CHANNEL REQUEST	Received on RACH. 11-bit, one phase access requested.
2	SS -> MS	IMMEDIATE ASSIGNMENT	Uplink fixed allocation. More than one block is allocated, which indicates open-ended TBF. Sent on AGCH. The fixed allocation parameters are indicated in each test case which uses this generic procedure.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding is the scheme specified by TLLI_BLOCK_CHANNEL_CODING, the TFI is correct and the block contains TLLI.
4	SS -> MS	PACKET UPLINK ACK/NACK	With contention resolution TLLI, Sent on the PACCH of the PDCH assigned in step 2.

42.2.1.2 Two phase access

The tables below describe message exchanges which bring the MS into the packet uplink transfer mode by two phase access procedure.

Note that the value of RLC_OCTET_COUNT in step 3 in each procedure is MS implementation dependent. Therefore, it is MS implementation dependent whether the TBF is open-ended or closed-ended.

Also, the MS may send additional PACKET RESOURCE REQUEST messages at any time after the initial PACKET UPLINK ASSIGNMENT. This is MS implementation dependent.

Table 42.2.1.2/1a: Generic procedure for MS entering uplink transfer mode, two phase access, fixed allocation, open-ended uplink TBF (PBCCH present)

Step	Direction	Message	Comments
1	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH. 11-bit, two phase access requested.
2	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to force the MS into a two phase access procedure. Sent on PAGCH.
3	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. RLC_OCTET_COUNT = 0. Received on the single block assigned in step 2. Check that the PEAK_THROUGHPUT, RADIO_PRIORITY and RLC_MODE are compliant with the PDP context used.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink fixed allocation. Sent on PACCH of the same PDCH assigned in step 2. The fixed allocation parameters are indicated in each test case that uses this generic procedure.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding is the scheme specified by CHANNEL_CODING_COMMAND in step 4, and the TFI is correct.

Table 42.2.1.2/1b: Generic procedure for MS entering uplink transfer mode, two phase access, fixed allocation, open-ended uplink TBF (PBCCH not present)

Step	Direction	Message	Comments
1	MS -> SS	CHANNEL REQUEST	Received on RACH. 11-bit, two phase access requested.
2	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment, to force the MS into a two phase access procedure. Sent on AGCH.
3	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. RLC_OCTET_COUNT = 0. Received on the single block assigned in step 2. Check that the PEAK_THROUGHPUT, RADIO_PRIORITY and RLC_MODE are compliant with the PDP context used.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink fixed allocation. Sent on PACCH of the same PDCH assigned in step 2. The fixed allocation parameters are indicated in each test case that uses this generic procedure.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding is the scheme specified by CHANNEL_CODING_COMMAND in step 4, and the TFI is correct.

Table 42.2.1.2/2a: Generic procedure for MS entering uplink transfer mode, two phase access, Fixed allocation, close-ended uplink TBF (PBCCH present)

Step	Direction	Message	Comments
1	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH. 11-bit two phase access requested.
2	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to force the MS into a two phase access procedure. Sent on PAGCH.
3	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. RLC_OCTET_COUNT <> 0. Received on the single block assigned in step 2. Check that the PEAK_THROUGHPUT, RADIO_PRIORITY and RLC_MODE are compliant with the PDP context used.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Close-ended uplink fixed allocation, Sent on PACCH of the same PDCH assigned in step 2.The fixed allocation parameters are indicated in each test case that uses this generic procedure.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding is the scheme specified by CHANNEL_CODING_COMMAND in step 4, and the TFI is correct.

Table 42.2.1.2/2b: Generic procedure for MS entering uplink transfer mode, two phase access, Fixed allocation, close-ended uplink TBF (PBCCH not present)

Step	Direction	Message	Comments
1	MS -> SS	CHANNEL REQUEST	Received on RACH. 11-bit two phase access requested.
2	SS -> MS	IMMEDIATE ASSIGNMENT	Single block assignment, to force the MS into a two phase access procedure. Sent on AGCH.
3	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. RLC_OCTET_COUNT <> 0. Received on the single block assigned in step 2. Check that the PEAK_THROUGHPUT, RADIO_PRIORITY and RLC_MODE are compliant with the PDP context used.
4	SS -> MS	PACKET UPLINK ASSIGNMENT	Close-ended uplink fixed allocation, Sent on PACCH of the same PDCH assigned in step 2.The fixed allocation parameters are indicated in each test case that uses this generic procedure.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding is the scheme specified by CHANNEL_CODING_COMMAND in step 4, and the TFI is correct.

42.2.2 Fixed Allocation / Uplink Transfer

42.2.2.1 Fixed Allocation / Uplink Transfer /Normal operation

42.2.2.1.1 Fixed Allocation / Uplink Transfer / Normal operation / Blocks

42.2.2.1.1.1 Definition and applicability

This test case applies to all Mobile Station supporting GPRS.

42.2.2.1.1.2 Conformance Requirement

If the BLOCKS_OR_BLOCK_PERIODS field indicates blocks, then the bits in the ALLOCATION_BITMAP correspond to radio blocks. Bits are included in the bitmap only for radio blocks on assigned PDCHs. Each bit in the bitmap indicates whether the corresponding radio block is assigned to the fixed allocation. The mobile station shall transmit an RLC/MAC block in each radio block assigned by the ALLOCATION_BITMAP.

References

GSM 04.60, subclause 8.1.1.3.1, 11.2.29

42.2.2.1.1.3 Test purpose

To verify that when BLOCK_OR_BLOCK_PERIODS field is 0 in the PACKET UPLINK ASSIGNMENT, the MS transmits RLC/MAC blocks strictly according to radio blocks allocated in ALLOCATION_BITMAP array.

42.2.2.1.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

MS is triggered to begin an uplink data transfer. Verify that the MS sends uplink RLC data blocks only in the blocks specified by the ALLOCATION_BITMAP.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.2/1a or 42.2.1.2/2a.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
4	SS		Verify that step 3 is repeated until current allocation is exhausted. Verify MS is treating each bit in the ALLOCATION_BITMAP as a block, and only using timeslots allocated in ALLOCATION_BITMAP.
5	SS -> MS	PACKET UPLINK ACK/NACK	Sent when current allocation is exhausted. Containing valid RRBP. Sent on PACCH.
6	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message as part of macro in step 2:

Fixed Allocation - TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH - ALLOCATION_BITMAP	 One timeslot is assigned 0 – blocks Length of ALLOCATION_BITMAP (exactly 10 bits are set to 1)

PACKET UPLINK ACK/NACK message in step 5:

Ack/Nack Description - FINAL_ACK_INDICATION - STARTING_SEQUENCE_NUMBER - RECEIVED_BLOCK_BITMAP	 1 (final ACK) V(R) Acknowledge all data blocks transmitted by the MS

42.2.2.1.2 Fixed Allocation / Uplink Transfer / Normal operation / Block Periods

42.2.2.1.2.1 Definition and applicability

Procedure 1 of this test case applies to all MSs supporting GPRS.

Procedure 2 of this test case applies to all MSs supporting GPRS except those MSs in multi-slot classes 1,2,4 or 8. Multi-slot classes 1, 2, 4, and 8 are untestable for part 2 because they have Tx = 1.

42.2.2.1.2.2 Conformance requirements

If the BLOCKS_OR_BLOCK_PERIODS field (=1) indicates block periods, then the bits in the bitmap indicate which block periods are assigned to the allocation. The mobile station shall transmit an RLC/MAC block on each timeslot assigned in the TIMESLOT_ALLOCATION field in each block period assigned to the allocation.

References

GSM 04.60, subclause 8.1.1.3.1, 11.2.29

42.2.2.1.2.3 Test purpose

Verify that when BLOCK_OR_BLOCK_PERIODS parameter is set to 1, the MS transmits RLC/MAC blocks strictly according to timeslots allocated in TIMESLOT_ALLOCATION array and block periods allocated in the ALLOCATION_BITMAP array.

42.2.2.1.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer. Verify that the MS sends uplink RLC data blocks only in the block periods specified by the ALLOCATION_BITMAP.

2. MS is triggered to begin an uplink data transfer. Verify that the MS sends uplink RLC data blocks in each timeslot allocated to the MS in the TIMESLOT_ALLOCATION, if the bit for this block period in the ALLOCATION_BITMAP is set to 1.

Maximum Duration of Test

5 min.

Expected Sequence – Procedure 1

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.2/1a or 42.2.1.2/2a.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check the TFI is correct.
4	SS		Verify that step 3 is repeated until current allocation is exhausted. Verify MS is treating each bit in the ALLOCATION_BITMAP as a block period, and only using timeslots allocated in TIMESLOT_ALLOCATION.
5	SS -> MS	PACKET UPLINK ACK/NACK	Sent when current allocation is exhausted. Containing valid RRBP. Sent on PACCH.
6	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.

Expected Sequence – Procedure 2

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.2/1a or 42.2.1.2/2a.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check the TFI is correct.
4	SS		Verify that step 3 is repeated until current allocation is exhausted. Verify MS is treating each bit in the ALLOCATION_BITMAP as a block period, and only using timeslots allocated in TIMESLOT_ALLOCATION.
5	SS -> MS	PACKET UPLINK ACK/NACK	Sent when current allocation is exhausted. Containing valid RRBP. Sent on PACCH.
6	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message as part of macro in step 2 (Procedure 1):

Fixed Allocation - TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH - ALLOCATION_BITMAP	 One timeslot is assigned 1 – block periods 25 exactly 10 bits (out of 25) are set to 1

PACKET UPLINK ASSIGNMENT message as part of macro in step 2 (Procedure 2):

Fixed Allocation - TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH - ALLOCATION_BITMAP	 Two timeslots assigned 1 – block periods 25 exactly 10 bits (out of 25) are set to 1

PACKET UPLINK ACK/NACK message in step 5:

Ack/Nack Description - FINAL_ACK_INDICATION - STARTING_SEQUENCE_NUMBER - RECEIVED_BLOCK_BITMAP	 1 (final ACK) V(R) Acknowledge all data blocks transmitted by the MS

42.2.2.2 Fixed Allocation / Uplink Transfer / Operation with TS_OVERRIDE for single-slot TX

42.2.2.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.2.2 Conformance requirements

The network may also specify a TS_OVERRIDE indication in the PACKET UPLINK ACK/NACK. TS_OVERRIDE applies to the next allocation after the current allocation expires. The TS_OVERRIDE field is a bitmap with a bit corresponding to each timeslot. For each bit set in the TS_OVERRIDE, the mobile shall disregard the ALLOCATION_BITMAP for that timeslot and shall transmit on all uplink radio blocks for that timeslot for the duration of the next allocation. If a bit is not set in the TS_OVERRIDE field, then the ALLOCATION_BITMAP shall apply to that timeslot.

References

GSM 04.60, subclause 8.1.1.3.2.2

42.2.2.2.3 Test purpose

To verify that this new allocation begins immediately after the current allocation ends and uses the most recently received ALLOCATION_BITMAP in consultation with TS_OVERRIDE as the following:

1. Until the next allocation begins, the mobile disregards the TS_OVERRIDE field.

2. For each bit set in the TS_OVERRIDE, the mobile disregards the ALLOCATION_BITMAP for that timeslot and transmits on all uplink radio blocks for that timeslot for the duration of the next allocation.

3. If a bit is not set in the TS_OVERRIDE field, then the ALLOCATION_BITMAP applies to that timeslot.

42.2.2.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context2 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to trigger the MS to initiate an uplink packet transfer

Test Procedure

MS is triggered to begin an uplink data transfer. Verify that the MS sends uplink RLC data blocks only in the radio blocks specified by the ALLOCATION_BITMAP. Network sends a repeat allocation with TS_OVERRIDE corresponding to the assigned timeslot. Verify the MS finishes the current allocation as specified in the bitmap, then begins the new allocation with the application of TS_OVERRIDE.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.2/1a or 42.2.1.2/2a.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	SS -> MS	PACKET UPLINK ACK/NACK	TS_OVERRIDE corresponding to the one slot allocated to the MS in step 2. (Repeat allocation)
5			Step 3 is repeated 4 times. (Allowing the MS to exhaust the allocation in step 2.) Verify the MS obeys the allocation bitmap assigned in step 2 and ignores TS_OVERRIDE.
6	MS -> SS	RLC DATA BLOCKS	At the next natural allocation boundary. Verify the MS is transmitting in every block (due to application of TS_OVERRIDE)
7	SS		After the MS exhausts the second allocation, verify the network has received exactly 11 RLC data blocks after step 5.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2 :

Fixed allocation - TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH - ALLOCATION_BITMAP	 One timeslot is assigned 0 – blocks 11 01010101010

PACKET UPLINK ACK/NACK message in step 4:

Fixed allocation - TS_OVERRIDE	 <8 bits, with only the bit corresponding to the assigned timeslot set to '1'>

42.2.2.3 Fixed Allocation / Uplink Transfer / Operation with TS_OVERRIDE for multi-slot TX

42.2.2.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS except those MSs in multi-slot classes 1,2,4 or 8. Multi-slot classes 1, 2, 4, and 8 are not applicable for this test case because they have Tx = 1.

42.2.2.3.2 Conformance requirements

The network may also specify a TS_OVERRIDE indication in the PACKET UPLINK ACK/NACK. TS_OVERRIDE applies to the next allocation after the current allocation expires. The TS_OVERRIDE field is a bitmap with a bit corresponding to each timeslot. For each bit set in the TS_OVERRIDE, the mobile shall disregard the ALLOCATION_BITMAP for that timeslot and shall transmit on all uplink radio blocks for that timeslot for the duration of the next allocation. If a bit is not set in the TS_OVERRIDE field, then the ALLOCATION_BITMAP shall apply to that timeslot.

References

GSM 04.60, subclause 8.1.1.3.2.2

42.2.2.3.3 Test purpose

To verify that this new allocation begins immediately after the old allocation ends and uses the most recently received ALLOCATION_BITMAP in consultation with TS_OVERRIDE as the following:

1. Until the next allocation begins, the mobile disregards the TS_OVERRIDE field.
2. For each bit set in the TS_OVERRIDE, the mobile disregards the ALLOCATION_BITMAP for that timeslot and transmits on all uplink radio blocks for that timeslot for the duration of the next allocation.
3. If a bit is not set in the TS_OVERRIDE field, then the ALLOCATION_BITMAP applies to that timeslot.

42.2.2.3.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context2 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to trigger the MS to initiate an uplink packet transfer,

Test Procedure

MS is triggered to begin an uplink data transfer on 2 timeslots. Verify that the MS sends uplink RLC data blocks only in the radio blocks specified by the ALLOCATION_BITMAP. Network sends a repeat allocation with TS_OVERRIDE corresponding to one of the assigned timeslots. Verify the MS finishes the current allocation as specified in the bitmap, then begins the new allocation with the application of TS_OVERRIDE.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.2/1a or 42.2.1.2/2a.
3	MS -> SS	RLC DATA BLOCKS	MS starts transmitting RLC blocks on 2 timeslots only when TBF starting time occurs
4	SS -> MS	PACKET UPLINK ACK/NACK	TS_OVERRIDE corresponding to one of the slots allocated to the MS in step 2. (Repeat allocation)
5			Step 3 is repeated 4 times. (Allowing the MS to exhaust the allocation in step 2.) Verify the MS obeys the allocation bitmap assigned in step 2 and ignores TS_OVERRIDE.
6	MS -> SS	RLC DATA BLOCKS	At the next natural allocation boundary. Verify the MS is transmitting in every block on one assigned timeslot (due to application of TS_OVERRIDE), plus following the application bitmap for the other assigned timeslot.
7	SS		After the MS exhausts the second allocation, verify the network has received exactly 14 RLC data blocks after step 5.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2 :

Fixed allocation	
- TIMESLOT ALLOCATION	Two timeslots assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	18
- ALLOCATION_BITMAP	001100110011001111

PACKET UPLINK ACK/NACK message in step 4:

Fixed allocation	
- TS_OVERRIDE	<8 bits, with only one bit corresponding to one of the assigned timeslots set to '1'>

42.2.2.4 Fixed Allocation / Uplink Transfer / T3184 Expiry

42.2.2.4.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.4.2 Conformance requirements

A mobile station operating with a fixed allocation shall start or restart timer T3184 upon reception of a PACKET UPLINK ACK/NACK message. If timer T3184 expires, the mobile station shall perform an abnormal release with cell re-selection.

[To perform abnormal release with cell re-selection] the mobile station shall abort all TBFs in progress. If access to another cell is allowed, i.e. the RANDOM_ACCESS_RETRY bit is set, the mobile station shall perform abnormal cell reselection (see GSM 05.08) and initiate establishment of an uplink TBF as defined in subclause 7.1 on the new cell. The mobile station shall not reselect back to the original cell for T_RESEL seconds if another suitable cell is available. The parameters RANDOM_ACCESS_RETRY and T_RESEL (default value 5 s) are broadcast in PSI 3.

If access to another cell is not allowed, i.e. the RANDOM_ACCESS_RETRY bit is not set, or if no neighbour cells are available, the mobile station shall go to the CCCH or PCCCH and report an RLC/MAC failure to the higher layer.

References

GSM 04.60, subclause 9.3.2.2, 9.4.2

42.2.2.4.3 Test purpose

1. To verify that the mobile starts timer T3184 upon reception of PACKET UPLINK ACK/NACK message during the mobile's transmission if the timer is not running.

2. To verify that the mobile restarts timer T3184 upon reception of PACKET UPLINK ACK/NACK message during the mobile's transmission if the timer is running.

3. To verify that upon expiry of timer T3184, the mobile performs an abnormal release procedure with cell re-selection by initiating establishment of an uplink TBF on a new cell. (This is the case where RANDOM_ACCESS_RETRY bit is set.)

42.2.2.4.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported,PCCCH not present, CCCH with SI13

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated and PDP context2 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to trigger the MS to initiate an uplink packet transfer,

Test Procedure

MS is triggered to begin an uplink data transfer. Periodic PACKET UPLINK ACK/NACK messages are sent to verify that the T3184 timer is restarted at the correct times, and to verify that when the T3184 timer expires, the MS performs an abnormal release with cell re-selection.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC block only when TBF starting time occurs
4			Step 3 is repeated 4 times. (Allowing the MS to exhaust the allocation in step 2.)
5	SS -> MS	PACKET UPLINK ACK/NACK	Cell A: No REPEAT_ALLOCATION or ALLOCATION_BITMAP - MS starts timer T3184
6	SS		Wait (0.8 * T3184) seconds Verify no access on Cell A or Cell B.
7	SS -> MS	PACKET UPLINK ACK/NACK	Cell A: With REPEAT_ALLOCATION - MS restarts T3184
8	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC blocks according to repeat allocation until allocation is exhausted.
9	MS -> SS	CHANNEL REQUEST	Cell B: Sent more than T3184 – (.1*T3184) seconds after step 7.

Specific Message Contents

PACKET SYSTEM INFORMATION MESSAGE 3 (throughout):

RANDOM_ACCESS_RETRY	1 – Retry allowed

PACKET UPLINK ASSIGNMENT message in step 2 :

Fixed allocation - TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH - ALLOCATION_BITMAP	 One timeslot assigned 0 – blocks 10 0101011100

PACKET UPLINK ACK/NACK message in step 5:

Fixed allocation - Repeat Allocation - ALLOCATION_BITMAP	 <not present> <not present>

PACKET UPLINK ACK/NACK message in step 7:

Fixed allocation - Repeat Allocation	 1

42.2.2.5 Fixed Allocation / Uplink Transfer / T3188

Applicability of T3188 tests:

If the MS sends a PACKET RESOURCE REQUEST at any time during any test for T3188, then the test is considered "passed" for that MS. However, a "pass" for one T3188 test should not be considered as a "pass" for all T3188 tests, as the MS operation is not constrained to one particular implementation method for all executions.

This applicability clause is necessary because it is MS implementation dependent whether to start the TBF in open-ended mode (where MS will send periodic PRRs), or in closed-ended mode (where the MS may optionally send a PRR to convert the TBF to open-ended mode). The purpose of T3188 is to wait for unsolicited new uplink resources to be assigned. If the MS sends a PRR, then T3188 is not applicable.

42.2.2.5.1 Fixed Allocation / Uplink Transfer / T3188/Expiry

42.2.2.5.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.5.1.2 Conformance requirements

If the mobile station exhausts its assigned fixed allocation and has more RLC data blocks to transmit, it shall start timer T3188 and monitor the downlink of all assigned PDCHs

If timer T3188 expires, the mobile station shall perform an abnormal release with random access (see 8.7.2).

References

GSM 04.60, subclause 8.1.1.3.2.3

42.2.2.5.1.3 Test purpose

Verify that when the current fixed allocation is exhausted, the MS starts T3188. Verify that if T3188 expires, the MS performs abnormal release with random access and not perform a cell reselection.

42.2.2.5.1.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer.
2. T3188 expires and MS performs abnormal release with random access.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC block only when TBF starting time occurs
4			Step 3 is repeated 4 times. (Allowing the MS to exhaust the allocation in step 2.)
5	SS -> MS	PACKET UPLINK ACK/NACK	Cell A: No REPEAT_ALLOCATION or ALLOCATION_BITMAP - MS starts timer T3188
6	MS -> SS	CHANNEL REQUEST	Cell A: Sent at least T3188 – (.1*T3188) seconds after step 5.
7	SS		Verify no access on Cell B.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2 :

Fixed allocation - TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH	 One timeslot assigned 0 – blocks 10
- ALLOCATION_BITMAP	0101011100

42.2.2.5.2 Fixed Allocation / Uplink Transfer / T3188/Stop with Packet Uplink Assignment

42.2.2.5.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.5.2.2 Conformance requirements

If the mobile station exhausts its assigned fixed allocation and has more RLC data blocks to transmit, it shall start timer T3188 and monitor the downlink of all assigned PDCHs. If the mobile station receives an assignment message containing a fixed allocation, the mobile station shall stop timer T3188 and use the new allocation at the assigned starting time.

References

GSM 04.60, subclause 8.1.1.3.2.3

42.2.2.5.2.3 Test purpose

Verify that when the current fixed allocation is exhausted, the MS starts T3188. Verify that T3188 is stopped when a PACKET UPLINK ASSIGNMENT is received.

42.2.2.5.2.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer. When the MS exhausts the current allocation, it shall start T3188.

2. When a Packet Uplink Assignment is received, verify that the MS uses the new allocation and stops T3188.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC block only when TBF starting time occurs
4			Step 3 is repeated 4 times. (Allowing the MS to exhaust the allocation in step 2.)
5	SS -> MS	PACKET UPLINK ACK/NACK	Cell A: No REPEAT_ALLOCATION or ALLOCATION_BITMAP - MS starts timer T3188
6	SS		Wait (.8 * T3188) seconds Verify no access on Cell A or Cell B.
7	SS -> MS	PACKET UPLINK ASSIGNMENT	Cell A: With ALLOCATION_BITMAP. Sent within T3188 of step 5. - MS stops T3188
8	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC blocks according to new allocation until allocation is exhausted.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2 and step 7:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	10
- ALLOCATION_BITMAP	0101011100

42.2.2.5.3 Fixed Allocation / Uplink Transfer / T3188/Stop with Packet Uplink Ack/Nack with REPEAT_ALLOCATION

42.2.2.5.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.5.3.2 Conformance requirements

If the mobile station exhausts its assigned fixed allocation and has more RLC data blocks to transmit, it shall start timer T3188 and monitor the downlink of all assigned PDCHs.

If the mobile station receives a PACKET UPLINK ACK/NACK with a REPEAT ALLOCATION after its current allocation has been exhausted, it shall stop timer T3188, wait until the next repeated allocation boundary and then begin transmitting using the repeated ALLOCATION_BITMAP.

References

GSM 04.60, subclause 8.1.1.3.2.3

42.2.2.5.3.3 Test purpose

Verify that when the current fixed allocation is exhausted, the MS starts T3188. Verify that T3188 is stopped when a PACKET UPLINK ACK/NACK with REPEAT_ALLOCATION is received.

42.2.2.5.3.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer. When the MS exhausts the current allocation, it shall start T3188.
2. When a Packet Uplink Ack/Nack with ALLOCATION_BITMAP is received, verify that the MS uses the new allocation and stops T3188.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC block only when TBF starting time occurs
4			Step 3 is repeated 4 times. (Allowing the MS to exhaust the allocation in step 2.)
5	SS -> MS	PACKET UPLINK ACK/NACK	Cell A: No REPEAT_ALLOCATION or ALLOCATION_BITMAP - MS starts timer T3188
6	SS		Wait (.8*T3188) seconds Verify no access on Cell A or Cell B.
7	SS -> MS	PACKET UPLINK ACK/NACK	Cell A: With REPEAT_ALLOCATION - MS stops T3188
8	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC blocks according to new allocation until allocation is exhausted.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	10
- ALLOCATION_BITMAP	0101011100

PACKET UPLINK ACK/NACK message in step 7:

Fixed allocation	
- Repeat Allocation	1

42.2.2.5 Fixed Allocation / Uplink Transfer / MS requests new resources/ T3168

Applicability of T3168 tests:

If the MS requests a closed-ended TBF, and does not send PACKET RESOURCE REQUEST at any time during the test, then the test is considered "passed" for that MS. However, a "pass" for one T3168 test should not be considered as a "pass" for all T3168 tests, as the MS operation is not constrained to one particular implementation method for all executions.

If the MS requests an open-ended TBF at the start of the test, then the test is applicable as written.

This applicability clause is necessary because it is MS implementation dependent whether to start the TBF in open-ended mode (where MS will send periodic PRRs), or in closed-ended mode (where the MS may optionally send a PRR to convert the TBF to open-ended mode). The purpose of T3168 is to test operation when the MS sends PRR and then waits for new uplink resources to be assigned. If the MS does not send a PRR, then T3168 is not applicable.

42.2.2.6.1 Fixed Allocation / Uplink Transfer / MS requests new resources/ T3168/Expiry

42.2.2.6.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.6.1.2 Conformance requirements

At sending of the PACKET RESOURCE REQUEST message, the mobile station shall start timer T3168.

On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall stop timer T3168 and switch to the assigned PDCHs.

On expiry of timer T3168, the mobile station shall retransmit the PACKET RESOURCE REQUEST message unless the PACKET RESOURCE REQUEST message has already been transmitted four times in which case the mobile station shall perform an abnormal release with random access.

If no PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message is received before the mobile station has completed its currently assigned TBFs the mobile station shall stop timer T3168 and return to packet idle mode (listening to its paging channel).

On receipt of a PACKET ACCESS REJECT message , the mobile station shall stop timer T3168 if running and return to packet idle mode. Before initiating a new packet access procedure the mobile station shall decode the PRACH Control Parameters if they are broadcast.

References

GSM 04.60, subclause 7.1.3.1, 8.1.1.3.2, 8.7.2, 12.24

42.2.2.6.1.3 Test purpose

Verify that when T3168 expires, the MS retransmits the PACKET RESOURCE REQUEST again (up to four times total). Verify that when T3168 expires after the fourth transmission of the PACKET RESOURCE REQUEST, that the MS performs abnormal release with random access.

42.2.2.6.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. When T3168 expires, MS resends PACKET RESOURCE REQUEST (up to 4 times)
4. When T3168 expires the fourth time, MS performs abnormal release with random access.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources - MS starts timer T3168
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
6	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources - This is sent T3168 seconds after previous PRR. - MS re-starts timer T3168
7			Steps 5 and 6 are repeated 2 more times such that a total of 4 PRRs are sent.
8	MS		MS repeats access procedure defined in table 42.2.1.1/1b

Specific Message Contents

PACKET SYSTEM INFORMATION MESSAGE 1 (throughout):

T3168	0 (.5 second)

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

42.2.2.6.2 Fixed Allocation / Uplink Transfer / MS requests new resources/ T3168/Stop with Packet Uplink Assignment

42.2.2.6.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.6.2.2 Conformance requirements

At sending of the PACKET RESOURCE REQUEST message, the mobile station shall start timer T3168.

On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall stop timer T3168 and switch to the assigned PDCHs.

References

GSM 04.60, subclause 7.1.3.1, 8.1.1.3.2, 12.24

42.2.2.6.2.3 Test purpose

Verify that when PACKET UPLINK ASSIGNMENT is received, MS stops T3168.

42.2.2.6.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. Prior to T3168 expiring, MS receives a new allocation.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources - MS starts timer T3168
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
6	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent (.8*T3168) seconds after step 4. - MS stops timer T3168
7	MS		Step 5 is repeated until current allocation is exhausted.
8	MS		MS starts to use the new allocation from step 6 at the next allocation boundary.

Specific Message Contents

PACKET SYSTEM INFORMATION MESSAGE 1 (throughout):

T3168	4 (2.5 seconds)

PACKET UPLINK ASSIGNMENT message in step 2 and step 6.

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

42.2.2.6.3 Fixed Allocation / Uplink Transfer / MS requests new resources/ T3168/Stop with Packet Uplink Ack/Nack with REPEAT_ALLOCATION

42.2.2.6.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.6.3.2 Conformance requirements

At sending of the PACKET RESOURCE REQUEST message, the mobile station shall start timer T3168.

References

GSM 04.60, subclause 7.1.3.1, 12.24

42.2.2.6.3.3 Test purpose

Verify that when PACKET UPLINK ACK/NACK is received, the MS stops T3168.

42.2.2.6.3.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.

3 Prior to T3168 expiring, MS receives a REPEAT_ALLOCATION.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources - MS starts timer T3168
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
6	SS -> MS	PACKET UPLINK ACK/NACK	Sent (.8*T3168) seconds after step 4. - MS stops timer T3168
7	MS		Step 5 is repeated until current allocation is exhausted.
8	MS		MS starts to use the new allocation from step 6 at the next allocation boundary.

Specific Message Contents

PACKET SYSTEM INFORMATION MESSAGE 1 (throughout):

T3168	6 (3.5 seconds)

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1

PACKET UPLINK ACK/NACK message in step 6:

REPEAT_ALLOCATION	1

42.2.2.6.4 Fixed Allocation / Uplink Transfer / MS requests new resources/ T3168/Stop with Packet Access Reject

42.2.2.6.4.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.6.4.2 Conformance requirements

At sending of the PACKET RESOURCE REQUEST message, the mobile station shall start timer T3168.

On receipt of a PACKET ACCESS REJECT message , the mobile station shall stop timer T3168 if running and return to packet idle mode. Before initiating a new packet access procedure the mobile station shall decode the PRACH Control Parameters if they are broadcast.

References

GSM 04.60, subclause 7.1.3.1, 12.24

42.2.2.6.4.3 Test purpose

Verify that when PACKET ACCESS REJECT is received, the MS does not complete the current allocation.

42.2.2.6.4.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. Prior to T3168 expiring, MS receives a PACKET ACCESS REJECT.
4. MS returns to packet idle mode without finishing the current allocation.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources - MS starts timer T3168
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
6	SS -> MS	PACKET ACCESS REJECT	Sent (.8*T3168) seconds after step 4 on PACCH. - No waiting time - MS stops timer T3168
7	SS		Verify MS does not continue to use the assigned PDCH or finish the current allocation. (MS may choose to initiate access again.)

Specific Message Contents

PACKET SYSTEM INFORMATION MESSAGE 1 (throughout):

T3168	7 (4.0 seconds)

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

42.2.2.6.5 Fixed Allocation / Uplink Transfer / MS requests new resources/ T3168/Continue with Packet Uplink Ack/Nack without REPEAT_ALLOCATION and without ALLOCATION_BITMAP

42.2.2.6.5.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.6.5.2 Conformance requirements

At sending of the PACKET RESOURCE REQUEST message, the mobile station shall start timer T3168.

On expiry of timer T3168, the mobile station shall retransmit the PACKET RESOURCE REQUEST message unless the PACKET RESOURCE REQUEST message has already been transmitted four times in which case the mobile station shall perform an abnormal release with random access.

References

GSM 04.60, subclause 8.1.1.3.2, 12.24

42.2.2.6.5.3 Test purpose

Verify that when MS receives a PACKET UPLINK ACK/NACK without an allocation, T3168 continues to run, and then expires, causing the MS to transmit the PACKET RESOURCE REQUEST again.

42.2.2.6.5.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. MS receives a PACKET UPLINK ACK/NACK with no REPEAT_ALLOCATION and no ALLOCATION_BITMAP. When T3168 expires, MS resends PACKET RESOURCE REQUEST.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources - MS starts timer T3168
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
6	SS -> MS	PACKET UPLINK ACK/NACK	No resources assigned - This is sent within (.2*T3168) after previous PRR.
7	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources - This is sent T3168 +/- (.1*T3168) after previous PRR. - MS re-starts timer T3168

Specific Message Contents

PACKET SYSTEM INFORMATION MESSAGE 1 (throughout):

T3168	1 (1 second)

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation - TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH	 One timeslot assigned 0 – blocks 48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

42.2.2.7 Fixed Allocation / Uplink Transfer / MS requests new resources/ Successful

42.2.2.7.1 Fixed Allocation / Uplink Transfer / MS requests new resources/ Successful/Packet Uplink Assignment with ALLOCATION_BITMAP

42.2.2.7.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.7.1.2 Conformance requirements

At sending of the PACKET RESOURCE REQUEST message, the mobile station shall start timer T3168.

On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall stop timer T3168 and switch to the assigned PDCHs.

References

GSM 04.60, subclause 8.1.1.3.2

42.2.2.7.1.3 Test purpose

Verify that when PACKET UPLINK ASSIGNMENT is received, MS switches to new resources after current allocation is exhausted.

42.2.2.7.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. Prior to T3168 expiring, MS receives a PACKET UPLINK ASSIGNMENT (with ALLOCATION_BITMAP).

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
6	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent (.5*T3168) after step 4.
7	MS		Step 5 is repeated until current allocation is exhausted.
8	MS		MS uses allocation from step 6.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2 and step 6:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

42.2.2.7.2 Fixed Allocation / Uplink Transfer / MS requests new resources/ Successful/Multiple Packet Uplink Assignments

42.2.2.7.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.7.2.2 Conformance requirements

Upon receipt of a complete uplink assignment containing an ALLOCATION_BITMAP, the mobile station shall begin transmitting on the new resources at the indicated TBF Starting Time. If there is a conflict between a previous allocation and the new allocation, the new allocation shall take precedence.

References

GSM 04.60, subclause 8.1.1.3.2.2

42.2.2.7.2.3 Test purpose

Verify that when the new PACKET UPLINK ASSIGNMENT is received, MS switches to new resources at the starting time if there is a conflict with the current assignment.

42.2.2.7.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. MS receives a PACKET UPLINK ASSIGNMENT with starting time prior to the end of the current allocation.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
6	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent .5 second after step 4. - Starting time conflicts with current allocation.
7	MS -> SS	RLC_DATA_BLOCKS	Verify MS sends no more than 6 data blocks after step 6 using the allocation from step 2.
8	MS -> SS	RLC DATA BLOCKS	MS uses new allocation from step 6 at the starting time specified in step 6.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

PACKET UPLINK ASSIGNMENT message in step 6:

Starting_time	<26 frames after current frame>
Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned <different from previous>
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

42.2.2.7.3 Fixed Allocation / Uplink Transfer / MS requests new resources/ Successful/Packet Uplink Ack/Nack with ALLOCATION_BITMAP

42.2.2.7.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.7.3.2 Conformance requirements

Upon receipt of a PACKET UPLINK ACK/NACK with a REPEAT_ALLOCATION, the mobile station shall start a new allocation when the current allocation ends. This new allocation shall begin immediately after the current allocation ends and shall use the most recently received ALLOCATION_BITMAP. If the mobile station receives multiple PACKET

UPLINK ACK/NACK messages with REPEAT_ALLOCATION during an allocation, the mobile shall repeat the ALLOCATION_BITMAP only once.

References

GSM 04.60, subclause 8.1.1.3.2.2

42.2.2.7.3.3 Test purpose

Verify that the MS uses the new ALLOCATION_BITMAP from the PACKET UPLINK ACK/NACK message.

42.2.2.7.3.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. After the current allocation expires, MS receives a new allocation in a PACKET UPLINK ACK/NACK.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2, until current allocation is exhausted.
6	SS -> MS	PACKET UPLINK ACK/NACK	Sent 1 second after step 4, with new ALLOCATION_BITMAP.
7	MS		MS starts to use the new allocation from step 6 at the next allocation boundary.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 5 bits are set to 1.

PACKET UPLINK ACK/NACK message in step 6:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned <different from previous>
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

42.2.2.7.4 Fixed Allocation / Uplink Transfer / MS requests new resources/ Successful/Multiple Packet Uplink Ack/Nack with ALLOCATION_BITMAP

42.2.2.7.4.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.7.4.2 Conformance requirements

Upon receipt of a PACKET UPLINK ACK/NACK with a REPEAT_ALLOCATION, the mobile station shall start a new allocation when the current allocation ends. This new allocation shall begin immediately after the current allocation ends and shall use the most recently received ALLOCATION_BITMAP. If the mobile station receives multiple PACKET UPLINK ACK/NACK messages with REPEAT_ALLOCATION during an allocation, the mobile shall repeat the ALLOCATION_BITMAP only once.

References

GSM 04.60, subclause 8.1.1.3.2.2

42.2.2.7.4.3 Test purpose

Verify that the MS uses the ALLOCATION_BITMAP currently being used as the allocation bitmap that applies to the REPEAT_ALLOCATION.

42.2.2.7.4.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. MS receives a series of PACKET UPLINK ACK/NACK messages before the current allocation expires, containing a new allocation, followed by a repeat allocation, followed by a different new allocation, followed by a repeat allocation.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources (can come any time during the allocation)
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
6	SS -> MS	PACKET UPLINK ACK/NACK	Sent 1 second after step 4, with new ALLOCATION_BITMAP.
7	SS -> MS	PACKET UPLINK ACK/NACK	REPEAT_ALLOCATION
8	SS -> MS	PACKET UPLINK ACK/NACK	Different ALLOCATION_BITMAP than step 6.
9	SS -> MS	PACKET UPLINK ACK/NACK	REPEAT_ALLOCATION (This repeat only applies to the allocation in progress.)
10	MS		Step 5 is repeated until current allocation is exhausted.
11	MS		MS starts to repeat the allocation from step 2 at the next allocation boundary.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

PACKET UPLINK ACK/NACK message in step 6:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned <different from previous>
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1. <different from previous>

PACKET UPLINK ACK/NACK message in step 7 and 9:

REPEAT_ALLOCATION	1

PACKET UPLINK ACK/NACK message in step 8:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned <different from steps 2 and 6>
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1. <different from previous>

42.2.2.7.5 Fixed Allocation / Uplink Transfer / MS requests new resources/ Successful/Multiple Packet Uplink Ack/Nack with REPEAT_ALLOCATION

42.2.2.7.5.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.7.5.2 Conformance requirements

Upon receipt of a PACKET UPLINK ACK/NACK with a REPEAT_ALLOCATION, the mobile station shall start a new allocation when the current allocation ends. This new allocation shall begin immediately after the current allocation ends and shall use the most recently received ALLOCATION_BITMAP. If the mobile station receives multiple PACKET UPLINK ACK/NACK messages with REPEAT_ALLOCATION during an allocation, the mobile shall repeat the ALLOCATION_BITMAP only once.

References

GSM 04.60, subclause 8.1.1.3.2.2

42.2.2.7.5.3 Test purpose

Verify that the MS repeats the current allocation only once.

42.2.2.7.5.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. MS receives a series of PACKET UPLINK ACK/NACK messages before the current allocation expires, each containing a repeat allocation.

4. MS responds at the next allocation boundary by using the previous allocation but only once.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources (sent sometime during current allocation)
5	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
6	SS -> MS	PACKET UPLINK ACK/NACK	Sent (.5*T3168) after step 4, with REPEAT_ALLOCATION.
7	SS -> MS	PACKET UPLINK ACK/NACK	REPEAT_ALLOCATION
8	SS -> MS	PACKET UPLINK ACK/NACK	REPEAT_ALLOCATION
9	MS		Step 5 is repeated until current allocation is exhausted.
10	MS		MS starts to repeat the allocation from step 2 at the next allocation boundary.
11	SS		If MS sends PACKET_RESOURCE_REQUEST anytime during step 10, SS sends a different PACKET_UPLINK_ASSIGNMENT than sent previously. Verify MS does not use the allocation from step 2 after step 10.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

PACKET UPLINK ACK/NACK message in step 10:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned <different from previous>
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1. <different from previous>

PACKET UPLINK ACK/NACK message in step 6,7 and 8:

REPEAT_ALLOCATION	1

42.2.2.8 Fixed Allocation / Uplink Transfer / MS requests new resources/ Failure

42.2.2.8.1 Fixed Allocation / Uplink Transfer / MS requests new resources/ Failure/Packet Access Reject

42.2.2.8.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.8.1.2 Conformance requirements

On receipt of a PACKET ACCESS REJECT message , the mobile station shall stop timer T3168 if running and indicate a packet access failure to upper layer.

References

GSM 04.60, subclause 8.1.1.3.2

42.2.2.8.1.3 Test purpose

Verify that the MS returns to packet idle mode when PACKET ACCESS REJECT is received.

42.2.2.8.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. After the current allocation expires, MS receives a PACKET ACCESS REJECT message.
4. MS returns to packet idle mode.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources
5	SS -> MS	PACKET ACCESS REJECT	
6	MS -> SS	RLC DATA BLOCKS	MS sends no more than 6 RLC data blocks after step 5.
7	SS		Verify that MS is not transmitting on the previous PDCH.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	48
- ALLOCATION_BITMAP	Exactly 10 bits are set to 1.

42.2.2.8.2 Fixed Allocation / Uplink Transfer / MS requests new resources/ Failure/Packet Access Reject with WAIT_INDICATION during allocation in progress

42.2.2.8.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.8.2.2 Conformance requirements

If the PACKET ACCESS REJECT message contains a WAIT_INDICATION field in a Reject structure addressed to the mobile station, the mobile station shall

- start timer T3172 and if the mobile station has additional RLC data blocks to transmit, it shall initiate a new TBF establishment procedure on the RACH or PRACH, but the mobile station is not allowed to make a new attempt for packet access in the same cell until timer T3172 expires, it may, however, attempt packet access in an other cell after successful cell reselection. A mobile station in GPRS MS class A or B mode of operation may attempt to enter the dedicated mode in the same cell before timer T3172 has expired. During the time T3172 is running, the mobile station shall ignore all received PACKET PAGING REQUEST messages except paging request to trigger RR connection establishment.

The value of the WAIT_INDICATION field (i.e. timer T3172) relates to the cell from which it was received.

References

GSM 04.60, subclause 8.1.1.3.2

42.2.2.8.2.3 Test purpose

Verify that the MS waits T3172 before sending additional PACKET RESOURCE REQUEST messages, when PACKET ACCESS REJECT is received with a WAIT_INDICATION.

42.2.2.8.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.
2. Before current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. Before the current allocation expires, MS receives a PACKET ACCESS REJECT message.
4. MS waits T3172 before sending additional PACKET RESOURCE REQUEST messages.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCKS	MS transmits RLC blocks only when TBF starting time occurs
4	MS -> SS	PACKET RESOURCE REQUEST	MS requests additional resources
5	MS -> SS	RLC DATA BLOCK	MS continues to transmit RLC data blocks according to allocation from step 2.
6	SS -> MS	PACKET ACCESS REJECT	Sent (.5*T3168) after step 4. - MS starts T3172
7	MS -> SS	RLC DATA BLOCK	MS sends no more than 6 RLC data blocks after step 6.
8	MS -> SS	PACKET CHANNEL REQUEST	Sent more than 2 seconds after step 6.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

PACKET ACCESS REJECT message in step 6:

WAIT_INDICATION	2
WAIT_INDICATION_SIZE	0 – WAIT_INDICATION in units of seconds

42.2.2.9 Fixed Allocation / Uplink Transfer / Network initiates new resources

42.2.2.9.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.9.2 Conformance requirements

The network may at any time during the uplink TBF initiate a change of resources by sending on the downlink PACCH monitored by the MS, an unsolicited PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE, or an uplink resource reassignment in a PACKET UPLINK ACK/NACK message to the mobile station.

References

GSM 04.60, subclause 8.1.1.3.2

42.2.2.9.3 Test purpose

Verify that the MS obeys unsolicited PACKET UPLINK ASSIGNMENT message during an uplink TBF.

42.2.2.9.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF.

2. Before current allocation expires, SS sends unsolicited PACKET UPLINK ASSIGNMENT.

3. After the current allocation expires, MS uses the newly assigned resources.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
4A	MS -> SS	PACKET RESOURCE REQUEST	Optional: MS may request new resources. If this occurs, SS proceeds with step 4B.
4B	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign uplink resources in response to MS request.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Unsolicited – sent on PACCH. Different from step 4B.
6	MS -> SS	RLC DATA BLOCK	MS continues to transmit RLC data blocks according to allocation from step 2, until the allocation is exhausted.
7	MS -> SS	RLC DATA BLOCK	MS starts to use the new allocation from step 5 at the given starting time.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

PACKET UPLINK ASSIGNMENT message in step 5:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned <different than previous>
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.
Starting Time	100 frames after current allocation expires

42.2.2.10 Fixed Allocation / Uplink Transfer / PACCH operation

42.2.2.10.1 Fixed Allocation / Uplink Transfer / PACCH operation/ Normal Operation

42.2.2.10.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS multi-slot class 3 and higher.

42.2.2.10.1.2 Conformance requirements

A mobile station shall monitor one PDCH in the allocation for downlink PACCH except during the measurement gap. The network shall indicate that PDCH on uplink resource assignment (DOWNLINK_CONTROL_TIMESLOT parameter) according to MS multislot class.

References

GSM 04.60, subclause 8.1.1.3.4, Annex D

GSM 5.02, Annex B.1

42.2.2.10.1.3 Test purpose

Verify that the MS monitors the correct PDCH for PACCH during an uplink TBF.

42.2.2.10.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF on 2 timeslots.
2. MS receives PACKET POLLING REQUEST on the PDCH corresponding to its downlink PACCH.
3. MS responds to the poll by sending PACKET CONTROL ACKNOWLEDGEMENT.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCK	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET POLLING REQUEST	Sent on PACCH, PDCH 0.
6	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Sent in next but one block after step 5, on PDCH 0.
7	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2, until the allocation is exhausted.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	Two timeslot assigned (0 and 1)
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.
- DOWNLINK_CONTROL_TIMESLOT	000

PACKET POLLING REQUEST message in step 5:

TYPE_OF_ACK	1 (Respond with RLC/MAC control block)
TFI	Addressing this MS

42.2.2.10.2 Fixed Allocation / Uplink Transfer / PACCH operation/ PACCH message addressed to another MS

42.2.2.10.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS multi-slot class 3 and higher.

42.2.2.10.2.2 Conformance Requirements

A mobile station shall monitor one PDCH in the allocation for downlink PACCH except during the measurement gap. The network shall indicate that PDCH on uplink resource assignment (DOWNLINK_CONTROL_TIMESLOT parameter) according to MS multislot class.

References

GSM 04.60, subclause 8.1.1.3.4, Annex D

GSM 5.02, Annex B.1

42.2.2.10.2.3 Test purpose

Verify that the MS ignores the PACCH message if addressed to another MS.

42.2.2.10.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a open-ended TBF on 2 timeslots.
2. MS receives PACKET POLLING REQUEST on the PDCH corresponding to its downlink PACCH, addressed to another MS.
3. MS does not respond to the poll.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCK	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET POLLING REQUEST	Sent on PACCH, PDCH 0.
6	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2, until the allocation is exhausted. - Verify no PACKET CONTROL ACKNOWLEDGEMENT is sent by MS.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH	Two timeslots assigned (0 and 1) 0 – blocks <any suitable value >
- ALLOCATION_BITMAP - DOWNLINK_CONTROL_TIMESLOT	Exactly 40 bits are set to 1. 000

PACKET POLLING REQUEST message in step 5:

TYPE_OF_ACK TFI	1 (Respond with RLC/MAC control block) Not matching this MS.

42.2.2.10.3 Fixed Allocation/ Uplink Transfer / Abnormal cases / PACCH timeslot removed

42.2.2.10.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS multi-slot class 3 and higher.

42.2.2.10.3.2 Conformance requirements

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, subclause 8.2

GSM 5.02, Annex B.1

42.2.2.10.3.3 Test purpose

Verify that the MS monitors the correct PDCH for PACCH during an uplink TBF after the previously assigned downlink PACCH timeslot is released.

42.2.2.10.3.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer (via CCCH) and enters a open-ended TBF on 2 timeslots, with one timeslot assigned for its downlink PACCH.
2. MS receives PACKET PDCH RELEASE message on its assigned PACCH.
3. MS receives PACKET POLLING REQUEST on the PDCH that was just released, corresponding to its downlink PACCH.
4. MS does not respond to the poll.
5. MS receives PACKET POLLING REQUEST on another downlink PDCH to which it is assigned.
6. MS responds to the poll.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode by the generic procedure defined in the table 42.2.1.1/1b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCK	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET PDCH RELEASE	Sent on PACCH, PDCH 0.
6	SS -> MS	PACKET POLLING REQUEST	Sent on PACCH, PDCH 0.
7	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2, but without any transmission on PDCH 0. - Verify no PACKET CONTROL ACKNOWLEDGEMENT is sent by MS onPDCH0.
8	SS -> MS	PACKET POLLING REQUEST	Sent on PACCH, PDCH 1.
9	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Sent in next but one block after step 8, on PDCH 1.
10	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2, until the allocation is exhausted.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	Two timeslots assigned (0 and 1)
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.
- DOWNLINK_CONTROL_TIMESLOT	000

PACKET POLLING REQUEST message in step 6 and 8:

TYPE_OF_ACK	1 (Respond with RLC/MAC control block)
TFI	matching this MS

PACKET PDCH RELEASE message in step 5:

PAGE_MODE	00 – Normal Paging
TIMESLOTS_AVAILABLE	<not present>

42.2.2.11 Fixed Allocation/ Uplink Transfer / Abnormal cases

42.2.2.11.1 Fixed Allocation/ Uplink Transfer / Abnormal cases / Assignment without fixed allocation

42.2.2.11.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.1.2.11.1.2Conformance requirements

- If the mobile station receives an assignment message containing an allocation other than a fixed allocation, the mobile station shall perform an abnormal release with random access.

References

GSM 04.60, subclause 8.1.1.3.2.5

42.2.2.11.1.3 Test purpose

Verify that an MS in a fixed allocation uplink transfer performs an abnormal release with random access when an assignment message without a fixed allocation is received.

42.2.2.11.1.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer (via CCCH) and enters a fixed allocation open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.

3. Prior to T3168 expiring, MS receives a new allocation containing dynamic allocation.
4. MS performs an abnormal release with random access.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCK	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET UPLINK ACK/NACK	Cell A: With Dynamic Allocation. Sent on PACCH.
6	SS		Verify MS does not send more than 6 RLC data blocks from previous allocation. Verify Ms does not access cell B.
7	MS -> SS	CHANNEL REQUEST	Cell A: Random access
8	SS		Verify MS does not continue to transmit RLC data blocks from previous allocation.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

PACKET UPLINK ACK/NACK message in step 5:

Dynamic Allocation structure	<any dynamic allocation>

42.2.2.11.2 Fixed Allocation/ Uplink Transfer / Abnormal cases / Frequency not supported

42.2.2.11.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.11.2.1 Conformance requirements

- if the mobile station receives a PACKET UPLINK ASSIGNMENT message containing a Frequency Parameters information element specifying a frequency that is in a frequency band not supported by the mobile station then the mobile station shall perform an abnormal release with random access.

- If a mobile station receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message and detects an invalid Frequency Parameters information element in the message, it shall perform an abnormal release. If PCCCH is present in the cell the mobile station shall perform an abnormal release with system information (see subclause 8.7.3). If PCCCH is not present, the mobile station shall perform an abnormal release with random access (see subclause 8.7.2).

References

GSM 04.60, subclause 8.1.1.1.2.1, 8.1.1.3.2.5

42.2.2.11.2.3 Test purpose

Verify that an MS in a fixed allocation uplink transfer performs an abnormal release with random access when an assignment message specifying an unsupported frequency is received.

42.2.2.11.2.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated. The MS supports only a single band of frequencies.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer (via CCCH) and enters a fixed allocation open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. Prior to T3168 expiring, MS receives a new allocation containing Frequency Parameters IE with frequency not supported by the MS.
4. MS performs an abnormal release with random access.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCK	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Cell A: With frequency not supported by the MS. Sent on PACCH.
6	SS		Verify MS does not continue to transmit RLC data blocks from previous allocation.
7	MS -> SS	CHANNEL REQUEST	Cell A: Random access
8	SS		Verify MS does not continue to transmit RLC data blocks from previous allocation.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

PACKET UPLINK ASSIGNMENT message in step 5:

Frequency Parameters IE	
- ARFCN	<some frequency not supported by the MS>

42.2.2.11.3 Fixed Allocation/ Uplink Transfer / Abnormal cases / Invalid MA_NUMBER

42.2.2.11.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.2.11.3.2 Conformance Requirement

- If a mobile station receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message and detects an invalid Frequency Parameters information element in the message, it shall perform an abnormal release. If PCCCH is present in the cell the mobile station shall perform an abnormal release with system information (see subclause 8.7.3). If PCCCH is not present, the mobile station shall perform an abnormal release with random access (see subclause 8.7.2).

The MA_NUMBER shall use the following coding:

MA_NUMBER = 0–13 shall be used to reference a GPRS mobile allocation received in a PSI2 message;

MA_NUMBER = 14 shall be used to reference a GPRS mobile allocation received in a SI13 or PSI13 message;

MA_NUMBER = 15 shall be used to reference a GPRS mobile allocation received in a previous assignment message using the direct encoding.

References

GSM 04.60, subclause 8.1.1.3.2.5, 5.5.1.7

42.2.2.11.3.3 Test purpose

Verify that an MS in a fixed allocation uplink transfer performs an abnormal release with random access when an assignment message specifying an invalid MA_NUMBER as part of the Frequency Parameters IE is received.

42.2.2.11.3.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present, no PSI2 broadcast in the cell

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a fixed allocation open-ended TBF.
2. Before the current allocation expires, MS sends PACKET RESOURCE REQUEST.
3. Prior to T3168 expiring, MS receives a new allocation containing Frequency Parameters IE with MA_NUMBER not supported. (PSI2 is not present.)
4. MS performs an abnormal release with random access.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	Cell A: MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCK	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Cell A: With unsupported MA_NUMBER.
6	SS		Verify MS does not transmit more than 6 RLC data blocks from previous allocation.
7	MS -> SS	CHANNEL REQUEST	Cell A: Random access
8	SS		Verify MS does not continue to transmit RLC data blocks from previous allocation.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Exactly 40 bits are set to 1.

PACKET UPLINK ASSIGNMENT message in step 5:

Frequency Parameters IE	
- ARFCN	<some frequency supported by the MS>
- MA_NUMBER	0 - a GPRS mobile allocation received in a PSI2 message

42.2.3 Fixed Allocation / Uplink Transfer with Downlink TBF Establishment

42.2.3.1 Fixed Allocation / Uplink Transfer with Downlink TBF Establishment/T3190

42.2.3.1.1 Fixed Allocation / Uplink Transfer with Downlink TBF Establishment/ T3190/Half-Duplex

42.2.3.1.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS multislot class 19 and 24.

42.2.3.1.1.2 Conformance Requirement

During an uplink fixed allocation TBF, the network may initiate a downlink TBF by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message on the PACCH.

The downlink radio resource is assigned to the mobile station in a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message. The assigned timeslot configuration of the simultaneous uplink and downlink TBF must be compliant with the mobile station's multislot class, and must allow the performing of neighbour cell power measurements as described in 8.1.2.7.

On receipt of an assignment message the mobile station shall follow the procedure below.

If the mobile station is assigned to operate in half duplex mode, the network shall wait for the mobile station to finish its current uplink resource allocation, and for the TBF starting time to elapse, if present, before sending RLC data blocks on the downlink.

Whenever a mobile station operating on an uplink TBF in half duplex mode receives a complete assignment on the PACCH the mobile station shall complete the currently assigned fixed allocation. If the uplink TBF is not completed the mobile station shall, after expiry of the TBF starting time, if present, or if the TBF starting time has already expired, save the RLC state variables associated with the uplink TBF and suspend and save the state of the following timers :

T3182 - Wait for Acknowledgement

T3184 - No Ack/Nack Received

T3188 - Allocation Exhausted

Whenever a mobile station operating on an uplink TBF in half duplex mode receives a complete downlink assignment on the PACCH and has previously saved the state of the downlink TBF and has not since entered idle mode, the mobile station shall restore the saved downlink RLC state variables and timer values.

The mobile station shall then act upon the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message.

When receiving the PACKET DOWNLINK ASSIGNMENT message and after waiting the TBF Starting Time when applicable, the mobile station starts timer T3190. The timer is reset when receiving the first valid RLC/MAC block.

References

GSM 04.60, subclause 8.1.1.3.5, 7.2.1.1

42.2.3.1.1.3 Test purpose

Verify that an MS operating an uplink TBF in half duplex mode can correctly respond to a PACKET DOWNLINK ASSIGNMENT by completing the current fixed allocation and then act upon the PACKET DOWNLINK ASSIGNMENT. Verify that the MS receives downlink RLC data blocks when the first one is received within T3190.

42.2.3.1.1.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a fixed allocation open-ended TBF in half duplex mode. This is a TBF with 2 timeslots uplink with the assignment forcing the MS into half duplex mode. In this mode, the MS is not required to read the downlink PACCH, except when there are gaps in the uplink allocation.

2. Before the current allocation expires, the MS recieves a PACKET DOWNLINK ASSIGNMENT on the PACCH, during a gap in the uplink allocation.

3. After the current allocation expires, the MS acts on the PACKET DOWNLINK ASSIGNMENT and receives the first RLC data block within T3190. During the downlink TBF, the MS does not continue the uplink TBF or request new resources.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	With starting time after current uplink allocation expires.
6	MS -> SS	RLC DATA BLOCKS	Verify MS continues to transmit RLC data blocks from previous allocation until the allocation is exhausted.
7	MS		Waits until starting time in step 5 arrives. - MS starts T3190
8	SS -> MS	RLC DATA BLOCK	Sent (.8*T3190) seconds after step 7.
9	SS -> MS	RLC DATA BLOCKS	SS transmits RLC data blocks
10	SS		Verify MS does not request new uplink resources, or continue the uplink TBF during the downlink.
11	SS -> MS	RLC DATA BLOCK	SS transmits RLC data block with valid RRBP field (polling).
12	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks. Sent in block specified by RRBP field.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- HALF_DUPLEX_MODE	1 – half duplex TBF
- TIMESLOT ALLOCATION	Two timeslots assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Allocates 100 RLC blocks, with periodic gaps to receive PACCH.

PACKET DOWNLINK ASSIGNMENT message in step 5:

- TIMESLOT ALLOCATION Frequency Parameters IE - TBF_STARTING_TIME	Six timeslots assigned <some AFN after the current fixed allocation bitmap expires>

42.2.3.1.2 Fixed Allocation / Uplink Transfer with Downlink TBF Establishment/ T3190/Non Half-Duplex

42.2.3.1.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS multislot class 10 and higher.

42.2.3.1.2.2 Conformance Requirement

During an uplink fixed allocation TBF, the network may initiate a downlink TBF by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message on the PACCH.

The downlink radio resource is assigned to the mobile station in a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message. The assigned timeslot configuration of the simultaneous uplink and downlink TBF must be compliant with the mobile station's multislot class, and must allow the performing of neighbour cell power measurements as described in 8.1.2.7.

On receipt of an assignment message the mobile station shall follow the procedure below.

If the mobile station is not assigned to operate half duplex mode, the mobile station shall, after expiry of the TBF starting time, if present, act upon the complete downlink assignment, and start timer T3190.

The mobile station shall then act upon the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message.

When receiving the PACKET DOWNLINK ASSIGNMENT message and after waiting the TBF Starting Time when applicable, the mobile station starts timer T3190. The timer is reset when receiving the first valid RLC/MAC block.

References

GSM 04.60, subclause 8.1.1.3.5, 7.2.1.1

42.2.3.1.2.3 Test purpose

Verify that an MS operating an uplink TBF in non half duplex mode can correctly respond to a PACKET DOWNLINK ASSIGNMENT by acting upon the PACKET DOWNLINK ASSIGNMENT during the uplink TBF. Verify that the MS receives downlink RLC data blocks when the first one is received within T3190.

42.2.3.1.2.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a fixed allocation open-ended TBF in non half duplex mode. This is a TBF with 2 timeslots uplink with the assignment forcing the MS into non half duplex mode. In this mode, the MS reads the downlink PACCH on the natural timeslot.
2. Before the current allocation expires, the MS recieves a PACKET DOWNLINK ASSIGNMENT on the PACCH, with starting time before the current allocation expires.
3. Before the current allocation expires, the MS acts on the PACKET DOWNLINK ASSIGNMENT and receives the first RLC data block within T3190. During the downlink TBF, the MS continues the uplink TBF.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	With starting time before current uplink allocation expires. Sent on assigned PACCH.
6	MS -> SS	RLC DATA BLOCKS	Verify MS continues to transmit RLC data blocks from previous allocation until the starting time in step 5 arrives.
7	MS		.- MS starts T3190
8	MS -> SS	RLC DATA BLOCKS	Verify MS continues to transmit RLC data blocks from previous allocation.
9	SS -> MS	RLC DATA BLOCK	Sent 4.5sec after step 7.
10	SS -> MS	RLC DATA BLOCKS	SS transmits RLC data blocks
11	SS -> MS	RLC DATA BLOCK	SS transmits RLC data block with valid RRBP field (polling).
12	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks. Sent in block specified by RRBP field.
13	SS		Verify MS continues the uplink TBF from the previous allocation, during the downlink TBF.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation - HALF_DUPLEX_MODE - TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH - ALLOCATION_BITMAP	 0 – non half duplex TBF Two timeslots assigned - PDCH2 and PDCH3 0 – blocks <any suitable value > Allocates 100 RLC blocks

PACKET DOWNLINK ASSIGNMENT message in step 5:

TIMESLOT_ALLOCATION Frequency Parameters IE - TBF_STARTING_TIME	3 timeslots assigned – PDCH1, PDCH2 and PDCH3 (multislot class is not violated) <some AFN before the current fixed allocation bitmap expires>

42.2.3.2 Fixed Allocation / Uplink Transfer with Downlink TBF Establishment/ Ending uplink TBF

42.2.3.2.1 Fixed Allocation / Uplink Transfer with Downlink TBF Establishment/ Ending uplink TBF/ Half-Duplex

42.2.3.2.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS multislot class 19 and 24.

42.2.3.2.1.2 Conformance Requirement

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 (see subclause 9.3.1) 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 subclause 9.3.2.3 or 9.3.3.3.

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 the mobile station is operating in half duplex mode and received a downlink assignment during the countdown or while timer T3182 was running, it shall then act on the downlink assignment.

References

GSM 04.60, subclause 8.1.1.4, 9.3.2.3

42.2.3.2.1.3 Test purpose

Verify that an MS operating an uplink TBF in half duplex mode can correctly respond to a PACKET TBF RELEASE message to end the uplink TBF before starting the downlink TBF.

42.2.3.2.1.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a fixed allocation open-ended TBF in half duplex mode.
2. Before the current allocation expires, the MS recieves a PACKET TBF RELEASE.
3. During the countdown procedure, the MS receives a PACKET DOWNLINK ASSIGNMENT.
4. After the uplink TBF is ended, the MS acts on the PACKET DOWNLINK ASSIGNMENT and begins the downlink TBF.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	With starting time after current uplink allocation expires.
6	MS -> SS	RLC DATA BLOCKS	Verify MS continues to transmit RLC data blocks from previous allocation.
7	SS -> MS	PACKET TBF RELEASE	Release of the uplink TBF. Sent when 200 octets left to send in the PDU. Cause value – normal release
8	MS -> SS	RLC DATA BLOCKS	MS starts countdown procedure so that uplink TBF ends at the LLC PDU boundary. Any extra remaining bytes are filled with 2B.
9	SS		Verify MS does not request new uplink resources, or continue the uplink TBF during the downlink.
10	SS -> MS	RLC DATA BLOCKS	SS transmits RLC data blocks after the starting time
11	SS -> MS	RLC DATA BLOCK	SS transmits RLC data block with valid RRBP field (polling).
12	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks. Sent in block specified by RRBP field.
13	SS		SS ends the downlink TBF

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- HALF_DUPLEX_MODE	1 – half duplex TBF
- TIMESLOT ALLOCATION	Two timeslots assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Allocates 100 RLC blocks, with periodic gaps to receive PACCH.

PACKET DOWNLINK ASSIGNMENT message in step 5:

TIMESLOT_ALLOCATION	6 timeslots assigned
Frequency Parameters IE	
- TBF_STARTING_TIME	<some AFN after the current fixed allocation bitmap expires>

PACKET TBF RELEASE message in step 7:

Cause Value	0000 – Normal release
UPLINK_RELEASE	1 – Uplink TBF is released

42.2.3.2.2 Fixed Allocation / Uplink Transfer with Downlink TBF Establishment/ Ending uplink TBF/ Non Half-Duplex

42.2.3.2.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS multislot class 10 and above.

42.2.3.2.2.2 Conformance Requirement

During an uplink fixed allocation TBF, the network may initiate a downlink TBF by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message on the PACCH.

The downlink radio resource is assigned to the mobile station in a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message. The assigned timeslot configuration of the simultaneous uplink and downlink TBF must be compliant with the mobile station's multislot class, and must allow the performing of neighbour cell power measurements as described in 8.1.2.7.

On receipt of an assignment message the mobile station shall follow the procedure below.

If the mobile station is not assigned to operate half duplex mode, the mobile station shall, after expiry of the TBF starting time, if present, act upon the complete downlink assignment, and start timer T3190.

The mobile station shall then act upon the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message.

When receiving the PACKET DOWNLINK ASSIGNMENT message and after waiting the TBF Starting Time when applicable, the mobile station starts timer T3190. The timer is reset when receiving the first valid RLC/MAC block.

References

GSM 04.60, subclause 8.1.1.3.5, 7.2.1.1

42.2.3.2.3.3 Test purpose

Verify that an MS operating an uplink and downlink TBF in non half duplex mode can correctly respond to a PACKET TBF RELEASE by using the countdown procedure.

42.2.3.2.3.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a fixed allocation open-ended TBF in non half duplex mode.

2. Before the current allocation expires, the MS recieves a PACKET DOWNLINK ASSIGNMENT on the PACCH, with starting time before the current allocation expires.
3. Before the starting time occurs, the MS recieves a PACKET TBF RELEASE.
4. The MS starts the downlink TBF during the countdown procedure, and ends the uplink TBF when the countdown procedure is over.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	With starting time before current uplink allocation expires. Sent on assigned PACCH.
6	MS -> SS	RLC DATA BLOCKS	Verify MS continues to transmit RLC data blocks from previous allocation.
7	SS -> MS	PACKET TBF RELEASE	Release of the uplink TBF. Sent when 200 octets left to send in the PDU. Cause value – normal release
8	MS -> SS	RLC DATA BLOCKS	MS starts countdown procedure so that uplink TBF ends at the LLC PDU boundary.
9	SS -> MS	RLC DATA BLOCKS	SS transmits RLC data blocks at the starting time
10	SS -> MS	PACKET UPLINK ACK/NACK	Final Ack = 1
11	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	
12	MS -> SS	PACKET DOWNLINK ACK/NACK	Verify MS sends at least one Ack/Nack to verify it is receiving downlink RLC data blocks.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- HALF_DUPLEX_MODE	0 – non half duplex TBF
- TIMESLOT ALLOCATION	Two timeslots assigned – PDCH2 and PDCH3
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Allocates 100 RLC blocks

PACKET DOWNLINK ASSIGNMENT message in step 5:

TIMESLOT_ALLOCATION Frequency Parameters IE - TBF_STARTING_TIME	3 timeslots assigned – PDCH1, PDCH2 and PDCH3 (multislot class is not violated) <some AFN before the current fixed allocation bitmap expires>

42.2.3.3 Fixed Allocation/ Uplink Transfer with Downlink TBF Establishment/ Abnormal cases

42.2.3.3.1 Fixed Allocation/ Uplink Transfer with Downlink TBF Establishment/ Abnormal cases / Violation of multi-slot capabilities

42.2.3.3.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.3.3.1.2 Conformance Requirement

During an uplink fixed allocation TBF, the network may initiate a downlink TBF by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message on the PACCH.

- If the information in the PACKET TIMESLOT RECONFIGURE does not properly specify an uplink and downlink PDCH or violates the mobile station's multislot capabilities, the mobile station shall perform an abnormal release with random access (see subclause 8.7.2).

Abnormal Release with Random Access:The mobile station shall abort all TBFs in progress and its associated resources, return to the CCCH or PCCCH and initiate establishment of a new uplink TBF as defined in subclause 7.1.

References

GSM 04.60, subclause 8.1.1.3.5, 8.1.1.3.5.1,8.7.2

42.2.3.3.1.3 Test purpose

Verify that an MS in an uplink TBF performs abnormal release with random access upon receipt of a PACKET TIMESLOT RECONFIGURE message that violates its multislot capabilities.

42.2.3.3.1.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a fixed allocation open-ended TBF in non half duplex mode on one PDCH.

2. Before the current allocation expires, the MS recieves a PACKET TIMESLOT RECONFIGURE message on the PACCH, with downlink assignment violating its multislot class capabilities.

3. MS performs abnormal release (stops the uplink TBF in progress) with random access.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET TIMESLOT RECONFIGURE	With downlink assignment violating the multislot class capabilities of the MS.
6	SS		Verify MS does not transmit on previously assigned PDCH.
7	MS -> SS	PACKET CHANNEL REQUEST	Sent on cell A.

Specific Message Contents

Based on the multislot class of the MS, assign uplink and downlink timeslots as follows in order to violate the multislot class of the MS by violating the Ttb parameter.

Multislot Class	RX slots assigned	TX slots assigned
1	1	0
2	2.3	2
3	0.1	0
4	1.2.3	1
5	1.2	0.1
6	1.2.3	1
7	1.2.3	1
8	2.3.4.5	3
9	1.2.3	1.2
10	1.2.3.4	2
11	1.2.3.4	2
12	1.2.3.4	2

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- HALF_DUPLEX_MODE - TIMESLOT ALLOCATION - BLOCKS_OR_BLOCK_PERIODS - ALLOCATION_BITMAP_LENGTH - ALLOCATION_BITMAP	0 – non half duplex TBF <see above chart> 0 – blocks <any suitable value > Allocates 100 RLC blocks

PACKET TIMESLOT RECONFIGURE message in step 5:

DOWNLINK_TIMESLOT_ALLOCATION Frequency Parameters IE - TBF_STARTING_TIME	<see above chart> <some AFN before the current fixed allocation bitmap expires>

42.2.3.3.2 Fixed Allocation/ Uplink Transfer with Downlink TBF Establishment/ Abnormal cases / No defined PDCH

42.2.3.3.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS multislot class 2.

42.2.3.3.2.2 Conformance Requirement

During an uplink fixed allocation TBF, the network may initiate a downlink TBF by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message on the PACCH.

- If the information available in the mobile station, after the reception of a PACKET DOWNLINK ASSIGNMENT message does not satisfactorily define a PDCH, the mobile station shall ignore the PACKET DOWNLINK ASSIGNMENT message.

References

GSM 04.60, subclause 8.1.1.3.5, 8.1.1.3.5.1

42.2.3.3.2.3 Test purpose

Verify that an MS in an uplink TBF ignores a PACKET DOWNLINK ASSIGNMENT message that does not define a PDCH.

42.2.3.3.2.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH not present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

The way to initiate an uplink transfer,

Test Procedure

1. MS is triggered to begin an uplink data transfer and enters a fixed allocation open-ended TBF in non half duplex mode on one PDCH.
2. Before the current allocation expires, the MS recieves a PACKET DOWNLINK ASSIGNMENT message on the PACCH, with no defined PDCH.
3. MS continues uplink TBF and does not begin a downlink TBF.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	MS		Trigger the MS to initiate an uplink packet transfer containing 1000 octets.
2			Bring the MS into packet uplink transfer mode on cell A by the generic procedure defined in the table 42.2.1.2/1b or 42.2.1.2/2b.
3	MS -> SS	RLC DATA BLOCK	MS transmits RLC block only when TBF starting time occurs
4	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	With insufficiently defined PDCH in the message.
6	MS -> SS	RLC DATA BLOCKS	MS continues to transmit RLC data blocks according to allocation from step 2.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 2:

Fixed allocation	
- HALF_DUPLEX_MODE	0 – non half duplex TBF
- TIMESLOT ALLOCATION	One timeslot assigned
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	<any suitable value >
- ALLOCATION_BITMAP	Allocates 100 RLC blocks

PACKET DOWNLINK ASSIGNMENT message in step 5:

DOWNLINK_TIMESLOT_ALLOCATION	<one timeslot, such that multislot class is not violated>
Frequency Parameters IE	
- ARFCN	300 (invalid ARFCN)

42.2.4 Fixed Allocation / Downlink Transfer with Uplink TBF Establishment

42.2.4.1 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168

42.2.4.1.1 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168/ Expiry

42.2.4.1.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.4.1.1.2 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request,

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure.
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

- If timer T3168 expires, the mobile station shall retransmit the Channel Request Description information element in the next PACKET DOWNLINK ACK/NACK message unless it has been transmitted four times in which case the mobile station shall perform an abnormal release with random access. If the downlink TBF is released, including expiry of timer T3192, before expiry of timer T3168 the mobile station shall stop timer T3168 and perform an abnormal release with random access.
- Abnormal Release with Random Access: The mobile station shall abort all TBFs in progress and its associated resources, return to the CCCH or PCCCH and initiate establishment of a new uplink TBF as defined in subclause 7.1.

References

GSM 04.60, subclause 8.1.2.5, 8.7.2

42.2.4.1.1.3 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS makes the request 4 times. Verify that if uplink resources are not assigned within T3168, the MS performs abnormal release with random access.

42.2.4.1.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to the polls.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field, and starts timer T3168.
6. When T3168 expires, MS repeats the Channel Request Description request. (This step is done 3 times, for a total of 4 Channel Request Descriptions.)
7. MS sends PACKET CHANNEL REQUEST again after returning to packet idle mode.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS, 1/10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated until the next Channel Request Description is sent in step 8.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	MS requests additional resources (message contains Channel Request Description IE) - Sent more than T3168 seconds after previous request for additional resources - MS re-starts timer T3168
9			Steps 7 and 8 are repeated 2 more times such that a total of 4 Channel Request Descriptions are sent.
10	MS -> SS	PACKET CHANNEL REQUEST	Sent after T3168 seconds after step 8 is executed the last time.

PACKET SYSTEM INFORMATION MESSAGE 1 (throughout):

T3168	1 (1 second)

42.2.4.1.2 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168/ Stop with Packet Uplink Assignment

42.2.4.1.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.4.1.2.2 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request,

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure.
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall follow the procedure below. On reception of a complete uplink assignment the mobile station shall stop timer T3168.

References

GSM 04.60, subclause 8.1.2.5

42.2.4.1.2.3 Test purpose

Verify that during a downlink TBF, when the MS requests additional resources, that the MS stops timer T3168 when a PACKET UPLINK ASSIGNMENT is received.

42.2.4.1.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to the polls.
4. MS is triggered to begin an uplink transfer.

5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field, and starts timer T3168.

6. When T3168 expires, MS repeats the Channel Request Description request.

7. MS receives a PACKET UPLINK ASSIGNMENT message with a starting time such that more Channel Requests could be sent before the starting time.

8. MS does not repeat the Channel Request Description request.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS, 1/10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated until the next Channel Request Description is sent in step 8.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	MS requests additional resources (message contains Channel Request Description IE) - Sent after T3168seconds after previous request for additional resources - MS re-starts timer T3168
9	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent (.5*T3168) seconds after step 8. Allocates one uplink timeslot (same timeslot as the downlink assignment) With valid RRBP field (polling). With starting time T3168*2 seconds from now.
10	MS -> SS	PACKET CONTROL ACK	Verify MS does not send additional Channel Request Description IE.

PACKET SYSTEM INFORMATION MESSAGE 1 (throughout):

T3168	1 (1 second)

42.2.4.2 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/ Packet Uplink Assignment

42.2.4.2.1 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/Packet Uplink Assignment/ Non half-duplex

42.2.4.2.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.4.2.1.2 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request,

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure.

- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall follow the procedure below. On reception of a complete uplink assignment the mobile station shall stop timer T3168.

If the mobile station is not assigned to operate half duplex mode, the mobile station shall, after expiry of the TBF starting time, if present, act upon the complete uplink assignment.

The mobile station shall then switch to the assigned uplink PDCHs and begin to send RLC data blocks on the assigned PDCH(s). The TLLI shall not be included in any of the uplink RLC data blocks in that case.

References

GSM 04.60, subclause 8.1.2.5

42.2.4.2.1.3 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS obeys the uplink assignment while maintaining the downlink TBF.

42.2.4.2.1.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to the polls.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field.
6. MS receives a PACKET UPLINK ASSIGNMENT message.
7. MS acts on the PACKET UPLINK ASSIGNMENT, and enters a concurrent TBF.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 8.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated until the next Channel Request Description is sent in step 8.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent (0.5*T3168) seconds after step 7. Allocates one uplink PDCH.
9	MS -> SS	RLC DATA BLOCK	Verify MS sends data block on uplink resource assigned in step 8 at the starting time.
10	SS -> MS	RLC DATA BLOCK	In same block as step 9: with valid RRBP field (polling)
11	MS -> SS	RLC DATA BLOCKS	Verify MS sends data block on uplink resource assigned in step 8 (next block following step 9).
12	MS -> SS	PACKET DOWNLINK ACK/NACK	In block specified by step 10. (4^{th} block of allocation assigned in step 8)
13	SS		Verify no uplink data sent by MS in 5^{th} and 6^{th} blocks of allocation assigned in step 8.
14	MS -> SS	RLC DATA BLOCK	Sent in 7^{th} block of uplink allocation assigned in step 8.
15	SS -> MS	RLC DATA BLOCK	Sent in 7^{th} block of allocation (same block as step 14) With valid RRBP field (polling).
16	MS -> SS	RLC DATA BLOCK	Sent in 8^{th} and 9^{th} block of uplink allocation assigned in step 8.
17	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent in 10^{th} block of allocation, in response to poll from step 15.

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	10000000
TBF STARTING TIME	<IE not present>

PACKET UPLINK ASSIGNMENT message in step 8:

TBF STARTING TIME	<some suitable value within 100 frames of current frame>
Fixed allocation	
- TIMESLOT ALLOCATION	10000000
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	10
- ALLOCATION_BITMAP	0111000011

DOWNLINK RLC DATA BLOCK in step 10 and 15:

RRBP	00 – Response shall be sent by MS in N+13 frames.
S/P	1 – RRBP field is valid

42.2.4.2.2 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/Packet Uplink Assignment/ Half-duplex

42.2.4.2.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS multi-slot classes 19-29.

42.2.4.2.2.2 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request,

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure.
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall follow the procedure below. On reception of a complete uplink assignment the mobile station shall stop timer T3168.

If the mobile station is assigned to operate in half duplex mode, the mobile station shall, after expiry of the TBF starting time, if present, stop the downlink TBF, save the RLC state variables associated with the downlink TBF and save the state of the following timers:

T3190 - Wait for Valid Downlink Data Received from the Network

T3192 - Wait for Release of the TBF after reception of the final block

The mobile station shall then switch to the assigned uplink PDCHs and begin to send RLC data blocks on the assigned PDCH(s). The TLLI shall not be included in any of the uplink RLC data blocks in that case.

References

GSM 04.60, subclause 8.1.2.5

42.2.4.2.2.3 Test purpose

Verify that during a downlink TBF, when the MS requests additional resources, that the MS stops the downlink TBF when the uplink TBF is assigned to operate in half-duplex mode.

42.2.4.2.2.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to each poll.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field.
6. MS receives a PACKET UPLINK ASSIGNMENT message.
7. MS acts on the PACKET UPLINK ASSIGNMENT, by stopping the downlink TBF, and starting the uplink TBF.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 8.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE - MS starts timer T3168
7			Steps 2 and 3 are repeated as often as necessary until step 8.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent (.5*T3168) seconds after step 7. Allocates one uplink PDCH.
9	MS -> SS	RLC DATA BLOCK	Verify MS sends data block on uplink resource assigned in step 8 at the starting time.
10	SS -> MS	RLC DATA BLOCK	In same block as step 9: with valid RRBP field (polling)
11	MS -> SS	RLC DATA BLOCK	Verify MS sends data block on uplink resource assigned in step 8 (next block following step 9).
12	SS		Verify MS does not send DOWNLINK ACK/NACK in response to downlink data block in step 10.
13	SS		Verify no uplink data sent by MS in 5th and 6th blocks of allocation assigned in step 8.
14	MS -> SS	RLC DATA BLOCK	Sent in 7th block of uplink allocation assigned in step 8.
15	SS -> MS	RLC DATA BLOCK	Sent in 7th block of allocation (same block as step 14) With valid RRBP field (polling).
16	MS -> SS	RLC DATA BLOCKS	Sent in 8th and 9th block of uplink allocation assigned in step 8.
17	SS		Verify MS does not send DOWNLINK ACK/NACK in response to downlink data block in step 15.

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	10000000
TBF STARTING TIME	<IE not present>

PACKET UPLINK ASSIGNMENT message in step 8:

TBF STARTING TIME	<some suitable value within 100 frames of current frame>
Fixed allocation	
- HALF_DUPLEX_MODE	1 – MS operates in half-duplex mode
- TIMESLOT ALLOCATION	10000000
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	10
- ALLOCATION_BITMAP	0111000011

DOWNLINK RLC DATA BLOCK in step 10 and 15:

RRBP	00 – Response shall be sent by MS in N+13 frames.
S/P	1 – RRBP field is valid

42.2.4.3 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/Packet Timeslot Reconfigure

42.2.4.3.1 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/Packet Timeslot Reconfigure/Starting time with AFN encoding

42.2.4.3.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.4.3.1.2 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request,

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure.
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall follow the procedure below. On reception of a complete uplink assignment the mobile station shall stop timer T3168.

If the mobile station is not assigned to operate half duplex mode, the mobile station shall, after expiry of the TBF starting time, if present, act upon the complete uplink assignment.

The mobile station shall then switch to the assigned uplink PDCHs and begin to send RLC data blocks on the assigned PDCH(s). The TLLI shall not be included in any of the uplink RLC data blocks in that case.

References

GSM 04.60, subclause 8.1.2.5

42.2.4.3.1.3 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS obeys the PACKET TIMESLOT RECONFIGURE message at the starting time and enters the uplink TBF.

42.2.4.3.1.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to each poll.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field.
6. MS receives a PACKET TIMESLOT RECONFIGURE message.
7. MS acts on the PACKET TIMESLOT RECONFIGURE at the appropriate starting time and enters a concurrent TBF.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 8.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated as often as necessary until step 8.
8	SS -> MS	PACKET TIMESLOT RECONFIGURE	Sent (0.5*T3168) seconds after step 7. Allocates one uplink PDCH.
9	MS -> SS	RLC DATA BLOCK	Verify MS sends data block on uplink resource assigned in step 8 at the starting time.
10	SS -> MS	RLC DATA BLOCK	In same block as step 9: with valid RRBP field (polling)
11	MS -> SS	RLC DATA BLOCK	Verify MS sends data block on uplink resource assigned in step 8 (next block following step 9).
12	MS -> SS	PACKET DOWNLINK ACK/NACK	In block specified by step 10. (4th block of allocation assigned in step 8)
13	SS		Verify no uplink data sent by MS in 5th and 6th blocks of allocation assigned in step 8.
14	MS -> SS	RLC DATA BLOCK	Sent in 7th block of uplink allocation assigned in step 8.
15	SS -> MS	RLC DATA BLOCK	Sent in 7th block of allocation (same block as step 14) With valid RRBP field (polling).
16	MS -> SS	RLC DATA BLOCKS	Sent in 8th and 9th block of uplink allocation assigned in step 8.
17	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent in 10th block of allocation, in response to poll from step 15.

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	10000000
TBF STARTING TIME	<IE not present>

PACKET TIMESLOT RECONFIGURE message in step 8:

TBF STARTING TIME	0 – AFN encoding
- AFN	<some AFN within 50 frames of current AFN>
Fixed allocation	
- TIMESLOT ALLOCATION	10000000
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	10
- ALLOCATION_BITMAP	0111000011
Downlink Allocation	Same as already assigned

DOWNLINK RLC DATA BLOCK in step 10 and 15:

RRBP	00 – Response shall be sent by MS in N+13 frames.
S/P	1 – RRBP field is valid

42.2.4.3.2 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/Packet Timeslot Reconfigure/Starting time with relative encoding

42.2.4.3.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.4.3.2.2 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request,

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure.
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message the mobile station shall follow the procedure below. On reception of a complete uplink assignment the mobile station shall stop timer T3168.

If the mobile station is not assigned to operate half duplex mode, the mobile station shall, after expiry of the TBF starting time, if present, act upon the complete uplink assignment.

The mobile station shall then switch to the assigned uplink PDCHs and begin to send RLC data blocks on the assigned PDCH(s). The TLLI shall not be included in any of the uplink RLC data blocks in that case.

References

GSM 04.60, subclause 8.1.2.5

42.2.4.3.2.3 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS obeys the PACKET TIMESLOT RECONFIGURE message at the starting time and enters the uplink TBF.

42.2.4.3.2.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to each poll.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field.
6. MS receives a PACKET TIMESLOT RECONFIGURE message.
7. MS acts on the PACKET TIMESLOT RECONFIGURE message at the starting time and enters a concurrent TBF.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 8.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated as often as necessary until step 8.
8	SS -> MS	PACKET TIMESLOT RECONFIGURE	Sent (0.5*T3168) seconds after step 7. Allocates one uplink PDCH.
9	MS -> SS	RLC DATA BLOCKS	Verify MS sends data block on uplink resource assigned in step 8 at the starting time.
10	SS -> MS	RLC DATA BLOCK	In same block as step 9: with valid RRBP field (polling)
11	MS -> SS	RLC DATA BLOCK	Verify MS sends data block on uplink resource assigned in step 8 (next block following step 9).
12	MS -> SS	PACKET DOWNLINK ACK/NACK	In block specified by step 10. (4th block of allocation assigned in step 8)
13	SS		Verify no uplink data sent by MS in 5th and 6th blocks of allocation assigned in step 8.
14	MS -> SS	RLC DATA BLOCK	Sent in 7th block of uplink allocation assigned in step 8.
15	SS -> MS	RLC DATA BLOCK	Sent in 7th block of allocation (same block as step 14) With valid RRBP field (polling).
16	MS -> SS	RLC DATA BLOCKS	Sent in 8th and 9th block of uplink allocation assigned in step 8.
17	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent in 10th block of allocation, in response to poll from step 15.

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	10000000
TBF STARTING TIME	<IE not present>

PACKET TIMESLOT RECONFIGURE message in step 8:

TBF STARTING TIME	1 – Relative FN encoding
- AFN	<some AFN within 50 frames of current AFN>
Fixed allocation	
- TIMESLOT ALLOCATION	10000000
- BLOCKS_OR_BLOCK_PERIODS	0 – blocks
- ALLOCATION_BITMAP_LENGTH	10
- ALLOCATION_BITMAP	0111000011

DOWNLINK RLC DATA BLOCK in step 10 and 15:

RRBP	00 – Response shall be sent by MS in N+13 frames.
S/P	1 – RRBP field is valid

42.2.4.4 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/Packet Access Reject

42.2.4.4.1 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/Packet Access Reject/ With WAIT_INDICATION

42.2.4.4.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.4.4.1.2 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request,

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure.

- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET ACCESS REJECT message containing a WAIT_INDICATION field in a Reject structure addressed to the mobile station, the mobile station shall stop timer T3168 and start timer T3172 with the indicated value (Wait Indication). The mobile station is not allowed to make a new attempt for packet access in the same cell until timer T3172 expires, but may attempt packet access in an other cell after successful cell reselection. When timer T3172 expires, if the downlink TBF is still active the mobile station shall initiate the establishment of an uplink TBF using the procedure in this subclause. If no TBF is active, the mobile station shall initiate the establishment of an uplink TBF on CCCH or PCCCH.

References

GSM 04.60, subclause 8.1.2.5

42.2.4.4.1.3 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS obeys a PACKET ACCESS REJECT message with WAIT_INDICATION by waiting the specified time and then requesting uplink resources again.

42.2.4.4.1.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to each poll.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field.
6. MS receives a PACKET ACCESS REJECT message with WAIT_INDICATION.
7. MS acts on the PACKET ACCESS REJECT by waiting the indicated time, and then requests resources again.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 8.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated as often as necessary until step 8.
8	SS -> MS	PACKET ACCESS REJECT	Sent (0.5 * T3168) seconds after step 7. - MS starts T3172
9			Steps 2 and 3 are repeated as often as necessary until step 10.
10	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent after T3172 seconds after step 8. Message contains Channel Request Description IE.

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	10000000
TBF STARTING TIME	<IE not present>

PACKET ACCESS REJECT message in step 8:

TLLI	Addressing this MS
WAIT_INDICATION	2
WAIT_INDICATION_SIZE	0 – WAIT_INDICATION in units of seconds

42.2.4.4.2 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/Packet Access Reject/No WAIT_INDICATION

42.2.4.4.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.4.4.2.2 Conformance Requirement

The mobile station may request establishment of an uplink transfer during a downlink TBF by including a Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message Initiation is triggered by a request from upper layers to transfer a LLC PDU. The request from upper layers specifies a Radio Priority to be associated with the packet transfer. Upon such a request,

- if access to the network is allowed, according to the latest values for authorized special access classes that the mobile station has received (see subclause 7.1.1), the mobile station shall initiate the packet access procedure.
- otherwise, the RR sublayer in the mobile station shall reject the request.

The mobile station initiates the packet access procedure by sending the Channel Request Description information element in the PACKET DOWNLINK ACK/NACK message on the PACCH and starting timer T3168.

On receipt of a PACKET ACCESS REJECT message that contains a Reject structure addressed to the mobile station without a WAIT_INDICATION field, the mobile station shall stop timer T3168 and shall perform an abnormal release with system information (see subclause 8.7.3).

References

GSM 04.60, subclause 8.1.2.5

42.2.4.4.2.3 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS obeys a PACKET ACCESS REJECT message without WAIT_INDICATION by performing abnormal release.

42.2.4.4.2.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to each poll.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field.
6. MS receives a PACKET ACCESS REJECT message without WAIT_INDICATION.
7. MS performs abnormal release.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 8.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated as often as necessary until step 8.
8	SS -> MS	PACKET ACCESS REJECT	Sent (0.5*T3168) seconds after step 7 (no wait time) - MS performs abnormal release.
9	SS -> MS	RLC DATA BLOCKS	Sent on assigned downlink PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
10	SS		Verify MS does not respond to poll.

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	10000000
TBF STARTING TIME	<IE not present>

PACKET ACCESS REJECT message in step 8:

TLLI	Addressing this MS
WAIT_INDICATION	<not present>

42.2.4.4.3 Fixed Allocation/ Downlink Transfer with Uplink TBF Establishment/Packet Access Reject/With Polling

42.2.4.4.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.2.4.4.3.2 Conformance Requirement

If the RRBP field is received as part of an RLC/MAC block containing an RLC/MAC control block containing any message except Packet Paging Request, Packet Access Reject, and Packet Queueing Notification, the mobile station shall transmit a PACKET CONTROL ACKNOWLEDGEMENT message in the uplink radio block specified. If the RRBP field is received as part of an RLC/MAC block containing an RLC/MAC control block containing a Packet Paging Request, Packet Access Reject, or Packet Queueing Notification message, the mobile station shall ignore this RRBP field.

References

GSM 04.60, subclause 10.4.5

42.2.4.4.3.3 Test purpose

Verify that during a downlink TBF, when the MS requests uplink resources, that the MS ignores a poll in a PACKET ACCESS REJECT message.

42.2.4.4.3.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation, 1 in 10 specifying RRBP field (polling).
3. MS responds by sending PACKET DOWNLINK ACK/NACK messages in response to each poll.
4. MS is triggered to begin an uplink transfer.
5. MS sends next PACKET DOWNLINK ACK/NACK message with a Channel Request Description field.
6. MS receives a PACKET ACCESS REJECT message without WAIT_INDICATION and with RRBP field indicating polling.
7. MS performs abnormal release (ignoring the poll request).

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
4			Steps 2 and 3 are repeated throughout until step 8.
5	MS		MS is triggered to begin an uplink data transfer.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Message contains Channel Request Description IE. - MS starts timer T3168
7			Steps 2 and 3 are repeated as often as necessary until step 8.
8	SS -> MS	PACKET ACCESS REJECT	Sent (0.5*T3168) seconds after step 7 (no wait time), with valid RRBP field (polling). - MS performs abnormal release.
9	SS -> MS	RLC DATA BLOCKS	Sent on assigned downlink PDCH, addressed to MS, 1 in 10 with valid RRBP field (polling).
10	SS		Verify MS does not respond to previous message, and does not send a response to the poll in step 8.

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	10000000
TBF STARTING TIME	<IE not present>

PACKET ACCESS REJECT message in step 8:

RRBP	00 – Response shall be sent by MS in N+13 frames.
S/P (MAC Header)	1 – RRBP field is valid
WAIT_INDICATION	<not present>

42.2.5 Default message contents

42.2.5.1 Default message contents

The following default values of messages and the default contents of messages defined in clause 40 are used in clause 42.2.Unless indicated otherwise in clause 42.2 these shall be transmitted by the system simulator.

In this clause, decimal values are normally used. However, sometimes a hexadecimal value, indicated by an "Hex", or a binary value, indicated by a "Binary" is used.

Get rid of all uplink messages.

PACKET CHANNEL REQUEST message:

Access Type	"One phase access request" or "Two phase access request"
Multislot class	Not checked
Radio priority	Not checked
Random Reference	Not checked.

PACKET CONTROL ACKNOWLEDGEMENT message:

MESSAGE_TYPE	000001
TLLI	not checked
CTRL_ACK	not checked
spare padding	Spare Padding

PACKET DOWNLINK ASSIGNMENT message:

MESSAGE_TYPE	000100
PAGE_MODE	Normal Paging
Referenced Address	
-	1 (address is TLLI)
- TLLI	same as the value received from MS
MAC_MODE	Fixed Allocation
RLC_MODE	acknowledged mode
CONTROL_ACK	0
TIMESLOT_ALLOCATION	Assigns slot 0
REL_OR_ABS_FN	Absolute FN
Packet Timing Advance	
- {0|1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0|1<TIMING_ADVANCE_INDEX> <TIMING_ADVANCE_TIMESLOT_NUMBER>}	0 (no timing advance index)
{L|H<Frequency Parameters>}	1 (Frequency Parameters present)
- Frequency Parameters	
- TSC	value arbitrarily chosen from valid values (default 5)
-	00 (ARFCN no hopping)
- 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>}	depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN0)
- {0|1<GAMMA_TN1>}	depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN1)
- {0|1<GAMMA_TN2>}	depending on the value in TIMESLOT_ALLOCATION (default 1 GAMMA_TN2)
- GAMMA_TN2	For GSM 900, +9 dBm For DCS 1800, +6 dBm
- {0|1<GAMMA_TN3>}	depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN0)
- {0|1<GAMMA_TN4>}	depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN4)
- {0|1<GAMMA_TN5>}	depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN5)
- {0|1<GAMMA_TN6>}	depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN6)
- {0|1<GAMMA_TN7>}	depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN7)

{L|H<DOWNLINK_TFI_ASSIGNMENT>}	H (assign downlink TFI)
- DOWNLINK_TFI_ASSIGNMENT	arbitrarily chosen from valid values (default 3)
{L|H<TBF_STARTING_TIME>}	H (starting time present)
- TBF_STARTING_TIME	indicating (current frame + 13 frames)
{L|H<Measurement Mapping>}	L (no measurement mapping)
Spare padding	Spare Padding

PACKET DOWNLINK DUMMY CONTROL BLOCK message:

MESSAGE_TYPE	010000
PAGE_MODE	Normal Paging
Spare padding	Spare Padding

PACKET PAGING REQUEST message:

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 allocated during GPRS attach procedure
-	L (end of Repeated Page info)
Spare padding	Spare Padding

PACKET TIMESLOT RECONFIGURE message:

MESSAGE_TYPE	001011
GLOBAL_TFI	the TFI value of the uplink TBF or downlink TBF which this message applies (default 00101)
CHANNEL_CODING_COMMAND	arbitrarily chosen from valid values (default CS-1)
Packet Timing Advance	
- {0|1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0|1<TIMING_ADVANCE_INDEX> <TIMING_ADVANCE_TIMESLOT_NUMBER>}	0 (no timing advance index)
DOWNLINK_RLC_MODE	unacknowledged mode
CONTROL_ACK	0
{L|H<GLOBAL_TFI_ASSIGNMENT> <REL_OR_ABS_FN>}	L (not assign new TFI)
DOWNLINK_TIMESLOT_ALLOCATION	arbitrarily chosen from valid values (default 2)
{L|H<Frequency Parameters>}	L (use current parameters)
	H (Fixed allocation)
Fixed Allocation	
- Uplink timeslot allocation	0 – uplink timeslot allocation
- FINAL_ALLOCATION	0
- DOWNLINK_CONTROL_TIMESLOT	000 – PDCH0.
- Starting Frame Number Desc IE	0 (AFN encoding) (indicating current frame + 104)
- BLOCKS_OR_BLOCK_PERIODS	1 – Block Periods
spare padding	Spare Padding

PACKET UPLlNK ACK/NACK message:

MESSAGE_TYPE	001101
UPLINK_TFI	same as the TFI value of the TBF which the message applies
CHANNEL_CODING_COMMAND	same as the coding scheme of the TBF which the message applies
Ack/Nack Description	
- FINAL_ACK_INDICATION	0 (not a final ACK)
- STARTING_SEQUENCE_NUMBER	V(R)
- RECEIVED_BLOCK_BITMAP	acknowledges all data blocks transmitted by the MS
{L|H<CONTENTION_RESOLUTION_TLLI>}	L (no contention resolution TLLI)
{L|H<Packet Timing Advance>}	L (no packet timing advance)
{L|H<Power Control Parameters>}	L (no power control parameters)
{L|H<Fixed Allocation parameters>}	L (no fixed allocation parameters present)
spare padding	Spare Padding

PACKET UPLINK ASSIGNMENT message (fixed allocation):

MESSAGE_TYPE	001110
PAGE_MODE	Normal Paging
Referenced Address	
-	1 (not Global TFI)
-	0 (TLLI)
- TLLI	the value received from the MS
CHANNEL_CODING_COMMAND	arbitrarily chosen from the valid values (default CS-1)
TLLI_BLOCK_CHANNEL_CODING	arbitrarily chosen but different from CHANNEL_CODING_COMMAND
REL_OR_ABS_FN	Absolute FN
Packet Timing Advance	
- {0|1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0|1<TIMING_ADVANCE_INDEX> <TIMING_ADVANCE_TIMESLOT_NUMBER >}	0 (no timing advance index)
{L|H<Frequency Parameters>}	H (Frequency Parameters present)
- Frequency Parameters	
- TSC	arbitrarily chosen (default 5)
-	00 (ARFCN no hopping)
- ARFCN	For GSM 900, 30 For DCS 1800, 650
	H (Fixed allocation)
Fixed Allocation:	
- Uplink timeslot allocation	0 – uplink timeslot allocation
- FINAL_ALLOCATION	0
- DOWNLINK_CONTROL_TIMESLOT	000 – PDCH0.
- Starting Frame Number Desc IE	0 (AFN encoding) (indicating current frame + 104)
- BLOCKS_OR_BLOCK_PERIODS	1 – Block Periods
spare padding	Spare Padding

PACKET UPLINK ASSIGNMENT message (single block allocation):

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	arbitrarily chosen (default CS-1)
TLLI_BLOCK_CHANNEL_CODING	arbitrarily chosen but different from CHANNEL_CODING_COMMAND
REL_OR_ABS_FN	Absolute FN
Packet Timing Advance	
- {0|1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0|1<TIMING_ADVANCE_INDEX> <TIMING_ADVANCE_TIMESLOT_NUMBER >}	0 (no timing advance index)
{L|H<Frequency Parameters>}	H (Frequency Parameters present)
- Frequency Parameters	
- TSC	arbitrarily chosen (default 5)
-	00 (ARFCN no hopping)
- ARFCN	For GSM 900, 30 For DCS 1800, 650

	LH (Single block allocation)
Single block allocation	
- TIMESLOT_NUMBER	arbitrarily chosen (default slot 2)
-	H (power control parameters)
- ALPHA	0.5
- GAMMA_TN	For GSM 900, +9 dBm
	For DCS 1800, +6 dBm
- TBF_STARTING_TIME	indicating (current frame + 91 frames)
spare pending	Spare pending

ATTACH ACCEPT message:

Protocol discriminator	1000 (MM message for GPRS service)
Skip indicator	0000
Attach accept message identity	00000010
Attach result	For MS class A and B, Combined GPRS/IMSI attached
	For MS class C, GPRS only attached
Force to standby	not indicated
Periodic RA update timer	timer is deactivated
Radio priority for SMS	priority level 3
Spare half octet	Spare half octet
Routing area identification	
- MCC	001 (decimal)
- MNC	01 (decimal)
- LAC	0001H
- RAC	05H
P-TMSI signature	P-TMSI signature
Negotiated READY timer value	32 seconds
Allocated P-TMSI	P-TMSI
MS identity	TMSI

ATTACH COMPLETE message:

Protocol discriminator	MM message for GPRS
Skip indicator	0000
Attach complete message identity	00000011
Force to standby	not checked
Spare half octet	Spare half octet

42.3 Dynamic Allocation in Packet Transfer Mode

All test cases in this clause are applicable to the MS supporting the GPRS service and the activation of at least one PDP context.

42.3.1 Dynamic Allocation / Uplink Transfer

42.3.1.1 Dynamic Allocation / Uplink Transfer / Normal

42.3.1.1.1 Dynamic Allocation / Uplink Transfer / Normal / Successful

42.3.1.1.1.1 Conformance requirements

1. The mobile station shall set the TFI field of each uplink RLC data block to the TFI value assigned to the mobile station in the PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message.

2. Whenever the mobile station detects an assigned USF value on an assigned PDCH, the mobile station shall transmit either a single RLC/MAC block or a sequence of four RLC/MAC blocks on the same PDCH in the next block period(s). The time relation between an uplink block, which the mobile station shall use for transmission, and the occurrence of the USF value is defined in GSM 05.02. The number of RLC/MAC blocks to transmit is controlled by the USF_GRANULARITY parameter characterising the uplink TBF.

3. At two-phase access the mobile station does not include its TLLI in any RLC data block.

References

GSM 04.60, 8.1.1, 8.1.1.1, 7.1.3.3

GSM 05.02, 6.3.2.2.1

42.3.1.1.1.2 Test purposes

To verify that the MS

1. depending on the parameter USF_GRANULARITY, transmits one or a sequence of four RLC/MAC data block(s) in the next block period(s) on the PDCH on which it has detected its corresponding assigned USF.

2. includes the assigned TFI in each uplink RLC data blocks.

3. does not include its TLLI in any RLC data block at two phase access.

42.3.1.1.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 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 initiate packet uplink transfer data in RLC unacknowledged mode. The SS orders the MS to have two-phase access, in PACKET UPLINK ASSIGNMENT message the USF_GRANURALITY is set to 4 blocks. The SS sends the assigned USF assigned to the MS and checks that a sequence of four RLC/MAC data blocks in the next radio block period is received, and that each data block contains the correct TFI, but without TLLI. The SS assigns the USF assigned to the MS again. The check is repeated. The procedure is going on until the MS completes the packet data transfer.

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

Maximum Duration of Test

5 min.

Expected Sequence

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

23	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
24		{Completion of uplink RLC data block transfer}	USF_GRANULARITY = 1 block

42.3.1.1.2 Dynamic Allocation / Uplink Transfer / Normal / Request new resources

42.3.1.1.2.1 Conformance requirements

During the TBF, if the countdown procedure has not started, the mobile station shall ask for new or different radio resources, by sending a PACKET RESOURCE REQUEST in the following cases;

1. When the mobile station has more blocks to send than indicated in the PACKET CHANNEL REQUEST message with access type short access.
2. When the mobile station has indicated Page Response, Cell update or Mobility Management procedure as access type in the PACKET CHANNEL REQUEST and it has data to send.

References

GSM 04.60, 8.1.1

42.3.1.1.2.2 Test purposes

To verify that the MS requests for new or different radio resources by sending a PACKET RESOURCE REQUEST when the countdown procedure has not started and the MS has more blocks to send than indicated in the PACKET CHANNEL REQUEST message with access type short access.

42.3.1.1.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3, BS_CV_MAX = 3.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated in cell A and Test 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 initiate packet uplink transfer 150 octets for a short access in RLC acknowledged mode. After the MS sends the first RLC data block, the MS is triggered to send another 220 octets data. The MS requests new radio resource by sending PACKET RESOURCE REQUEST.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation one phase access}	n = 150 octets (for a short access), USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = 9, CHANNEL_CODING_COMMAND: CS-1, TLLI_BLOCK_CHANNEL_CODING: CS-1. RLC acknowledged mode, without starting time
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH, the USF assigned to the MS, on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
4	MS		To trigger the MS sending another 220 octets. The radio priority, RLC mode and throughput class are the same as the previous one.
5	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH, the USF assigned to the MS.
6	MS -> SS	PACKET RESOURCE REQUEST	
7	SS -> MS	PACKET UPLINK ASSIGNMENT	Close-ended uplink dynamic allocation, RLC_DATA_BLOCKS_GRANTED = 20, USF_GRANULARITY = 1 block, TLLI_BLOCK_CHANNEL_CODING = cs1, CHANNEL_CODING_COMMAND = cs1, the same USF_TN assigned on the same time slot as in step 1. Sent on PRACH.
8	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH, the USF assigned to the MS, on 3 blocks from the last radio block containing the uplink assignment.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
10		{Completion of uplink RLC data block transfer}	

Specific Message Contents

PACKET RESOURCE REQUEST message in step 6:

{0|1<ACCESS_TYPE>}	0 (no access type IE)
{0<GLOBAL TFI>	1 (Global TFI)
- GLOBAL TFI	The same TFI value assigned

PACKET UPLINK ASSIGNMET message in step 7:

Referenced Address	
-	0 (Global TFI)
- Global TFI	The TFI value assigned in step 1
CHANNEL_CODING_COMMAND	CS-1 coding
TLLI_BLOCK_CHANNEL_CODING	CS-1 coding
Dynamic allocation	010
- {0|1<UPLINK_TFI_ASSIGNMENT>}	0 (no TFI assignment)
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	1 (close-ended TBF)
- RLC_DATA_BLOCKS_GRANTED	20

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

42.3.1.1.3.1 Conformance requirements

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

References

GSM 04.60, 11.2.29, 12.21, 12.21.1

42.3.1.1.3.2 Test purposes

To verify that the MS, in transfer mode,

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

42.3.1.1.3.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test PDP context3 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 initiate packet uplink transfer 440 octets in the RLC unacknowledged mode. The PACKET UPLINK ASSIGNMENT message contains a starting time encoded in absolute frame number format for the single block allocation. It is checked that the MS uses the time slot at the assigned frame number. In the two-phase access a starting time is included in PACKET UPLINK ASSIGNMENT. The assigned USF is on a radio block before the starting time. The MS does not react upon that. The assigned USF is on one block after the starting time. The MS sends a RLC data block.

The SS sends PACKET TIMESLOT RECONFIGURE containing a starting time encoded in absolute frame number format. The assigned USF is on a block before the starting time. The MS does not react upon that. The assigned USF is sent on one block after the starting time. The MS sends a RLC data block.

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

Maximum Duration of Test

5 min.

Expected Sequence

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

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: same as channel coding CHANNEL_CODING_COMMAND: cs-3 The 1st PACKET UPLINK ASSIGNMENT contains starting time specified in absolute frame number encoding, current frame + 1001. It is checked that PACKET RESOURCE REQUEST in the macro is sent at the starting time. The 2nd PACKET UPLINK ASSIGNMENT contains starting time specified in absolute frame number encoding, current frame + 91, The timeslot TN_7 assigned.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS, Sent on one radio block before the starting time.
3	SS		Check that there is no RLC data block sent by the MS on the assigned PDTCH.
4	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on one block after the starting time.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding is the scheme specified by CHANNEL_CODING_COMMAND in step 1, and TFI is correct.
6	SS -> MS	PACKET TIMESLOT RECONFIGURE	Sent on the PACCH, reassign timeslot TN_0 with Starting Time For the 1st execution: in absolute frame number encoding, current frame + 102. For the 2nd execution: in relative frame number encoding, current frame + 104
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 6, on a radio block before the starting time Note: for the 1st execution, i.e. 99 or 100 frames from the 1st frame containing PACKET TIMESLOT RECONFIGURE in step 6.
8	SS		Check that no RLC data block is sent by the MS on the assigned PDTCH.
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS, sent on one block after the starting time Note: for the 1st execution, i.e. 108 or 109 frames from the 1st frame containing PACKET TIMESLOT RECONFIGURE in step 6.
10	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding is the scheme specified by CHANNEL_CODING_COMMAND in step 6, and TFI is correct.
11		{Completion of uplink RLC data block transfer}	

42.3.1.1.4 Dynamic Allocation / Uplink Transfer / Normal / Starting time

42.3.1.1.4.1 Conformance requirements

1 If a TBF starting time information element is present and no uplink TBF is in progress, but a downlink TBF is in progress, the mobile station shall wait until the starting time before beginning to monitor the USFs. While waiting for the starting time, the mobile station shall monitor the assigned PDCHs.

2 If an uplink TBF is already in progress, the mobile station shall continue to use the assigned parameters of the uplink TBF until the TDMA frame number indicated by the TBF starting time occurs. At that time the mobile station shall immediately begin to use the newly assigned uplink TBF parameters.

3 While waiting for the frame number indicated by the TBF starting time if the mobile station receives another uplink assignment, the mobile station shall act upon the most recently received uplink assignment and shall ignore the previous uplink assignment.

References

GSM 04.60, 8.1.1.1

42.3.1.1.4.2 Test purposes

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

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

42.3.1.1.4.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test 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

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

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

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1		{Downlink TBF establishment}	RLC mode: acknowledged, without starting time
2	SS -> MS	DOWNLINK RLC DATA BLOCK	The data block contains FBI=0 and a valid RRBP, sent on 2 blocks from the last radio block containing the downlink assignment.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP of downlink PACCH.
4		{Uplink dynamic allocation two phase access}	n = 440 octets, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: arbitrarily chosen CHANNEL_CODING_COMMAND: arbitrarily chosen but different from above. The 2nd PACKET UPLINK ASSIGNMENT contains starting time$_1$, the current frame + 104 frames, encoded in absolute frame number. The uplink TBF is assigned on the same timeslot as the downlink TBF. Note: If the triggering of an uplink access in the macro involves a manual operation and the manual operation takes more than 5s, step 2 and 3 are repeated at least once every 5s during the triggering, in order to keep the downlink transfer being in progress.
5	SS -> MS	DOWNLINK RLC DATA BLOCK	FBI=0, the assigned USF$_1$ to the MS. Sent on downlink PDTCH, 12 data blocks (52 TDMA frames) before the starting time$_1$.
6	SS -> MS	DOWNLINK RLC DATA BLOCK	FBI=0, the assigned USF$_1$ to the MS. Sent on downlink PDTCH, 5 blocks before the starting time$_1$, a valid RRBP = N+13.
7	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP on downlink PACCH.
8	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assigned USF$_1$ addressing the MS, sent on one block before the starting time$_1$. Assigned a new USF$_2$ on the same timeslot, with starting time$_2$, current frame + 104 frames in relative frame number encoding.
9	SS -> MS	DOWNLINK RLC DATA BLOCK	On 4 blocks from the last radio block containing the uplink assignment in step 8, with FBI=0, the assigned previous USF$_1$ addressing the MS. Sent on downlink PDTCH.
10	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI=0, the assigned USF$_2$ addressing the MS. Sent on downlink PDTCH, one radio block before the starting time$_2$.
11	SS		Check that from the step 4 onwards till the starting time$_2$, there is no RLC data block sent by the MS on the assigned uplink PDTCH.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI=0, a valid RRBP, the assigned USF$_2$ addressing the MS. Sent on downlink PDTCH, on the frame number specified in the starting time$_2$.
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned uplink PDTCH.
14	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP of downlink PACCH.
15	SS -> MS	DOWNLINK RLC DATA BLOCK	One data block with FBI=1 and a valid RRBP. Sent on downlink PDTCH.
16	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the specified RRBP of the downlink PACCH.
17		{Completion of uplink RLC data block transfer}	

18		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: arbitrarily chosen CHANNEL_CODING_COMMAND: cs-1 The timeslot TN_3 assigned
19	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF_1 addressing the MS, sent on 3 blocks from the last radio block containing the uplink assignment in step 18.
20	MS -> SS	UPLINK RLC DATA BLOCK	Check that the coding is cs1, the TFI is correct.
21	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF_1 addressing the MS.
22	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
23	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign an uplink TBF on the timeslot TN_2, containing new TFI_2, USF_2, starting $time_2$, current frame + 117 in relative encoding. Sent on PACCH assigned.
24	SS -> MS	PACKET UPLINK ACK/NACK	USF_1 addressing the MS, sent on 5 radio blocks before the starting $time_2$, on PACCH assigned in step 18.
25	MS -> SS	UPLINK RLC DATA BLOCK	Check that the coding is cs1, the TFI is correct.
26	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign a TBF on the timeslot TN_1, containing new TFI_3, USF_3, cs-3 coding, starting $time_3$, current frame + 325 in relative encoding. Sent on one radio block before the starting $time_2$, on PACCH assigned in step 18.
27	SS -> MS	PACKET UPLINK ACK/NACK	USF_2 addressing the MS, sent on 4 blocks from the last radio block containing the uplink assignment in step 26 on the both PACCHs assigned in step 18 and 23.
28	SS		Check that no data block is sent from the MS on the assigned radio block on the two PDTCHs assigned in step 18 and 23.
29	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF_1 addressing the MS, sent on 5 radio blocks before the starting $time_3$, on PACCH assigned in step 18.
30	MS -> SS	UPLINK RLC DATA BLOCK	Check that the coding is cs1, the TFI is correct.
31	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF_3 addressing the MS, sent on one radio block before the starting $time_3$, on PACCH assigned in step 23.
32	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF_1 addressing the MS, sent on one radio block after the starting $time_3$, on PACCH assigned in step 18.
33	SS		From step 31 on till the starting $time_3$, check that no data blocks are sent from the MS on the assigned radio blocks on the three PDTCHs assigned.
34	SS -> MS	PACKET UPLINK ACK/NACK	Containing USF_3. Sent on PACCH of assigned in step 23.
35	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 23. Check that the coding cs-3 and TFI_3 are correct.
36		{Completion of uplink RLC data block transfer}	

42.3.1.1.5 Dynamic Allocation / Uplink Transfer / Normal / Close-ended TBF

42.3.1.1.5.1 Conformance requirements

1. During a close-ended TBF the mobile station shall transmit only the number of RLC data blocks indicated in the RLC_DATA_BLOCKS_GRANTED field. RLC/MAC control blocks and retransmissions of RLC data blocks do not count toward the limit.

2. In the case the access type in Channel Request was 'Short Access', only the number of RLC data blocks requested in the Channel Request are allowed to be transmitted within the TBF, unless additional resources have been requested and assigned before the countdown procedure has started.

3. When the mobile station nears the end of the fixed length TBF, it shall begin the count down procedure so that it sends the last RLC data block when CV = 0. The mobile station and network shall then follow the appropriate procedure for release of TBF defined in GSM 04.60 9.3.2.3 or 9.3.3.3.

4. If the number of RLC data blocks granted is not sufficient to empty the mobile station's send buffer, the mobile station shall attempt to establish a new uplink TBF for the transmission of the outstanding LLC frames following the end of the fixed length TBF.

References

GSM 04.60, 8.1.1.1

42.3.1.1.5.2 Test purposes

To verify that during a close-ended TBF:

1 The MS transmits only the number of RLC data blocks indicated in the RLC_DATA_BLOCKS_GRANTED field. RLC/MAC control blocks and retransmissions of RLC data blocks do not count toward the limit indicated by RLC_DATA_BLOCKS_GRANTED.

2 When the MS nears the end of the close-ended TBF, it begins the count down procedure and sends the last RLC data block when CV = 0.

3 If the number of RLC data blocks granted is not sufficient to empty the MS's send buffer, the MS attempts to establish a new uplink TBF for the transmission of the outstanding LLC frames following the end of the close-ended TBF.

It is also verified that

4. When the access type in Channel Request was "Short Access", the MS transmits only the number of RLC data blocks requested in the Channel Request.

42.3.1.1.5.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

The MS is GPRS attached with a P-TMSI allocated and the test 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 send 570 octets data in acknowledged mode. Only 10 RLC data blocks are granted for a closed TBF in a assignment. After the MS sends the first data block the SS negatively acknowledges the received data. The MS resends the data block. The MS is polled and the USF assigned to the MS. The MS sends another data block and PACKET CONTROL ACKNOWLEDGEMENT. The resent data block and the RLC/MAC control block do not count toward the granted blocks limit. The SS gives the USF assigned to the MS 8 times so that the MS is allowed to send another 8 data blocks. It is checked that the last data block contains the countdown variable CV=0. The MS sends PACKET CHANNEL REQUEST for new resource in order to empty the sending buffer. The request is granted and a new PDCH is assigned for empty the MS data buffer.

The MS is triggered to send 89 octets data in acknowledged mode. It is checked that the MS requests five RLC data blocks for short access. Although 10 data blocks are granted in the assignment and the assigned USF is addressing the MS 6 times, it is checked that the MS sends only five RLC data blocks.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 600 octets, test PDP context2, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = 10 CHANNEL_CODING_COMMAND = CS-1
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS, sent on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	Check that the coding is cs1, the TFI is correct.
4	SS -> MS	PACKET UPLINK ACK/NACK	Nack the received data block after BS_CV_MAX block periods,
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS, sent on 6 blocks from step 4
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct. The retransmitted data block does not count toward the granted blocks limit.
7	SS -> MS	PACKET UPLINK ACK/NACK	Containing valid RRBP and USF assigned to the MS. Sent on the PACCH.
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
9	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the assigned PACCH. This block does not count toward the granted blocks limit.
10	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS.
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
12			Repeat steps 10 to 11 seven times. Check that the last RLC data block contains CV=0 (the count down procedure executed correctly).
13	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = '1', containing valid RRBP acknowledged all received data blocks. Sent on PACCH.
14	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.
15	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH. Request new resource to empty the sending buffer.
16	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to force the MS making two phase access procedure. Sent on PAGCH.
17	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 16.
18	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block, TLLI_BLOCK_CHANNEL_CODING = use channel coding command, CHANNEL_CODING_COMMAND = cs2. Sent on PACCH of the same PDCH assigned in step 16.
19	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. sent on 3 blocks from the last radio block containing the uplink assignment in step 18.
20	MS -> SS	UPLINK RLC DATA BLOCK	
21		{Completion of uplink RLC data block transfer}	

22		{Uplink dynamic allocation one phase access}	n = 89 octets, test PDP context2, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = 10, CHANNEL_CODING_COMMAND = CS-1. Check that the access type in PACKET CHANNEL REQUEST is "Short Access", and NumberOfBlocks indicates between 5 - 8 RLC data blocks.
23	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
24	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
25	SS -> MS	PACKET UPLINK ACK/NACK	With TLLI, USF assigned to the MS.
26	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
27			Repeat step 25 and 26 3 – 6 times depending on the value of NumberOfBlocks in step 22.
28	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS
29	MS -. SS	PACKET UPLINK DUMMY CONTROL BLOCK	No data block transmitted from the MS.
30	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = '1', containing valid RRBP. Sent on PACCH.
31	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH.

42.3.1.1.6 Dynamic Allocation / Uplink Transfer / Normal / T3180 expiry

42.3.1.1.6.1 Conformance requirements

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

References

GSM 04.60, 8.1.1.1

42.3.1.1.6.2 Test purposes

To verify that

1. Timer T3180 will not expire as long as an USF for the MS under test is detected in the downlink blocks within the defined time period of the timer. (It is implicitly verified).

2. Timer T3180 expires if no USF for the MS under test is detected during a time period longer than T3180.

3. The MS performs an abnormal release with random access procedure after T3180 expires.

42.3.1.1.6.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

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

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

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: arbitrarily chosen CHANNEL_CODING_COMMAND: arbitrarily chosen but different from above.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS sent on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the TFI is correct.
4	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 2, the USF assigned to the MS.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the TFI is correct.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, containing a different TFI and USF from the assigned ones to the MS.
7	SS		Repeat step 6 every 5 radio blocks for 4.5 s. (T3180 * 90%) the SS signals different USFs on the assigned PDCH, but none of them addressing the MS.
8	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 2, the USF assigned to the MS.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the TFI is correct.
10	SS		Repeat step 6 every 5 radio blocks until step 11 occurs. The maximum period for the repetition is of 8s (5s timer + two PSI1 periods). None of the signalled USFs addresses the MS on the assigned PDCH.
11	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH within 7.5 seconds (T3180 * 110% + PSI1 repeat period) from step 9.
12	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to order the MS making two-phase access procedure. Sent on PAGCH.
13	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 12.
14	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block, Sent on PACCH of the same PDCH assigned in step 12.
15	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 14.
16	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding scheme is that specified in step 14 by CHANNEL_CODING_COMMAND and the TFI is correct.
17		{Completion of uplink RLC data block transfer}	

Specific Message Contents

PACKET UPLINK ASSIGNMET message in step 14:

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

42.3.1.1.7 Dynamic Allocation / Uplink Transfer / Normal / PACCH operation

42.3.1.1.7.1 Conformance requirements

1. The mobile station shall attempt to decode every downlink RLC/MAC block on all assigned PDCHs. Whenever the mobile station receives an RLC/MAC block containing an RLC/MAC control block, the mobile station shall attempt to interpret the message contained therein. If the message addresses the mobile station, the mobile station shall act on the message. The mobile station shall not transmit an RLC data block in any uplink radio block allocated via the polling mechanism.

2. PACKET POLLING REQUEST is sent on the PCCCH or PACCH by the network to the mobile station to solicit a PACKET CONTROL ACKNOWLEDGEMENT message from the mobile station.

3. In downlink RLC/MAC control blocks, the TFI identifies the Temporary Block Flow (TBF) to which the RLC/MAC control message contained in the downlink RLC/MAC control block relates. If present, this field indicates the mobile station to which the control message is addressed, and all other mobile stations shall ignore the control message. If this field is present and the contents of the control message also contain a TFI addressing the mobile station, the mobile station shall ignore the TFI in the control message contents.

References

GSM 04.60, 8.1.1.1.1, 11.2.12, 10.4.10

42.3.1.1.7.2 Test purposes

To verify that:

1. The MS attempts to decode every downlink RLC/MAC block on all assigned PDCHs whenever the MS receives an RLC/MAC block containing an RLC/MAC control block, the MS attempts to interpret the message contained therein, such as Payload type and TFI in the optional fields. If the message addresses the MS, it acts upon the message.

2. When receiving PACKET POLLING REQUEST on PACCH the MS responds with four PACKET CONTROL ACKNOWLEDGEMENT messages of access burst format and does not transmit an RLC data block in any uplink radio block allocated via the polling mechanism.

42.3.1.1.7.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

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

Related PICS/PIXIT Statement(s)

Support GPRS service,

Support activation of at least one PDP context,

The way to initiate an uplink transfer

Test Procedure

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

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: arbitrarily chosen CHANNEL_CODING_COMMAND: arbitrarily chosen but different from above.
2	SS -> MS	PACKET POLLING REQUEST	the USF assigned to the MS, the TFI in the message not addressing the MS, no optional octets in RLC/MAC header, a valid RRBP
3	MS -> SS	UPLINK RLC DATA BLOCK	Check the TFI is correct as assigned in step 1.
4	SS -> MS	PACKET POLLING REQUEST	The assigned USF assigned to the MS, the global TFI in the message contents addressing the MS, Payload type indicates the RLC/MAC header containing optional octets where TFI addressing also the MS, RBSN='0'. TYPE_OF_ACK = '0', a valid RRBP=N+13
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on 3 blocks from step 4, the USF assigned to the MS.
6	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	4 access bursts. Received on PACCH, CTRL_ACK = '01'.
7	SS -> MS	PACKET POLLING REQUEST	The global TFI in the message contents addressing the MS. Payload type indicates the RLC/MAC header containing optional octets where TFI not addressing the MS.
8	SS		Check the MS ignores the polling .
9	SS -> MS	PACKET POLLING REQUEST	the Global TFI addresses the MS, RLC/MAC header containing no optional octets. TYPE_OF_ACK = '0', a valid RRBP
10	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	4 access bursts, received on PACCH.
11		{Completion of uplink RLC data block transfer}	

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

This test case verifies the multislot capabilities and applies to all Mobile Station belonging to the multislot class 3, 5, 6, 7 and 9 - 29.

42.3.1.1.8.1 Conformance requirements

Mobile station belonging to multislot class 3, 5, 6, 7 and 9 – 29 shall support at least two transmit timeslots per TDMA frame (refer to GSM 05.02, Annex B1).

References

GSM 05.02, Annex B1

42.3.1.1.8.2 Test purposes

To verify that an MS belonging to multislot class 3, 5, 6, 7 and 9 – 29 supports an uplink TBF using two timeslots per TDMA frame.

42.3.1.1.8.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

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

Related PICS/PIXIT Statement(s)

Support GPRS service,

Support activation of at least one PDP context,

The way to initiate an uplink packet transfer,

The multislot classes supported.

Test Procedure

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

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

Maximum Duration of Test

5 min

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: arbitrarily chosen, CHANNEL_CODING_COMMAND: arbitrarily chosen but different from above. Two timeslots, USF_0 on TN_0 and USF_1 on TN_1, are assigned.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF_0 on $PDTCH_0$ addressing the MS on 3 blocks from the last radio block containing the uplink assignment.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF_1 on $PDTCH_1$ addressing the MS, sent on the same TDMA frame as step 2.
4	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned $PDTCH_0$. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned $PDTCH_1$ on the same TDMA frame as step 4. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
6	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF_0 on $PDTCH_0$ addressing the MS.
7	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF_1 on $PDTCH_1$ addressing the MS, sent on the same TDMA frame as step 6.
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned $PDTCH_0$. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned $PDTCH_1$, on the same TDMA frame as step 8. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
10		{Completion of uplink RLC data block transfer}	

Specific Message Contents

The 2nd PACKET UPLINK ASSIGNMET message in step 1:

CHANNEL_CODING_COMMAND	CS-1
TLLI_BLOCK_CHANNEL_CODING	CS-1
Dynamic allocation	01
-	000000
-	1 (Timeslot Allocation with Power Control Parameters for two timeslots assigned)
- ALPHA	0.5
- {0|1<USF_TN0><GAMMA_TN0>}	1 (timeslot 0 assigned)
- USF_TN0	Arbitrarily chosen
- GAMMA_TN0	For GSM 900, +9 dBm For DCS 1800, +6 dBm
- {0|1<USF_TN1><GAMMA_TN1>}	1 (timeslot 1 assigned)
- USF_TN1	Arbitrarily chosen but different from timeslot 0
- GAMMA_TN1	For GSM 900, +9 dBm For DCS 1800, +6 dBm
- {0|1<USF_TN2><GAMMA_TN2>}	0 (timeslot 2 not assigned)
- {0|1<USF_TN3><GAMMA_TN3>}	0 (timeslot 3 not assigned)
- {0|1<USF_TN4><GAMMA_TN4>}	0 (timeslot 4 not assigned)
- {0|1<USF_TN5><GAMMA_TN5>}	0 (timeslot 5 not assigned)
- {0|1<USF_TN6><GAMMA_TN6>}	0 (timeslot 6 not assigned)
- {0|1<USF_TN7><GAMMA_TN7>}	0 (timeslot 7 not assigned)

42.3.1.1.9 Dynamic Allocation / Uplink Transfer / Normal / Frequency parameters

42.3.1.1.9.1 Conformance requirements

1. Frequency parameters are included in the assignment messages (i.e., PACKET DOWNLINK ASSIGNMENT, PACKET UPLINK ASSIGNMENT, or PACKET TIMESLOT RECONFIGURE) and define the radio frequency channels or set of radio frequency channels the mobile station is to use during the assigned TBF. The first assignment message, sent to the mobile station when it enters packet transfer mode, shall include the frequency parameters. Subsequent assignment messages, sent to the mobile station during packet transfer mode, may omit the frequency parameters. If a mobile station receives a subsequent assignment message, during packet transfer mode, without the frequency parameters, the mobile station shall continue to use the previously assigned frequency parameters.

2. The frequency parameters may use an ARFCN defining a non-hopping radio frequency channel, or use the indirect encoding, direct encoding 1 or direct encoding 2 defining a hopping radio frequency channel.

3. The indirect encoding defines the assigned set of radio frequency channels by referencing information stored within the mobile station. Such information may be received on PBCCH or BCCH or be received in a previous assignment message using one of the direct encoding options. An MA_NUMBER identifies which of up to eight stored sets of frequency parameters is to be used.

4. When the indirect encoding is used, the network may include a CHANGE_MARK_1 and a CHANGE_MARK_2 in the Frequency Parameters information element. The mobile station shall then verify that it is using a set of PBCCH or BCCH information identified by a PSI or SI *change mark* corresponding to one of the CHANGE_MARK_1 or 2 parameters, for the decoding of the frequency information. If that is not the case, an abnormal condition occurs.

5. The direct encoding defines the assigned set of radio frequency channels by using information contained within the assignment message. The direct encoding 1 references the cell allocation or reference frequency lists received on PBCCH for the decoding of this information. The direct encoding 2 is self contained. When the direct encoding 1 or 2 is used, the mobile station shall store the received GPRS mobile allocation for possible later reference in an assignment message using the indirect encoding.

References

GSM 04.60, 5.5.1.7, 11.2.19, 12.8 and 12.10a

42.3.1.1.9.2 Test purposes

To verify that

1. The MS in the packet transfer mode understands correctly the frequency parameters in the indirect encoding format in PACKET UPLINK ASSIGNMENT and PACKET TIMESLOT RECONFIGURATION, and correctly uses the information received on PBCCH in PSI13, SI13 and a consistent set of PSI2 for the assigned TBF.

2. The MS in the packet transfer mode understands and uses correctly the frequency parameters in the direct encoding 1 and 2 formats in PACKET UPLINK ASSIGNMENT and PACKET TIMESLOT RECONFIGURATION and stores the received GPRS mobile allocation for a possible later reference in an assignment message using the indirect encoding.

42.3.1.1.9.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3, PSI_COUNT_HR = 1, REPEAT_PERIOD = 1, the initial SI13, PSI13 and the 1st consistent set of PSI2 including 5 instances(see specific message contents). The PSI2s are transmitted with the high repetition.

Mobile Station:

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

Related PICS/PIXIT Statement(s)

Support GPRS service,

Support activation of at least one PDP context,

The way to initiate an uplink packet transfer

Test Procedure

The test sequence is repeated three times. Each time before starting PSI13, SI13 and a consistent set of PSI2 are firstly broadcast. The MS is given 3s for reading partially the modified PSI13 and PSI2s.

The test sequence consists of seven resource assignments to the MS. The MS is triggered to initiate packet uplink transfer 462K octets in the RLC unacknowledged mode. Each assignment (either via PACKET UPLINK ASSIGNMENT, or via PACKET TIMESLOT RECONFIGURATION) contains a specific frequency parameter. The MS is allowed to transfer 3000 radio blocks data on the assigned hopping PDTCH. It is checked that coding cs1 and TFI are correct in the received data. The frequency hopping check on the assigned PDCH takes about 3 min.

Test parameters:

For GSM900, CA in PSI13 includes the frequencies:

(10, 17, 20, 26, 34, 42, 45, 46, 52, 59, 66, 73, 74, 76, 108, 114).

For DCS1800, CA in PS13 includes the frequencies:

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

The algorithm for the calculation of array CA (j, k) and MA (j, k) are following:

P-GSM 900:

For k = 1, 2, 3:
$ca_{PGSM}(1, k)$ is set to 64.

An arbitrary subset $CA_{PGSM}(1, k)$ of the set {1,…,124} containing $ca_{PGSM}(1, k)$ elements is drawn.

An element B of the set $CA_{PGSM}(1, k)$ is arbitrarily chosen.

An arbitrary value $ca_{PGSM}(2, k)$ in the range 20,…,63 is chosen.

An arbitrary subset $CA_{PGSM}(2, k)$ of the set {1,…,124} with $ca_{PGSM}(2, k)$ elements and containing B is chosen.

An arbitrary value $ca_{PGSM}(3, k)$ in the range 4,…,19 is chosen.

An arbitrary subset $CA_{PGSM}(3, k)$ of the set {1,…,124} with $ca_{PGSM}(3, k)$ elements and containing B is chosen.

For j = 1,2,3, values $ma_{PGSM}(j, k)$ in the range j,…,$ca_{PGSM}(j, k)$-1 and values $MAIO_{PGSM}(j, k)$ in the range 0,…,$ma_{PGSM}(j, k)$-1 are arbitrarily chosen.

Subsets $MA_{PGSM}(j, k)$ of $CA_{PGSM}(j, k)$ not containing B and having ma(j, k) elements are arbitrarily chosen.

DCS 1 800:

for k = 1, 2, 3:
$ca_{DCS}(1, k)$ is set to 64.
An arbitrary subset $CA_{DCS}(1, k)$ of the set {700,…,812} containing $ca_{DCS}(1, k)$ elements is chosen.
An element B of the set $CA_{DCS}(1, k)$ is arbitrarily chosen.
An arbitrary value $ca_{DCS}(2, k)$ in the range 17,…,63 is chosen.
An arbitrary subset $CA_{DCS}(2, k)$ of the set {700,…,812} with $ca_{DCS}(2, k)$ elements and containing B is chosen.
An arbitrary value $ca_{DCS}(3, k)$ in the range 4,…,16 is chosen.
An arbitrary subset $CA_{DCS}(3, k)$ of the set {700,…,812} with $ca_{DCS}(3, k)$ elements and containing B is chosen.
For j = 1,2,3, values $ma_{DCS}(j, k)$ in the range j,…,$ca_{DCS}(j, k)$-1 and values $MAIO_{DCS}(j, k)$ in the range 0,…,$ma_{DCS}(j, k)$-1 are arbitrarily chosen.
Subsets $MA_{DCS}(j, k)$ of $CA_{DCS}(j, k)$ not containing B and having $ma_{DCS}(j, k)$ elements are arbitrarily chosen.

GSM 900 and DCS 1 800

T(1) = 91,
T(2) = 42 000,
T(3) = An arbitrary value chosen in the range 92,…,29999.

Maximum Duration of Test

70 min

Expected Sequence

This sequence is performed for k = 1, 2, 3:

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 462K octets in RLC unacknowledged mode, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1 The 2nd PACKET UPLINK ASSIGNMENT contains a specific frequency parameter in indirect encoding.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF on PDTCH addressing the MS on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
4	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF assigned to the MS, sent on the next radio block of step 3.
5			Repeat step 3, 4 for 3000 times. The last PACKET UPLINK ACK/NACK does not contain the assigned USF.
6	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign a new PDCH with the frequency parameter in direct encoding 1 referred to the CA and MA in PSI13. MA numbered 15 is made same as MA numbered 14.
7	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF assigned to the MS on the new PDTCH, on 3 blocks from the last radio block containing the uplink assignment.
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
9	SS -> MS	PACKET UPLINK ACK/NACK	Assigned USF assigned to the MS, sent on the next radio block of step 8.
10			Repeat step 8, 9 for 3000 times. The last PACKET UPLINK ACK/NACK does not contain the assigned USF.
11	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign a new PDCH with the frequency parameter in indirect encoding referred to CA(1, k).
12	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 11 after the starting time, the USF assigned to the MS.
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
14	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 11 after the starting time, the USF assigned to the MS.
15			Repeat step 13, 14 for 3000 times. The last PACKET UPLINK ACK/NACK does not contain the assigned USF.
16	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign a PDCH with the frequency parameter in indirect encoding, MA referred to the number 15.
17	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF assigned to the MS on the new PDTCH.
18	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
19	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 16 after the starting time, the USF assigned to the MS.
20			Repeat step 18, 19 for 3000 times. The last PACKET UPLINK ACK/NACK does not contain the assigned USF.
21	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign a new PDCH with the frequency parameter in direct encoding 2 referred to CA(3, k).
22	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 21 after the starting time, the USF assigned to the MS.

23	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
24	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 21 after the starting time, the USF assigned to the MS.
25			Repeat step 23, 24 for 3000 times. The last PACKET UPLINK ACK/NACK does not contain the assigned USF.
26	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign a new PDCH with the frequency parameter in indirect encoding referred to CA(2, k).
27	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 26 after the starting time, the USF assigned to the MS.
28	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
29	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned in step 26 after the starting time, the USF assigned to the MS.
30			Repeat step 28, 29 for 3000 times. The last PACKET UPLINK ACK/NACK does not contain the assigned USF.
31	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign a new PDCH with the frequency parameter in indirect encoding referred to the MA numbered 15.
32	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 31, the USF assigned to the MS.
33	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
34		{Completion of uplink RLC data block transfer}	

For k=1, T(k) = T(1),
k=2, T(k) = T(2),
k=3, T(k) = T(3).

Specific Message Contents

PACKET SYSTEM INFORMATION TYPE 13 message:

PAGE_MODE	Normal paging
BCCH_CHANGE_MARK	As default
SI_CHANGE_FIELD	Updated of unknown SI message type
{0|1<SI13_CHANGE_MARK>}	1, '10'
GPRS Mobile Allocation	
- HSN	'000000', cyclic hopping
- {0|1<RLF number list>}	0, CA in PSI2 used
- {1 0|1<ARFCN index list>}	1 0, MA including all ARFCNs in CA
	1, PBCCH present
PSI_REPEATED_PERIOD	As default
PBCCH Description	
- Pb	As default
- TSC	'011'
- TN	'001', slot 1
- {11<MAIO>}	11, '000101'

SI 13 Rest octets:

PAGE_MODE	Normal paging
BCCH_CHANGE_MARK	As default
SI_CHANGE_FIELD	Updated of unknown SI message type
{0|1<SI13_CHANGE_MARK>}	1, '10'
GPRS Mobile Allocation	
- HSN	'000000', cyclic hopping
- {0|1<RLF number list>}	0, refer to CA in PSI2
- {1 0|1<ARFCN index list>}	10, MA including all ARFCNs in CA, ARFCN index list absent.
	1, PBCCH present
PSI_REPEATED_PERIOD	As default
PBCCH Description	
- Pb	As default
- TSC	'011'
- TN	'001', slot 1
- {11<MAIO>}	11, '000101'

Three sets of SI2 are transmitted (k = 1 … 3).

The 1st set (k=1) of PACKET SYSTEM INFORMATION TYPE 2 messages

The 1st PSI2 instance:

PAGE_MODE	Normal paging
PSI2_CHANGE_MARK	(k + 1) mod 4
PSI2_INDEX	0
PSI2_COUNT	5
{0|1<Cell Identification>}	1, as default
{0|1<Non GPRS Cell Options>}	1, as default
{0|1<Reference Frequency Lists>}	0
{0|1<Cell Allocation>}	1
- 1<RFL_NNUMBER>	1, 1
- 1<RFL_NNUMBER>	1, 2
-	0 (end of cell allocation List)
{0|1<GPRS Mobile Allocation>}	0
{0|1<PCCCH Description>}	1
	1, begin of PCCCH description structure
TSC	'011', same as PBCCH
1< MA_NUMBER >	'1', 14
1< Hopping PCCCH carrier struct>	1, begin of Hopping PCCCH carrier struct
MAIO	5, same as PBCCH
TIMESLOT_ALLOCATION	6, (5 timeslots distance from PBCCH)
	0, end of Hopping PCCCH carrier struct
	0, end of PCCCH description structure

The 2nd PSI2 instance:

PAGE_MODE	Normal paging
PSI2_CHANGE_MARK	(k + 1) mod 4
PSI2_INDEX	1
PSI2_COUNT	4
{0|1<Cell Identification>}	0
{0|1<Non GPRS Cell Options>}	0
{0|1<Reference Frequency Lists>}	1
-	1
- RFL_NUMBER	0
- Length of RFL contents	
- RFL contents	For GSM900, in bit map 0, (10, 17, 20, 26, 42, 45, 59, 66, 76, 108) For DCS1800, in 256 format, (739,743, 746, 749, 758, 761, 779, 782, 829, 832)
-	1
- RFL_NUMBER	1
- Length of RFL contents	
- RFL contents	For GSM900, in bit map 0, (17, 34, 45, 46, 52, 59, 73, 74, 108, 114) For DCS1800, in 512 format (743, 756, 761, 764, 771, 779, 791, 798, 832, 844)
-	0 (end of Reference frequency List)
{0|1<Cell Allocation>}	0
{0|1<GPRS Mobile Allocation>}	1
- MA_NUMBER	1
- GPRS Mobile Allocation	
- HSN	Arbitrarily chosen, greater than 0
- {0|1< RFL number list>}	1
- RFL_NUMBER	2
-	1 (ARFCN index list)
- {0|1< ARFCN index list>}	1
- ARFCN_INDEX	For GSM: 17 For DCS 1800: 743
- {0|1< ARFCN index list>}	1
- ARFCN_INDEX	For GSM: 74 For DCS 1800: 798
-	0 (end of ARFCN index lists)
{0|1<PCCH Description>}	0

The 3rd PSI2 instance:

PAGE_MODE	Normal paging
PSI2_CHANGE_MARK	(k + 1) mod 4
PSI2_INDEX	2
PSI2_COUNT	4
{0|1<Cell Identification>}	0
{0|1<Non GPRS Cell Options>}	0
{0|1<Reference Frequency Lists>}	
-	1
- RFL_NUMBER	2
- Length of RFL contents	
- RFL contents	For GSM900, in bit map 0, (17, 34, 45, 46, 52, 59, 73, 74, 108, 114) For DCS1800, in 512 format (743, 756, 761, 764, 771, 779, 791, 798, 832, 844)
-	0 (end of Reference frequency List)
{0|1<Cell Allocation>}	0
{0|1<GPRS Mobile Allocation>}	1
- MA_NUMBER	2
- GPRS Mobile Allocation	
- HSN	Arbitrarily chosen, greater than 0
- {0|1< RFL number list>}	1
- RFL_NUMBER	2
-	1 (ARFCN index list)
- {0|1< ARFCN index list>}	1
- ARFCN_INDEX	For GSM: 45 For DCS 1800: 761
- {0|1< ARFCN index list>}	1
- ARFCN_INDEX	For GSM: 74 For DCS 1800: 798
-	0 (end of ARFCN index lists)
{0|1<PCCH Description>}	0

The 4th PSI2 instance:

PAGE_MODE	Normal paging
PSI2_CHANGE_MARK	(k + 1) mod 4
PSI2_INDEX	3
PSI2_COUNT	4
{0|1<Cell Identification>}	0
{0|1<Non GPRS Cell Options>}	0
{0|1<Reference Frequency Lists>}	1
-	1
- RFL_NUMBER	3
- Length of RFL contents	
- RFL contents	For GSM900: frequencies in $CA_{pgsm}(1, k)$ coded by bit map 0 format For DCS1800: frequencies in $CA_{dcs}(1, k)$ coded by variable bit map format
-	0 (end of Reference frequency Lists)
{0|1<Cell Allocation>}	0
{0|1<GPRS Mobile Allocations>}	1
- MA_NUMBER	3
- GPRS Mobile Allocation	
- HSN	Arbitrarily chosen
- {0|1< RFL number list>}	1

- RFL_NUMBER	3 (corresponding to CA(1, k))
-	0 (MA BITMAP)
- MA_LENGTH	
- MA_BITMAP	For GSM900 corresponding to $MA_{pgsm}(1, k)$ For DCS1800 corresponding to $MA_{dcs}(1, k)$
-	0 (end of GPRS Mobile Allocations)
{0|1<PCCH Description>}	0

The 5th PSI2 instance:

PAGE_MODE	Normal paging
PSI2_CHANGE_MARK	(k + 1) mod 4
PSI2_INDEX	4
PSI2_COUNT	4
{0|1<Cell Identification>}	0
{0|1<Non GPRS Cell Options>}	0
{0|1<Reference Frequency Lists>}	1
-	1
- RFL_NUMBER	4
- Length of RFL contents	
- RFL contents	For GSM900: frequencies in $CA_{pgsm}(2, k)$ coded by bit map 0 format For DCS1800: frequencies in $CA_{dcs}(2, k)$ coded by variable bit map format
-	0 (end of Reference frequency Lists)
{0|1<Cell Allocation>}	0
{0|1<GPRS Mobile Allocations>}	1
- MA_NUMBER	4
- GPRS Mobile Allocation	
- HSN	Arbitrarily chosen
- {0|1< RFL number list>}	1
- RFL_NUMBER	4 (corresponding to CA(2, k))
-	0 (MA BITMAP)
- MA_LENGTH	
- MA_BITMAP	For GSM900 corresponding to $MA_{pgsm}(2, k)$ For DCS1800 corresponding to $MA_{dcs}(2, k)$
-	0 (end of GPRS Mobile Allocations)
{0|1<PCCH Description>}	0

The 2nd (k=2) and 3rd (k=3) set of PACKET SYSTEM INFORMATION TYPE 2 messages

The SI2 instances in the two sets are identical to the 1st set except the value k (k = 2, 3) and the corresponding values $CA_{pgsm}(1, k)$, $CA_{pgsm}(2, k)$, $MA_{pgsm}(1, k)$, $MA_{pgsm}(2, k)$, $CA_{dcs}(1, k)$, $CA_{dcs}(2, k)$, $MA_{dcs}(1, k)$, $MA_{dcs}(2, k)$.

The 2nd PACKET UPLINK ASSGINMENT message in step 1 (the macro):

{0|1<Frequency Parameters>}	1 (frequency parameters present)
- TSC	5
-	01 (indirect encoding)
- MAIO	5
- MA_NUMBER	1
- {0|1<CHANGE_MARK_1>}	0
- {0|1<CHANGE_MARK_2>}	1
- CHANGE_MARK_2	(k + 1) mod 4

PACKET UPLINK ASSGINMENT message in step 6:

{0|1<Frequency Parameters>}	1 (frequency parameters present)
- TSC	'011', same as PBCCH
-	10 (direct encoding 1)
- MAIO	5
- MA_NUMBER	14
- HSN	'000000', cyclic hopping
- {0|1<RLF number list>}	0, refer to CA in PSI2
- {1 0|1<ARFCN index list>}	10, MA including all ARFCNs in CA, ARFCN index list absent.
Dynamic allocation	01
-	0, timeslot allocation
- USF_TN0 - USF_TN5	0000001, TN6 assigned
- USF_TN6	110
- USF_TN7	0

PACKET UPLINK ASSGINMENT message in step 16:

{0|1<Frequency Parameters>}	1 (frequency parameters present)
- TSC	'011', same as PBCCH
-	01 (indirect encoding)
- MAIO	5
- MA_NUMBER	14
- {0|1<CHANGE_MARK_1>}	0
- {0|1<CHANGE_MARK_2>}	1
- CHANGE_MARK_2	(k + 1) mod 4
Dynamic allocation	01 (Dynamic allocation)
-	0, timeslot allocation
- USF_TN0 - USF_TN5	0000001, TN6 assigned
- USF_TN6	110
- USF_TN7	0

PACKET TIMESLOT RECONFIGURE message in step 11:

{0|1<Frequency Parameters>}	1 (frequency parameters presents)
- TSC	
-	01 (indirect encoding)
- MAIO	For GSM900: $MAIO_{pgsm}(1, k)$ For DCS1800: $MAIO_{dcs}(1, k)$
- MA_NUMBER	3, referred to $MA_{pgsm}(1, k)$ / $MA_{dcs}(1, k)$
- {0|1<CHANGE_MARK_1>}	1
- CHANGE_MARK_1	(k + 1) mod 4
- {0|1<CHANGE_MARK_2>}	0
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
- {0|1<P0>}	0
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	1
- Starting Number Description	0, absolute encoding (current frame + T(k)) modulo 42 432
-	1 (Timeslot Allocation with Power Control Parameters)
-	1, assign timeslot 0
- USF_TN_0	
- $GAMMA\_TN_0$	For GSM 900, +9 dBm For DCS 1800, +6 dBm
-	0000000, no other timeslots assigned

PACKET TIMESLOT RECONFIGURE message in step 21:

{0|1<Frequency Parameters>}	1 (frequency parameters presents)
- TSC	
-	11 (direct encoding 2)
- MAIO	For GSM900 $MAIO_{pgsm}(3, k)$ For DCS1800 $MAIO_{dcs}(3, k)$
- HSN	Arbitrarily chosen
- Length of MA Frequency List contents	
- MA Frequency List contents	GSM900: referred to $CA_{pgsm}(3, k)$ and $MA_{pgsm}(3, k)$ in bit map 0 format. DCS1800: referred to $CA_{dcs}(3, k)$ and $MA_{dcs}(3, k)$, k=1, in 1024 range format, k=2, in 512 range format, k=3, in 256 range format.
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
- {0|1<P0>}	0
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	1 (open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	1
- Starting Number Description	0, absolute encoding (current frame + T(k)) modulo 42 432
-	1 (Timeslot Allocation with Power Control Parameters)
-	001, assign timeslot 2
- USF_TN_2	
- $GAMMA\_TN_2$	For GSM 900, +9 dBm For DCS 1800, +6 dBm
-	00000, no other timeslots assigned

PACKET TIMESLOT RECONFIGURE message in step 26:

{0|1<Frequency Parameters>}	1 (frequency parameters presents)
- TSC	
-	01 (indirect encoding)
- MAIO	For GSM900: $MAIO_{pgsm}(2, k)$ For DCS1800: $MAIO_{dcs}(2, k)$
- MA_NUMBER	4, referred to $MA_{pgsm}(2, k)$ / $MA_{dcs}(2, k)$
- {0|1<CHANGE_MARK_1>}	1
- CHANGE_MARK_1	(k + 1) mod 4
- {0|1<CHANGE_MARK_2>}	0
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
- {0|1<P0>}	0
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	1
- Starting Number Description	0, absolute encoding (current frame + T(k)) modulo 42 432
-	1 (Timeslot Allocation with Power Control Parameters)
-	0001, assign timeslot 3
- USF_TN_3	
- $GAMMA\_TN_3$	For GSM 900, +9 dBm For DCS 1800, +6 dBm
-	0000, no other timeslots assigned

PACKET TIMESLOT RECONFIGURE message in step 31:

{0|1<Frequency Parameters>}	1 (frequency parameters presents)
- TSC	
-	01 (indirect encoding)
- MAIO	For GSM900: $MAIO_{pgsm}(3, k)$ For DCS1800: $MAIO_{dcs}(3, k)$
- MA_NUMBER	15, referred to $MA_{pgsm}(3, k)$ / $MA_{dcs}(3, k)$
- {0|1<CHANGE_MARK_1>}	1
- CHANGE_MARK_1	(k + 1) mod 4
- {0|1<CHANGE_MARK_2>}	0
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
- {0|1<P0>}	0
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	1
- Starting Number Description	0, absolute encoding (current frame + T(k)) modulo 42 432
-	1 (Timeslot Allocation with Power Control Parameters)
-	0000001, assign timeslot 6
- USF_TN_6	
- $GAMMA\_TN_6$	For GSM 900, +9 dBm For DCS 1800, +6 dBm
-	0, no other timeslots assigned

42.3.1.2. Dynamic Allocation / Uplink Transfer / Abnormal

42.3.1.2.1 Dynamic Allocation / Uplink Transfer / Abnormal / with random access

42.3.1.2.1.1 Conformance requirements

If the mobile station receives a PACKET UPLINK ACK/NACK with missing mandatory fields, the MS shall perform an abnormal release with random access.

References

GSM 04.60, 8.1.1.5

42.3.1.2.1.2 Test purposes

To verify that the MS performs an abnormal release with random access if it receives a PACKET UPLINK ACK/NACK without some mandatory fields.

42.3.1.2.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

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

Related PICS/PIXIT Statement(s)

Support GPRS service,

Support activation of at least one PDP context,

The way to initiate an uplink packet transfer.

Test Procedure

The MS is triggered to initiate packet uplink transfer 220 octets in the RLC unacknowledged mode. After a successful uplink PDCH assignment and the uplink data transfer in progress the SS sends PACKET UPLINK ACK/NACK. The mandatory IE Ack/Nack Description is missing in the message.

The MS requests the necessary radio resources by PACKET CHANNEL REQUEST. The SS sends PACKET QUIUING NOTIFICATION to postpone the assignment. The SS sends PACKET DOWNLINK DUMMY CONTROL BLOCK on the PDCH that should have been release by the MS, and checks that the MS does not sent any data block on that channel for 5s. The SS then assigns a new PDCH to the MS for completion of the requested uplink data transfer.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 220 octets in RLC unacknowledged mode, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Assigned USF on PDTCH addressing the MS on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified in CHANNEL_CODING_COMMAND, the TFI is correct and the block does not contain TLLI.
4	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
6	SS -> MS	PACKET UPLINK ACK/NACK	USF assigned to the MS. The mandatory IE Ack/Nack Description is missing in the message.
7	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
8	SS -> MS	PACKET QUEUENG NOTIFICATION	
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS sent on PDCH assigned in step 1.
10	SS	UPLINK RLC DATA BLOCK	Check that no data block received on the PDTCH for 5s.
11	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to order the MS making two-phase access procedure. Sent on PAGCH.
12	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 8.
13	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, Sent on PACCH of the same PDCH assigned in step 8.
14	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Containing the newly assigned USF. Sent on PACCH of PDCH assigned in step 13, on 3 blocks from the last radio block containing the uplink assignment.
15	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
16		{Completion of uplink RLC data block transfer}	

Specific Message Contents

PACKET UPLINK ACK/NACK message in step 5:

Ack/Nack Description	Omit this field as the missing information element

42.3.1.2.2 Dynamic Allocation / Uplink Transfer / Abnormal / with cell reselection in acknowledged mode

42.3.1.2.2.1 Conformance requirements

Upon detecting the stall condition the mobile station shall start timer T3182. If timer T3182 expires, the mobile station shall decrement counter N3102 by PAN_DEC, and perform an abnormal release with random access.

When N3102 ≤ 0 is reached, the mobile station shall perform an abnormal release with cell re-selection.

References

GSM 04.60, 9.3.2.2

42.3.1.2.2.2 Test purposes

To verify that while in uplink unacknowledged mode operation the MS performs an abnormal release with cell reselection if the N3102 ≤ 0 is reached.

42.3.1.2.2.3 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present, Max-Retrans = 2, access burst type = 11 bits, BS_PAG_BLKS_RES = 2, BS_PBCCH_BLKS = 3, BS_PCC_CHANS = 1, BS_PRACH_BLKS = 1, PAN_MAX = 8, PAN_DEC = 5 and PAN_INC = 2.

Cell A: power level = 63 dBμVemf(), GPRS_RXLEV_ACCESS_MIN = 33 dBμVemf(), PRIORITY_CLASS = 3, GPRS_PENALTY_TIME = 0, GPRS_RESELECT_OFFSET = 0 dBμVemf(),, RANDOM_ACCESS_RETRY = 1;

Cell B: power level = 53 dBμVemf(), GPRS_RXLEV_ACCESS_MIN = 33 dBμVemf(), PRIORITY_CLASS = 3, GPRS_PENALTY_TIME = 0, GPRS_RESELECT_OFFSET = 16 dBμVemf().

Mobile Station:

The MS is GPRS attached on cell A, a P-TMSI allocated and test PDP context2 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,

Support activation of at least one PDP context,

The way to initiate an uplink packet transfer

Test Procedure

The MS is triggered to initiate packet uplink transfer 1500 octets in the RLC acknowledged mode on cell A. After a successful uplink PDCH assignment the SS sends PACKET DOWNLINK DUMMY indicating the assigned USF assigned to the MS. The MS sends a RLC radio block. The SS allows the MS to transfer so many data blocks without acknowledgement until the stall indication bit is set.

The MS requests the necessary radio resources by PACKET CHANNEL REQUEST on cell A. The SS assigns a new PDCH to the MS. The SS sends PACKET DOWNLINK DUMMY indicating the assigned USF assigned to the MS. The MS sends a RLC radio block. The SS allows the MS to transfer so many data blocks without acknowledgement until the stall indication bit is set.

The MS requests the necessary radio resources by PACKET CHANNEL REQUEST on cell B. The SS then assigns a new PDCH to the MS for completion of the requested uplink data transfer.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	The following messages received on cell A. n = 2000 octets in RLC acknowledged mode (Test PDP context2), without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
4			Repeat step 2 and 3 until the stall indication bit is set in the data block received in step 3.
5	SS		Wait 5s for T3182 time-out.
6	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH of cell A.
7	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to order the MS making two-phase access procedure. Sent on PAGCH.
8	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned.
9	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, Sent on PAGCH.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	USF assigned to the MS. on 3 blocks from the last radio block containing the uplink assignment.
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
12			Repeat step 10 and 11 until the stall indication bit is set in the data block received in the step 11.
13	SS		Wait for 5 seconds for T3182 time-out. The following messages received on cell B.
14	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH of cell B.
15	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to order the MS making two-phase access procedure. Sent on PAGCH.
16	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned.
17	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, Sent on PAGCH.
18	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS.
19	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
20		{Completion of uplink RLC data block transfer}	

42.3.1.2.3 Dynamic Allocation / Uplink Transfer / Abnormal / with cell reselection in unacknowledged mode

42.3.1.2.3.1 Conformance requirements

If the mobile station transmits k RLC data blocks without receiving a Packet Ack/Nack message the mobile station shall start timer T3182. If timer T3182 expires, the mobile station shall decrement counter N3102 by PAN_DEC, and perform an abnormal release with random access.

When N3102 ≤ 0 is reached, the mobile station shall perform an abnormal release with cell re-selection.

References

GSM 04.60, 9.3.3.2

42.3.1.2.3.2 Test purposes

To verify that while in uplink unacknowledged mode operation the MS performs an abnormal release with cell reselection if the N3102 ≤ 0 is reached.

42.3.1.2.3.3 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present, Max-Retrans = 2, access burst type = 11 bits, BS_PAG_BLKS_RES = 2, BS_PBCCH_BLKS = 3, BS_PCC_CHANS = 1, BS_PRACH_BLKS = 1, PAN_MAX = 8, PAN_DEC = 5 and PAN_INC = 2.

Cell A: power level = 63 dBµVemf(), GPRS_RXLEV_ACCESS_MIN = 33 dBµVemf(), PRIORITY_CLASS = 3, GPRS_PENALTY_TIME = 0, GPRS_RESELECT_OFFSET = 0 dBµVemf(),, RANDOM_ACCESS_RETRY = 1;

Cell B: power level = 53 dBµVemf(), GPRS_RXLEV_ACCESS_MIN = 33 dBµVemf(), PRIORITY_CLASS = 3, GPRS_PENALTY_TIME = 0, GPRS_RESELECT_OFFSET = 16 dBµVemf().

Mobile Station:

The MS is GPRS attached with cell A, a P-TMSI allocated and Test PDP context3 activated.

Related PICS/PIXIT Statement(s)

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

Support GPRS service,

Support activation of at least one PDP context,

The way to initiate an uplink packet transfer

Test Procedure

The MS is triggered to initiate packet uplink transfer 1500 octets in the RLC unacknowledged mode on cell A. After a successful uplink PDCH assignment the SS sends PACKET DOWNLINK DUMMY indicating the assigned USF assigned to the MS. The MS sends a RLC radio block. The SS allows the MS to transfer 64 data blocks without acknowledgement.

The MS requests the necessary radio resources by PACKET CHANNEL REQUEST on cell A. The SS assigns a new PDCH to the MS. The SS sends PACKET DOWNLINK DUMMY indicating the assigned USF assigned to the MS. The MS sends a RLC radio block. The SS allows the MS to transfer 64 data blocks without acknowledgement

The MS requests the necessary radio resources by PACKET CHANNEL REQUEST on cell B. The SS then assigns a new PDCH to the MS for completion of the requested uplink data transfer.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	The following messages received on cell A. n = 1500 octets in RLC unacknowledged mode (Test PDP context3), without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 2, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
4			Repeat step 2 and 3 in total of 64 times.
5	SS		Wait 5s for T3182 time-out.
6	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH of cell A.
7	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to order the MS making two-phase access procedure. Sent on PAGCH.
8	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned.
9	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, Sent on PAGCH.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS.
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
12			Repeat step 10 and 11 in total of 63 times.
13	SS		Wait for 5 seconds for T3182 time-out.
			The following messages received on cell B.
14	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH of cell B.
15	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, Sent on PAGCH.
16	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned.
17	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH.
18		{Completion of uplink RLC data block transfer}	

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

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

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

42.3.2.1.1.1 Conformance requirements

During uplink transfer, the network may initiate a downlink TBF by sending a PACKET DOWNLINK ASSIGNMENT message, or a PACKET TIMESLOT RECONFIGURE, to the mobile station on the PACCH. If a PACKET TIMESLOT RECONFIGURE message is sent, then the message shall contain the DOWNLINK_TFI_ASSIGNMENT field. On receipt of an assignment message, and after the TBF starting time, if present, the mobile station shall switch to the assigned PDCHs. The operation of the downlink TBF follows the procedures in GSM 04.60, 8.1.2 with the following additions:

1. If a timer or counter expiry causes the uplink TBF to be aborted in the mobile station, the mobile station shall also abort the downlink TBF and perform an abnormal release with random access.

2. If uplink and downlink TBFs are already established, then the network may send a PACKET TIMESLOT RECONFIGURE message without DOWNLINK_TFI_ASSIGNMENT. The mobile station shall interpret this as a reassignment of the timeslot allocations of the concurrent uplink and downlink TBFs and the downlink TFI is not changed.

References

GSM 04.60, 8.1.1.1.3, 8.1.2

42.3.2.1.1.2 Test purposes

To verify that during uplink transfer:

1. The MS switches to the assigned PDCHs when the network initiates a downlink TBF by sending PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE to the MS on PACCH.

2. When the MS receives PACKET TIMESLOT RECONFIGURE without DOWNLINK_TFI_ASSIGNMENT in the case of uplink and downlink TBFs established already, the MS interprets this message as a reassignment of the timeslot allocations of the concurrent uplink and downlink TBFs.

3. The MS also aborts the downlink TBF and performs an abnormal release with random access if a timer or a counter expiry causes the uplink TBF to be aborted in the MS.

42.3.2.1.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

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

Related PICS/PIXIT Statement(s)

Support GPRS service,

Support activation of at least one PDP context,

The way to initiate an uplink packet transfer

Test Procedure

An uplink TBF is established and in progress. After the MS sends an uplink data block the SS assigns a downlink TBF on the same timeslot as the uplink TBF. The SS sends a downlink data block with polling for acknowledgement and the assigned USF assigned to the MS for the MS, and indicates FBI=1 for the final data block. The MS sends an uplink data block and acknowledges the received downlink data block on the correct frame. The SS waits 2.5s for the MS releasing the downlink PDCH. The SS sends PACKET TIMESLOT RECONFIGURE assigning a new downlink PDCH. A downlink data block is sent, the assigned USF assigned to the MS and the MS is polled for acknowledgement. The MS sends an uplink data block and acknowledges the last received downlink data block on the correct frame.

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

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

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: arbitrarily chosen CHANNEL_CODING_COMMAND: arbitrarily chosen but different from above.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The assigned USF assigned to the MS on 3 blocks from the last radio block containing the uplink assignment.
3	MS -> SS	UPLINK RLC DATA BLOCK	
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PACCH, assigning a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged, single timeslot, TFI_2, no starting time.
5	SS -> MS	DOWNLINK RLC DATA BLOCK	Containing RRBP= N+13 and USF assigned to the MS. FBI ='1'. Sent on the downlink PDTCH on 2 blocks from the last radio block containing the downlink assignment.
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH assigned in step 1.
7	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the frame number = N+13, N is the frame number of the first burst of the data block in step 5.
8	SS -> MS	PACKET UPLINK ACK/NACK	Containing USF assigned to the MS
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH assigned in step 1.
10	SS		Wait 2.5 s for T3192 timeout.
11	SS -> MS	PACKET TIMESLOT RECONFIGURE	Sent on the PACCH of the PDCH assigned in step 1. Assign a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged, single slot, TFI_2, no starting time.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	Containing RRBP= N+21 or +22 and USF assigned to the MS. FBI ='0'. Sent on the downlink PDTCH assigned on 2 blocks from the last radio block containing the downlink assignment in step 11.
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH assigned in step 1.
14	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block of frame number = N+21 or +22, N is the frame number of the first burst of the data block in step 12.
15	SS -> MS	PACKET TIMESLOT RECONFIGURE	Without DOWNLINK_TFI_ASSIGNMENT, Assign new uplink and downlink time slots, no starting time, sent on the PACCH of the PDCH assigned in step 11.
16	SS -> MS	DOWNLINK RLC DATA BLOCK	Containing USF assigned to the MS. Sent on the downlink PDTCH assigned in step 11 on 2 blocks from the last radio block containing the assignment in step 15.
17	SS		Check that neither data blocks, nor control blocks are sent by the MS within the next seven radio blocks.
18	SS -> MS	DOWNLINK RLC DATA BLOCK	Containing a valid RRBP= N+26 and USF assigned to the MS. Sent on the downlink PDTCH assigned in step 15.
19	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH assigned in step 15.
20	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the block of frame number = N+26, N is the frame number of the first burst of the data block in step 18, on the PACCH of the downlink PDCH.
21	SS -> MS	DOWNLINK RLC DATA BLOCK	USF not addressing the MS.
22	SS -> MS		Repeat step 21 until receives PACKET CHANNEL REQUEST in step 23.
23	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH within 7.5 seconds (T3180 * 110% + PSI1 repeat period, 2 s) from step 20.

24	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment,
25	MS -> SS	PACKET RESOURCE REQUEST	Two phase access procedure. Received on the single block assigned in step 24.
26	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = 4 blocks, Sent on PACCH of the same PDCH assigned in step 24.
27	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned on 3 blocks from the last radio block containing the uplink assignment in step 26.
28	MS -> SS	UPLINK RLC DATA BLOCK	Received 4 consecutive data blocks
29		{Completion of uplink RLC data block transfer}	

Specific Message Contents

PACKET DOWNLINK ASSIGNMET message in step 4:

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

PACKET TIMESLOT RECONFIGURE message in step 11:

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

PACKET TIMESLOT RECONFIGURE message in step 15:

PAGE_MODE	Normal
	0, Global TFI as reference
- Global TFI	0, uplink TFI
	same value as assigned in the uplink in step 1
CHANNEL_CODING_COMMAND	Arbitrarily chosen from valid values
Global packet Timing Advance	
- {0|1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0|1<UPLINK_TIMING_ADVANCE_INDEX> <UPLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>}	0 (no uplink timing advance index) The MS stops the operation of the continuous timing advance procedure.
- {0|1<DOWNLINK_TIMING_ADVANCE_INDEX> <DOWNLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>}	0 (no downlink timing advance index) The MS stops the operation of the continuous timing advance procedure.
DOWNLINK_RLC_MODE	Unacknowledged mode
CONTROL_ACK	0
{0|1<DOWNLINK_TFI_ASSIGNMENT>}	0
{0|1<UPLINK_TFI_ASSIGNMENT>}	0
DOWNLINK_TIMESLOT_ALLOCATION	Timeslot 5 assigned
{0|1<Fequency parameters>}	0
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
{0|1<P0>}	0
- USF GRANULARITY	0 (1 RLC block)
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	0 (no starting time)
-	1 (Timeslot Allocation with Power Control Parameters)
- ALPHA	0.5
- {0|1<USF_TNx><GAMMA_TNx>}	000001 (timeslot 5 assigned)
- USF_TN_5	Arbitrarily chosen but different from current value
- $GAMMA\_TN_5$	For GSM 900, +9 dBm
	For DCS 1800, +6 dBm
	00

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

This test case applies to all Mobile Station belonging to multislot class 2, 3, 4, 5, 6, 8, 9, 10, 19 and 24.

42.3.2.1.2.1 Conformance requirements

1. Mobile station belonging to multislot class 2, 3, 4, 5, 6, 8, 9, 10, 19 and 24 shall support as many uplink and downlink timeslots as indicated in GSM 05.02 Annex B1.

2. If transmission of the PACKET CONTROL ACKNOWLEDGEMENT would result in more than the maximum Tx timeslots per TDMA frame allowed by the multislot class, transmission of the highest numbered PDCH(s) shall be omitted.

References

GSM 05.02, Annex B1, GSM 04.60, 8.6

42.3.2.1.2.2 Test purposes

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

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

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

42.3.2.1.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

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

Related PICS/PIXIT Statement(s)

Support GPRS service,
Support activation of at least one PDP context,
The way to initiate an uplink packet transfer,
The multislot class with maximum capability supported.

Test Procedure

The following multislot configurations are tested in the test case:

- Class 2 and 3 support two downlink timeslots and one uplink timeslot, T_{tb}=2, T_{ra}=3,

- Class 4 and 6 support three downlink timeslots and one uplink timeslot, T_{tb}=1, T_{ra}=3,

- Class 5 and 9 supports two downlink timeslots and two uplink timeslots, T_{tb}=1, T_{ra}=3,

- Class 8 and 10 support four downlink timeslots and one uplink timeslot, T_{tb}=1, T_{ra}=2,

- Class 19 and 24 support five downlink timeslots and one uplink timeslot, T_{tb}=1, T_{ra}=2.

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

According to the multislot configurations an uplink TBF with one or two timeslots assigned is established and in progress. The SS establishes a concurrent downlink TBF with multiple timeslots assigned. The basic test procedure is executed on four consecutive radio blocks.

On the 1st radio block the SS sends downlink data in the maximum capability allowed under the configuration, signals to the MS the assigned USFs addressing the MS and polls the MS. On the 2nd radio block the MS sends RLC data in response of the addressing the MS USFs. On the 3rd 1st radio block the SS sends downlink data in the maximum capability allowed under the configuration and signals to the MS the assigned USFs addressing the MS. On the 4th radio block the MS responses PACKET DOWNLINK ACK/NACK and sends RLC data in response of one of the USFs addressing the MS if the configuration is allowed.

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

Maximum Duration of Test

5 min.

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

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1 CHANNEL_CODING_COMMAND: cs1 An uplink timeslot is assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 1.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH.
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of the uplink PDCH. Assigning a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, TFI_d (different from the uplink one), no starting time, assigning TN_1 and TN_2.
5	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the downlink PDTCH, RRBP invalid.
6	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the downlink PDTCH, a valid RRBP = N + 13, the assigned USF assigned to the MS, on the same radio block as step 5.
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH, on the next radio block from step 6.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the downlink PDTCH, RRBP invalid, on the next radio block from step 7.
9	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the downlink PDTCH, the assigned USF assigned to the MS and RRBP invalid, on the same radio block as in step 8. Note: The next uplink radio will not be used for the uplink data. It is reserved for a control block answering the polling in step 5.
10	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBP block on TN_2 specified in step 6.
11			Repeat step 5 to 10, until CV=0 in step 7.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 with FBI = 1 and a valid RRBP.
13	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on TN_2 PACCH of the uplink PDCH.
14	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 01. The MS releases the uplink TBF.
15	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 12. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

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

<table>
<tr><td>CHANNEL_CODING_COMMAND</td><td>CS-1</td></tr>
<tr><td>TLLI_BLOCK_CHANNEL_CODING</td><td>CS-1</td></tr>
<tr><td>Dynamic allocation</td><td>01</td></tr>
<tr><td>-</td><td>000000</td></tr>
<tr><td>-</td><td>1 (Timeslot Allocation with Power Control Parameters for 1 slot assigned)</td></tr>
<tr><td>- ALPHA</td><td>0.5</td></tr>
<tr><td>-</td><td>001 (timeslot 2 assigned)</td></tr>
<tr><td>- USF_TN2</td><td>Arbitrarily chosen</td></tr>
<tr><td>- GAMMA_TN2</td><td>For GSM 900, +9 dBm
For DCS 1800, +6 dBm</td></tr>
<tr><td>-</td><td>00000</td></tr>
</table>

PACKET DOWNLINK ASSIGNMET message in step 4:

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

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

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 330 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1 CHANNEL_CODING_COMMAND: cs1 An uplink timeslot is assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 1.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH.
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of the uplink PDCH. Assigning a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, TFI_d (different from the uplink one), no starting time, assigning the timeslots TN_1, TN_2 and TN_3.
5	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the downlink PDTCH, RRBP invalid.
6	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the downlink PDTCH, the assigned USF assigned to the MS and a valid RRBP = N + 13, on the same radio block as step 5.
7	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_3 of the downlink PDTCH, RRBP invalid, on the same radio block as step 5.
8	MS -> SS	UPLINK RLC DATA BLOCK	Received on the uplink PDTCH, on the next radio block from step 5.
9	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the downlink PDTCH, RRBP invalid, on the next radio block from step 8.
10	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the downlink PDTCH, the assigned USF assigned to the MS and an invalid RRBP, on the same radio block as step 9. Note: The next uplink radio block will not be used for the uplink data. It is reserved for a control block answering the polling in step 6.
11	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_3 of the downlink PDTCH, RRBP invalid, on the same radio block as step 9.
12	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBP block on TN_2 specified in step 6.
13			Repeat step 5 to 12, until CV=0 in step 8.
14	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 with FBI = 1 and a valid RRBP.
15	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on PACCH of the uplink PDCH.
16	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 01. The MS releases the uplink TBF.
17	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 14. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

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

Same as in the test for the multiclass 2 & 3

PACKET DOWNLINK ASSIGNMET message in step 4:

Same as in the test for the multiclass 2 & 3 except

TIMESLOT_ALLOCATION	Timeslot 1, 2 and 3 assigned

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

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1 CHANNEL_CODING_COMMAND: cs1 Two uplink timeslots are assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF_1 assigned to the MS. Sent in TN_1 on PACCH of PDCH assigned in step 1.
3	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF_2 assigned to the MS. Sent in TN_2 on the same radio block as step 2, on PACCH of PDCH assigned in step 1.
4	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN_1 on the PDTCH assigned in step 1.
5	MS -> SS	UPLINK RLC DATA BLOCK	Received on $TN_{2,}$ on the same radio block as step 4, on PDTCH assigned in step 1.
6	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of PDCH assigned in step 5. Assign a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, TFI_d, no starting time, assigning the timeslots TN_1 and TN_2.
7	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the downlink PDTCH, RRBP invalid, the assigned USF_1 addressing the MS.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the downlink PDTCH, a valid RRBP = N + 13, the assigned USF_2 addressing the MS, on the same radio block as step 7.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN_1 on the next radio block from step 7.
10	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN_2 on the next radio block from step 7.
11	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the downlink PDTCH on the next radio block from step 9, an invalid RRBP, the assigned USF_1 addressing the MS.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the downlink PDTCH on the next radio block from step 9, an invalid RRBP, the assigned USF_2 addressing the MS.
13	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN_1 on the PDTCH assigned in step 5.
14	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBP block on TN_2 specified in step 8.
15			Repeat step 7 to 14, until CV=0 in step 9, 10 or 13.
16	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 with FBI = 1 and a valid RRBP.
17	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on PACCH of the uplink PDCH.
18	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 01. The MS releases the uplink TBF.
19	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 16. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

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

Same as in the test for the multiclass 2 & 3 except

-	1 (Timeslot Allocation with Power Control Parameters for two slots assigned)
- ALPHA	0.5
-	01 (timeslot 1 assigned)
- USF_TN1	Arbitrarily chosen
- GAMMA_TN1	For GSM 900, +9 dBm For DCS 1800, +6 dBm
- {0|1<USF_TN2><GAMMA_TN2>}	1 (timeslot 2 assigned)
- USF_TN2	Arbitrarily chosen but different from USF_TN_1
- GAMMA_TN2	For GSM 900, +9 dBm For DCS 1800, +6 dBm
-	00000

PACKET DOWNLINK ASSIGNMET message in step 10:

Same as in the test for the multiclass 2 & 3

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

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1 CHANNEL_CODING_COMMAND: cs1 1 uplink timeslot is assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent in TN_3 on PACCH of PDCH assigned in step 1.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN_3 on the PDTCH.
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of PDCH assigned in step 1. Assign a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, four slots TN_1 – TN_4, TFI_d, no starting time.
5	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the PDTCH assigned in step 4, with an invalid RRBP
6	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the PDTCH assigned in step 4, an invalid RRBP on the same radio block as step 5.
7	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_3 of the PDTCH assigned in step 4, the assigned USF assigned to the MS, a valid RRBP = N + 13, on the same radio block as step 5.
8	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_4 of the PDTCH assigned in step 4, an invalid RRBP, on the same radio block as step 5.
9	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN_3 on the PDTCH assigned in step 1, on the next radio block from step 5.
10	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the PDTCH assigned in step 4, with an invalid RRBP, on the next radio block from step 9.
11	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the PDTCH assigned in step 4, an invalid RRBP, on the next radio block from step 9.
12	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_3 of the PDTCH assigned in step 4, the assigned USF assigned to the MS, on the next radio block from step 9.
13	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_4 of the PDTCH assigned in step 4, an invalid RRBP, on the next radio block from step 9.
14	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBP block of TN_3 specified in step 7, on the next radio block from step 10.
15			Repeat step 5 to 14, until CV=0 in step 9.
16	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 with FBI = 1 and a valid RRBP.
17	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on PACCH of the uplink PDCH.
18	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 01. The MS releases the uplink TBF.
19	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 16. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 1:

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

PACKET DOWNLINK ASSIGNMET message in step 4:

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

TIMESLOT_ALLOCATION	TN_1 – TN_4 assigned

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

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 160 octets, without starting time, without frequency hopping, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1 CHANNEL_CODING_COMMAND: cs1 1 uplink timeslot is assigned (see specific message contents).
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The assigned USF assigned to the MS, sent in TN_3 on PACCH of PDCH assigned in step 1.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN_3 on the PDTCH assigned in step 1.
4	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH of PDCH assigned in step 1. Assign a downlink TBF, MAC mode = dynamic allocation, RLC mode = unacknowledged mode, TN_1 – TN_5 assigned, TFI_d, no starting time.
5	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the PDTCH assigned in step 4, with an invalid RRBP.
6	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the PDTCH assigned in step 4, with an invalid RRBP, on the same radio block as step 5.
7	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_3 of the PDTCH assigned in step 4, the assigned USF assigned to the MS, a valid RRBP = N + 13, on the same radio block as step 5.
8	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_4 of the PDTCH assigned in step 4, with an invalid RRBP, on the same radio block as step 5.
9	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_5 of the PDTCH assigned in step 4, with an invalid RRBP, on the same radio block as step 5.
10	MS -> SS	UPLINK RLC DATA BLOCK	Received on TN_3 on the PDTCH assigned in step 5, on the next radio block from step 5.
11	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 of the PDTCH assigned in step 4, with an invalid RRBP on the next radio block from step 10.
12	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_2 of the PDTCH assigned in step 4, with an invalid RRBP on the same radio block as step 11.
13	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_3 of the PDTCH assigned in step 4, with an invalid RRBP on the same radio block as step 11.
14	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_4 of the PDTCH assigned in step 4, with an invalid RRBP on the same radio block as step 11.
15	SS - MS	DOWNLINK RLC DATA BLOCK	Sent on TN_5 of the PDTCH assigned in step 4, with an invalid RRBP on the same radio block as step 11.
16	MS -> SS	PACKET DOWNLINK ACK/NACK	Received on the RRBP block of TN_3 specified in step 7.
15			Repeat step 5 to 16, until CV=0 in step 10.
16	SS -> MS	DOWNLINK RLC DATA BLOCK	Sent on TN_1 with FBI = 1 and a valid RRBP.
17	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = 1. Sent on PACCH of the uplink PDCH.
18	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	CTRL_ACK = 01. The MS releases the uplink TBF.
19	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP in step 16. CTRL_ACK = 11. The MS releases the downlink TBF.

Specific Message Contents

PACKET UPLINK ASSIGNMENT message in step 1:

Same as in the test for the multiclass 2 & 3 except

{0|1<Frequency Parameters>}	1 (frequency parameters presents)
- TSC	6
-	00, non hopping
- ARFCN	For GSM900: 30 For DCS1800: 650
Dynamic allocation	01
- {0|1<USF_TN0>} … {0|1<USF_TN3>}	0001
- USF_TN3	arbitrarily chosen
-	0000, none of the other timeslots assgined.

PACKET DOWNLINK ASSIGNMET message in step 4:

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

TIMESLOT_ALLOCATION	TN_1 – TN_5 assigned

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

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

42.3.2.2.1.1 Conformance requirements

1 If a failure occurs on the mobile station side before the new TBF has been successfully established, the newly reserved resources are released.

2 If the information in the PACKET TIMESLOT RECONFIGURE does not properly specify an uplink and downlink PDCH or violates the mobile station's multislot capabilities, the mobile station shall perform an abnormal release with random access.

3 If uplink and downlink TBFs are not already established and the PACKET TIMESLOT RECONFIGURE message does not include a DOWNLINK_TFI_ASSIGNMENT field, then the mobile station shall perform an abnormal release with random access.

4 If a failure in the PACKET TIMESLOT RECONFIGURE is due to any other reason, the mobile station shall abort the procedure and perform an abnormal release with random access.

5 If the mobile station receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message specifying frequencies that are not all in one frequency band then the mobile station shall perform an abnormal release with random access.

6 To perform an abnormal release with random access, the mobile station shall abort all TBFs in progress and its associated resources, return to the CCCH or PCCCH and initiate establishment of a new uplink TBF.

References

GSM 04.60, 8.1.1.1.3.1, 8.1.1.1.2.1, 8.7.2

42.3.2.2.1.2 Test purposes

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

1 does not properly specify an uplink and downlink PDCH,

2 violates the mobile station's multislot capabilities,

3 does not include a DOWNLINK_TFI_ASSIGNMENT field,

4 has a failure due to any other reason other than the reasons listed above.

42.3.2.2.1.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

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

Related PICS/PIXIT Statement(s)

Support GPRS service,
Support activation of at least one PDP context,
The way to initiate an uplink transfer,
Multislot class of the MS

Test Procedure

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

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

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

2nd execution, violating the multislot capabilities,

3rd execution, no DOWNLINK_TFI_ASSIGNMENT,

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

Maximum Duration of Test

10 min.

Expected Sequence

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

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: arbitrarily chosen CHANNEL_CODING_COMMAND: arbitrarily chosen but different from above.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The assigned USF assigned to the MS
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
4	SS -> MS	PACKET TIMESLOT RECONFIGURE	See specific message contents.
5	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
6	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to force the MS making the 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, no starting time, USF_GRANULARITY = single block, the assigned slot and USF different from TN_2 (as in the default)
9	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS in step 1, sent on TN_2, on PACCH in step 1.
10	SS		Check that no RLC data block is received on the next three radio blocks from step 9.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS sent on the PACCH assigned in step 8.
12	MS -> SS	UPLINK RLC DATA BLOCK	Received on the correct radio block of the assigned PDTCH.
13		{Completion of uplink RLC data block transfer}	

Specific Message Contents

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

PAGE_MODE	Normal
GLOBAL_TFI	0, the TFI value of the uplink TBF assigned 0
CHANNEL_CODING_COMMAND	arbitrarily chosen from valid values
DOWNLINK_RLC_MODE	unacknowledged mode
CONTROL_ACK	0
{0|1<DOWNLINK_TFI_ASSIGNMENT>	1 (assign TFI to the downlink TBF)
- DOWNLINK_TFI_ASSIGNMENT	arbitrarily chosen but different from the value for the uplink TBF
{0|1<UPLINK_TFI_ASSIGNMENT>	0
DOWNLINK_TIMESLOT_ALLOCATION	The same timeslot as the uplink
{0|1<Frequency Parameters>}	1 (frequency parameters)
- TSC	Any valid value
-	11 (Direct encoding 2)
- MAIO	arbitrarily chosen from (0, 1, 2,…,9)
- HSN	arbitrarily chosen
- Length of MA Frequency List contents	11
- MA Frequency List contents	containing ARFCNs 10, 20, 40, 80, 90, 520, 590, 600, 700, 780 by range 1024 format
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
{0|1<P0>}	0
- USF GRANULARITY	0 (1 RLC block)
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	0 (no starting time)
-	0 (Timeslot Allocation)
- {0|1<USF_TNx>	001 (timeslot 2 assigned)
- USF_TN_2	Arbitrarily chosen but different from the current value 00000

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

PAGE_MODE	Normal
GLOBAL_TFI	0, the TFI value of the uplink TBF assigned
	0
CHANNEL_CODING_COMMAND	arbitrarily chosen from valid values
DOWNLINK_RLC_MODE	unacknowledged mode
CONTROL_ACK	0
{0|1<DOWNLINK_TFI_ASSIGNMENT>	1 (assign TFI to the downlink TBF)
- DOWNLINK_TFI_ASSIGNMENT	arbitrarily chosen but different from the value for the uplink TBF
{0|1<UPLINK_TFI_ASSIGNMENT>	0
DOWNLINK_TIMESLOT_ALLOCATION	Timeslots 0-7 assigned
{0|1<Frequency Parameters>}	0
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
{0|1<P0>}	0
- USF GRANULARITY	0 (1 RLC block)
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	0 (no starting time)
-	0 (Timeslot Allocation)
- {0|1<USF_TN0>}	1, a valid value
- {0|1<USF_TN1>}	1, a valid value
- {0|1<USF_TN2>}	1, a valid value
- {0|1<USF_TN3>}	1, a valid value
- {0|1<USF_TN4>}	1, a valid value
- {0|1<USF_TN5>}	1, a valid value
- {0|1<USF_TN6>}	1, a valid value
- {0|1<USF_TN7>}	1, a valid value

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

PAGE_MODE	Normal
GLOBAL_TFI	0, the TFI value of the uplink TBF assigned
	0
CHANNEL_CODING_COMMAND	arbitrarily chosen from valid values
DOWNLINK_RLC_MODE	unacknowledged mode
CONTROL_ACK	0
{0|1<DOWNLINK_TFI_ASSIGNMENT>	0, no DOWNLINK_TFI_ASSIGNMENT
{0|1<UPLINK_TFI_ASSIGNMENT>	0
DOWNLINK_TIMESLOT_ALLOCATION	The same timeslot as the uplink
{0|1<Frequency Parameters>}	0
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
{0|1<P0>}	0
- USF GRANULARITY	0 (1 RLC block)
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	0 (open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	0 (no starting time)
-	0 (Timeslot Allocation)
- {0|1<USF_TNx>	001 (timeslot 2 assigned)
- USF_TN$_2$	Arbitrarily chosen but different from the current value
	00000

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

Same as in 3rd execution except

CONTROL_ACK	1

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

42.3.2.2.2.1 Conformance requirements

1 If a failure occurs on the mobile station side before the new TBF has been successfully established, the newly reserved resources are released.

2 If a failure in the PACKET DOWNLINK ASSIGNMENT is due to any reason, the mobile station shall abort the procedure and continue the normal operation of the uplink TBF.

3 If a mobile station receives a PACKET DOWNLINK ASSIGNMENT assigning a different MAC mode than the MAC mode of an already operating uplink TBF, the PACKET DOWNLINK ASSIGNMENT message shall be ignored.

References

GSM 04.60, 8.1.1.1.3.1, 8.7

42.3.2.2.2.2 Test purposes

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

2 To verify that the MS ignores the PACKET DOWNLINK ASSIGNMENT message if it assigns a different MAC mode than the MAC mode of an already operating uplink TBF.

42.3.2.2.2.3 Method of test

Initial Conditions

System Simulator:

1 cell, default setting, BS_PBCCH_BLKS = 3.

Mobile Station:

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

Related PICS/PIXIT Statement(s)

Type of MS (P-, E-, R-GSM 900 or DCS 1800),
Support GPRS service,
Support activation of at least one PDP context,
The way to initiate an uplink packet transfer

Test Procedure

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

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

The test procedure is executed twice. The message contents of PACKET DOWNLINK ASSIGNMENT are varied as defined below.

1 Without DOWNLINK_TFI_ASSIGNMENT,

2 MAC mode = Fixed Allocation, an inconsistent MAC mode.

Maximum Duration of Test

5 min.

Expected Sequence

The test sequence is executed twice.

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

Specific Message Contents

PACKET DOWNLINK ASSIGNMET message in step 4 **(1st execution):**

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

PACKET DOWNLINK ASSIGNMET message in step 4 **(2nd execution):**

Referenced Address	
-	0 (address is Global TFI)
- TFI	same as the value for uplink TBF
MAC_MODE	Fixed Allocation, half duplex mode

42.3.3 Dynamic Allocation / Resource reallocation

The clause is applicable to the MS either supporting two PDP contexts or supporting SMS over GPRS and at least one PDP context.

42.3.3.1 Dynamic Allocation / Resource reallocation / Successful

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

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

42.3.3.1.1.1 Conformance requirements

1. During an uplink packet transfer, upper layer may request to transfer another LLC PDU. If the mobile station has not started the countdown procedure and the new LLC PDU has the same RLC mode as the current uplink TBF and either a higher radio priority or the same radio priority but a higher peak throughput class, the mobile station shall immediately request a resource reallocation for uplink according to the new Radio Priority and peak throughput class of the new LLC PDU by sending a PACKET RESOURCE REQUEST message on the PACCH and starting timer T3168.

2. Then the mobile station shall complete the transmission of the current LLC PDU.

3. After the transmission of the PACKET RESOURCE REQUEST message with the reason for changing the priority or peak throughput class of an assigned uplink TBF the mobile station shall continue to use the currently assigned uplink TBF assuming that the requested priority or peak throughput class is already assigned to that TBF.

References

GSM 04.60 8.1.1.1.2

42.3.3.1.1.2 Test purposes

It is verified that:

1. Having an uplink TBF in progress without starting the countdown procedure, the MS will immediately send PACKET RESOURCE REQUEST if upper layer requests to transfer another LLC PDU which has the same RLC mode as the current uplink TBF and either a higher radio priority or the same radio priority but a higher peak throughput class.

2. After the request of the resource reallocation for uplink the MS completes the transmission of the current LLC PDU independent of whether or not a new resource is allocated.

3. After the transmission of the PACKET RESOURCE REQUEST the MS continues to use the currently assigned uplink TBF.

42.3.3.1.1.3 Method of test

Initial Conditions

System Simulator:

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

Mobile Station:

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

- for the MS supporting two PDP contexts: the test PDP context3 and context6 activated,

- for the MS supporting one PDP context and SMS over GPRS: the test PDP context5 activated.

Related PICS/PIXIT Statement(s)

Type of MS (P-, E-, R-GSM 900 or DCS 1800),
Support GPRS service,
Support activation of at least one PDP context,
Support two PDP contexts,
Support Short Message Service,
Support SMS over GPRS,
The way to initiate an uplink packet transfer,
The way to trigger transferring new user data in a different PDP context while an uplink transfer is in progress,
The way to trigger sending an MO short message over GPRS

Test Procedure

1. Test procedure for the MS supporting two PDP contexts.

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

The MS sends PACKET RESOURCE REQUEST. The current TBF is maintained and SS assigns the USFs allowing the MS transmit more data blocks. It is verified that the MS completes the transmission of the current LLC PDU and then starts transmitting a new LLC PDU with the higher throughput. A new PDCH is assigned to MS to complete the RLC data block transferring.

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

2. Test procedure for the MS supporting SMS over GPRS and one PDP context.

Similar to the 1st test procedure except that the MS is triggered firstly to send MO SMS over GPRS. After an uplink TBF is established for SMS and is in progress the MS is triggered to transfer data with a higher radio priority in the same RLC mode (SMS has the radio priority level = 3 defined in the attach accept message).

Maximum Duration of Test

5 min.

Expected Sequence

The test sequence is applied to the MS supporting two PDP contexts and executed twice for k = 1 and 2.

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

Step	Direction	Message	Comments
1		{Uplink dynamic allocation two phase access}	n = 440 octets in test PDP context3, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 5 (16k octets/s), RADIO_PRIORITY = 4, RLC_MODE = unacknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct.
4	MS		To trigger the MS to transfer 440 octets with the peak throughput class 6 (32k octets/s) in the same RLC mode and the same radio priority as the current uplink TBF (test PDP context6).
5	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the assigned PDCH, radio priority level = 4, peak throughput class = 6, unacknowledged mode.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
8	SS		Repeat step 6 and 7 **n** times. Observe the Length indicator, M bit and E bit of the received data headers. For k=1 n=30 Check that the transmission of the 1st LLC PDU in PDP context3 is completed. The 2nd LLC PDU in PDP context6 is started. For k=2 n=5 Check that only the data of the 1st LLC PDU in PDP context3 are transmitted.
9	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned, acknowledge all received data, without setting FINAL_ACK_INDICATION.
10	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH of the PDCH assigned in step 1, assigning a new PDCH.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 10, the USF assigned to the MS.
12	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 10.
13		{Completion of uplink RLC data block transfer}	For k=1, as defined in the macro. For k=2, Observe the Length indicator, M bit and E bit of the received data headers. Check that the MS completes firstly the transmission of the 1st LLC PDU in PDP context3 and then transmits the 2nd LLC PDU in PDP context6.

Specific Message Contents

PACKET RESOURCE REQUEST message in step 5:

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

PACKET UPLINK ASSIGNMET message in step 10:

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

Expected Sequence for the MS supporting one PDP context and SMS over GPRS

The test sequence is applied to the MS supporting SMS over GPRS and one PDP context. The sequence is executed twice for k = 1 and 2.

Step	Direction	Message	Comments
1	MS	{Uplink dynamic allocation two phase access}	To trigger the MS to send a short message of 110 octets. n = 110 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct.
4	MS		To trigger the MS to transfer 440 octets with the peak throughput class 5 (16k octets/s) and the radio priority 1 in acknowledge RLC mode of the PDP context5.
5	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the assigned PDCH, radio priority level = 1, peak throughput class = 5, acknowledged mode.
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
8	SS		Repeat step 6 and 7 **n** times. Observe the Length indicator, M bit and E bit of the received data headers. For k=1: n=8. Check that the transmission of the 1st LLC PDU for short message is completed. The 2nd LLC PDU in PDP context6 is started. For k=2: n=2. Check that only the data of the 1st LLC are transmitted.
9	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned, acknowledge all received data, without setting FINAL_ACK_INDICATION.
10	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH of the PDCH assigned in step 1, assigning a new PDCH.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 10, the USF assigned to the MS.
12	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 10.
13	MS -> SS	{Completion of uplink RLC data block transfer}	For k=1, as defined in the macro. For k=2, Observe the Length indicator, M bit and E bit of the received data headers. Check that the MS completes firstly the transmission of the 1st LLC PDU in PDP context3 and then transmits the 2nd LLC PDU in PDP context6.
14	MS		Switch off

Specific Message Contents

PACKET RESOURCE REQUEST message in step 5:

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

PACKET UPLINK ASSIGNMET message in step 8:

Same as in step 10 of the test sequence testing the MS supporting two PDP contexts.

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

42.3.3.1.2.1 Conformance requirements

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

References

GSM 04.60, 8.1.1.1.2

42.3.3.1.2.2 Test purposes

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

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

42.3.3.1.2.3 Method of test

Initial Conditions

System Simulator:

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

Mobile Station:

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

- for the MS supporting two PDP contests: test PDP context2 and context4 activated,

- for the MS supporting one PDP context and SMS over GPRS: Test PDP context5 activated.

Related PICS/PIXIT Statement(s)

Type of MS (P-, E-, R-GSM 900 or DCS 1800),
Support GPRS service,
Support activation of at least one PDP context,
Support two PDP contexts,
Support SMS,
Support SMS over GPRS,
The way to initiate an uplink packet transfer,
The way to trigger transferring new user data in a different PDP context while an uplink transfer is in progress,
The way to trigger sending short message over GPRS

Test Procedure

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

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

Maximum Duration of Test

5 min.

Expected Sequence

The branch A is applicable for the MS supporting two PDP contexts. The branch B is applicable for the MS supporting SMS over GPRS and one PDP context.

Step	Direction	Message	Comments
1A		{Uplink dynamic allocation two phase access}	In PDP context4, n = 880 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 6, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
1B		{Uplink dynamic allocation two phase access}	To trigger the MS to send a short message of 110 octets over GPRS. n = 110 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct.
4	MS		To trigger the MS to transfer 220 octets with the test PDP context2 in the same RLC mode as the current uplink TBF.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
6-1	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
6-2	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the assigned PDCH, acknowledged mode.
7	SS		Repeat step 5 and 6-1 until PACKET RESOURCE REQUEST in 6-2, instead of a RLC data block in 6-1, is received. Observe the Length indicator, M bit and E bit of the received data headers. Check that the transmission of the 1st LLC PDU in PDP context6 is completed and the transmission of the 2nd LLC PDU in PDP context3 is not yet started.
8	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned, acknowledge all received data
9	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH of the PDCH assigned in step 1, assigning a new PDCH.
10	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 10, the USF assigned to the MS.
11	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 10.
12		{Completion of uplink RLC data block transfer}	
13	MS		Switch off

Specific Message Contents

PACKET RESOURCE REQUEST message in step 6-2:

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

PACKET UPLINK ASSIGNMET message in step 9:

Same as in 42.3.3.1.1.3, step 10 of the test sequence testing the MS supporting two PDP contexts.

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

42.3.3.1.3.1 Conformance requirements

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

References

GSM 04.60, 8.1.1.1.2

42.3.3.1.3.2 Test purposes

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

1. The mobile station completes the transmission of the current LLC PDU using the countdown procedure including acknowledgement from the network, if in RLC acknowledged mode.

2. Then the MS releases the TBF and establishes a new uplink TBF for transmission of the new LLC PDU.

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

42.3.3.1.3.3 Method of test

Initial Conditions

System Simulator:

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

Mobile Station:

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

- for the MS supporting two PDP contexts: Test PDP context1 and context2 activated,

- for the MS supporting SMS over GPRS and one PDP context: Test PDP context1 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,
Support activation of at least one PDP context,
Support two PDP contexts,
Support SMS,
Support SMS over GPRS,
The way to initiate an uplink packet transfer,
The way to trigger transferring new user data in a different PDP context while an uplink transfer is in progress,
The way to trigger sending an MO short message over GPRS.

Test Procedure

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

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

Random accesses are received from the MS for packet channel request. SS assigns a PDCH to it. SS assigns USFs addressing to the MS allowing more data blocks are transmitted by the MS until the countdown value CV=0. It is checked that the MS sends 11 RLC data blocks in total.

The MS requests more resources through random accesses of channel requests for the remaining LLC PDU in the initial test PDP context. SS starts a two-phase dynamic allocation. It is checked that the values of PEAK_THROUGHPUT_CLASS, RADIO_PRIORITY and RLC_MODE requested by the MS in the PACKET RESOURCE REQUEST are in consistence with the initial test PDP context2.

Maximum Duration of Test

5 min.

Expected Sequence

The branch A is applicable for the MS supporting two PDP contexts. The branch B is applicable for the MS supporting SMS over GPRS and one PDP context.

Step	Direction	Message	Comments
1A	MS	{Uplink dynamic allocation two phase access}	In PDP context2, n = 880 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
1B		{Uplink dynamic allocation two phase access}	To trigger the MS to send a short message of 110 octets over GPRS. n = 110 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct.
4	MS		To trigger the MS to transfer 220 octets in test PDP context1, unacknowledged RLC mode and a higher radio priority.
5	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
6	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
7	SS		Repeat step 5 and 6 until countdown value CV=0. Observe the Length indicator, M bit and E bit of the received data headers. Check that transmitted is only the 1st LLC PDU, Note: for branch A: the 1st LLC PDU is in PDP context2, the 2nd LLC PDU is waiting for transferring. for branch B: the LLC PDU containing the short message.
8	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = '1'. Acknowledge all received data, containing valid RRBP, sent on PACCH.
9	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.
10	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH for TBF establishment for transferring of the LLC PDU in PDP context1.
11	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to force the MS making two-phase access procedure. Sent on PAGCH.
12	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 11. Check that radio priority level = 1, peak throughput class = 5, unacknowledged RLC mode.
13	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block. Sent on PACCH of the same PDCH assigned in step 11.
14	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 13.
15	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned.
16			Repeat step 14 and 15 until countdown value CV=0. Check that the repeat number is 10, i.e.11 RLC data blocks in total.

17	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = '1', a valid RRBP, acknowledge all received data, sent on PACCH.
18	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.
19B	MS		Switch off the MS.
			The following test steps are applied to the branch A.
19A	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH, TBF establishment for transmission of a remaining LLC PDU in PDP context2 for branch A.
20A	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to force the MS making two-phase access procedure. Sent on PAGCH.
21A	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 20A. Check that PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
22A	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block. Sent on PACCH of the same PDCH assigned in step 20A.
23A	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	The USF assigned to the MS. Sent on PACCH of PDCH assigned in step 20A.
24A	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 20A.
25A	SS		Repeat step 23A and 24A until countdown value CV=0. Observe the Length indicator, M bit and E bit of the received data headers. Check that only one LLC PDU is transmitted. Note: the 2nd[t] LLC PDU in PDP context2.
26A	SS -> MS	PACKET UPLINK ACK/NACK	FINAL_ACK_INDICATION = '1'. Acknowledge all received data, containing valid RRBP, sent on PACCH.
27A	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	Received on the block specified by RRBP on PACCH of the assigned PDCH.

Specific Message Contents

PACKET UPLINK ASSIGNMET message in step 13:

Same as in 42.3.3.1.1.3, step 10 of the test sequence testing the MS supporting two PDP contexts.

42.3.3.2 Dynamic Allocation / Resource reallocation / Abnormal

42.3.3.2.1 Dynamic Allocation / Resource reallocation / Abnormal / T3168 expiry

42.3.3.2.1.1 Conformance requirements

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

References

GSM 04.60, 8.1.1.1.2

42.3.3.2.1.2 Test purposes

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

1. The MS retransmits the PACKET RESOURCE REQUEST message unless the PACKET RESOURCE REQUEST has already been transmitted four times,

2. The MS returns to idle mode after PACKET RESOURCE REQUEST has been transmitted four times.

42.3.3.2.3 Method of test

Initial Conditions

System Simulator:

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

Mobile Station:

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

- for the MS supporting two PDP contexts: test PDP context2 and context5 activated,

- for the MS supporting one PDP context and SMS over GPRS: test PDP context5 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,
Support activation of at least one PDP context,
Support two PDP contexts,
Support SMS,
Support SMS over GPRS
The way to initiate an uplink packet transfer,
The way to trigger transferring new user data in a different PDP context while an uplink transfer is in progress,
The way to trigger sending an MO short message.

Test Procedure

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

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

SS waits 0,55 s after receiving the 4th PACKET RESOURCE REQUEST and then sends PACKET DOWNLINK ASSIGNMENT and polls the MS. The MS answers with PACKET DOWNLINK ACK/NACK.

Maximum Duration of Test

5 min.

Expected Sequence

The branch A is applicable for the MS supporting two PDP contexts. The branch B is applicable for the MS supporting SMS over GPRS and one PDP context.

Step	Direction	Message	Comments
1A	MS	{Uplink dynamic allocation two phase access}	In PDP context2, n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
1B	MS	{Uplink dynamic allocation two phase access}	To trigger the MS to send a short message of 110 octets over GPRS. n = 110 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct.
4	MS		To trigger the MS to transfer 440 octets with the peak throughput class 5 (16k octets/s) and the radio priority 1 in acknowledge RLC mode of the PDP context5.
5	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the PDCH assigned
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct.
8			Repeat steps 6 and 7 three times
9			Repeat steps 5 - 8 twice, Note: the 1st LLC PDU is sent out and the sending 2nd PDU in the PDP context5 is started
10	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned, acknowledge all received data.
11	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the PDCH assigned, the 4th time to send PACKET RESOURCE REQUEST.
12	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent 0,55s after step 11 on PCCCH, a valid RRBP=N+13.
13	MS -> SS	PACKET DOWNLINK ACK/NACK	

Specific Message Contents

PACKET RESOURCE REQUEST message in step 5 and 11:

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

42.3.3.2.2 Dynamic Allocation / Resource reallocation / Abnormal / Invalid assignment

42.3.3.2.2.1 Conformance requirements

1. If the mobile station receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message and detects an invalid Frequency Parameters information element in the message, it shall perform an abnormal release. If PCCCH is present in the cell the mobile station shall perform an abnormal release with system information. If PCCCH is not present, the mobile station shall perform an abnormal release with random access.

2. If the mobile station receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message specifying frequencies that are not all in one frequency band then the mobile station shall perform an abnormal release with random access.

3. if the mobile station receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message assigning fixed allocation MAC mode, the MS shall perform an abnormal release with random access

4. If the mobile station receives a PACKET UPLINK ASSIGNMENT message containing a Frequency Parameters information element specifying a frequency that is in a frequency band not supported by the mobile station then the mobile station shall perform an abnormal release with random access.

References

GSM 04.60, 8.1.1.1.2.1

42.3.3.2.2.2 Test purposes

To verify that during uplink resource reallocation:

1. The MS performs an abnormal release with random access if it receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message specifying frequencies that are not all in one frequency band.

2. The MS performs an abnormal release with random access if it receives a PACKET UPLINK ASSIGNMENT message containing a Frequency Parameters information element specifying a frequency in the frequency band not supported.

3. The MS performs an abnormal release with random access if it receives a PACKET UPLINK ASSIGNMENT message assigning fixed allocation MAC mode.

4. The MS performs an abnormal release with system information if it receives a PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message containing an Invalid Frequency Parameters information element, and if PCCCH is present in the cell.

42.3.3.2.2.3 Method of test

Initial Conditions

System Simulator:

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

Mobile Station:

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

- for the MS supporting two PDP contexts: test PDP context2 and context5 activated,

- for the MS supporting one PDP context and SMS over GPRS: test PDP context5 activated.

Related PICS/PIXIT Statement(s)

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

Support two PDP contexts,
Support SMS
Support SMS over GPRS
The way to initiate an uplink packet transfer,
The way to trigger transferring new user data in a different PDP context while an uplink transfer is in progress.

Test Procedure

An uplink TBF is established and in progress. The MS is triggered to transfer data with a higher radio priority in the same RLC mode. The MS sends PACKET RESOURCE REQUEST. SS sends PACKET UPLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE containing an invalid assignment (k=1…7, see step 6 in expected sequences).

The MS starts random accesses. SS assigns a two-phase dynamic allocation. It is checked that the requested radio priority, throughput and the RLC mode in PACKET RESOURCE REQUEST are in consistence with the test PDP context 5. SS grants the sufficient resources to the MS for transmission of the RLC data blocks until the MS sends PACKET RESOURCE REQUEST. It is checked that the MS has sent only one complete LLC PDU.

The SS assigns new resources to MS for completion the total data transferring.

Maximum Duration of Test

10 min.

Expected Sequence

The branch A in the sequence is applicable for the MS supporting two PDP contexts. The branch B is applicable for the MS supporting SMS over GPRS and one PDP context. The test sequence is executed in total five times, k = 1 … 7. The 7^{th} execution is applicable to the single band MS, but not to the multi-band one.

Step	Direction	Message	Comments
1A	MS	{Uplink dynamic allocation two phase access}	In PDP context2, n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
1B	MS	{Uplink dynamic allocation two phase access}	To trigger the MS to send a short message of 110 octets over GPRS. n = 110 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct.
4	MS		To trigger the MS to transfer 440 octets with the peak throughput class 5 (16k octets/s) and the radio priority 1 in acknowledge RLC mode of the PDP context5.
5	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the PDCH assigned
6 k=1	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign a frequency hopping PDCH, but not all frequencies are in one frequency band.
6 k=2	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign a frequency hopping PDCH, but not all frequencies are in one frequency band.
6 k=3	SS -> MS	PACKET UPLINK ASSIGNMENT	Assign a frequency hopping PDCH, the MA_NUMBER and MA_CHANGE_MARK_1 mismatch the values of MA_NUMBER and MA_CHANGE_MARK stored in the MS.
6 k=4	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign a frequency hopping PDCH, the MA_NUMBER and MA_CHANGE_MARK_1 mismatch the values of MA_NUMBER and MA_CHANGE_MARK stored in the MS.
6 k=5	SS -> MS	PACKETUPLINK ASSIGNMENT	Assign fixed allocation MAC mode.
6 k=6	SS -> MS	PACKET TIMESLOT RECONFIGURE	Assign fixed allocation MAC mode
6 k=7	SS -> MS	PACKETUPLINK ASSIGNMENT	Assigned ARFCN on PDCH is not in the frequency band supported by the MS.
7	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to force the MS making two-phase access procedure. Sent on PAGCH.
9	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 8. Check that PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 1, RLC_MODE = acknowledged mode
10	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block. Sent on PACCH of the same PDCH assigned in step 8.
11	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
12-1	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.

12-2	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the assigned PDCH, acknowledged mode for LLC PDU in a lower radio priority.
13	SS		Repeat step 11 and 12-1 until PACKET RESOURCE REQUEST in 12-2, instead of a RLC data block in 12-1, is received. Observe the Length indicator, M bit and E bit of the received data headers. Check that a complete LLC PDU is transmitted and the transmission of another LLC PDU is not yet started.
14	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned, acknowledge all received data
15	SS -> MS	PACKET TIMESLOT RECONFIGURE	Sent on PACCH of the PDCH assigned in step 10, assigning a new PDCH, USF_GRANULARITY=4.
16	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 15, the USF assigned to the MS.
17	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 15.
18	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 15.
19	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 15.
20	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 15.
21		{Completion of uplink RLC data block transfer}	
22B	MS		Switch off

Note: After the abnormal release for random access in step 7 there are two LLC PDUs waiting for sending. It is assumed in step 9 that the MS requests an uplink PDCH for the LLC PDU in a higher radio priority.

Specific Message Contents

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

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

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

{0|1<Frequency Parameters>}	H (hopping channel)
- Frequency Parameters	
- TSC	Arbitrarily chosen
-	11 (Direct encoding 2)
- MAIO	arbitrarily chosen but different from the value in step 7
- HSN	arbitrarily chosen but different from the value in step 7
- Length of MA Frequency List contents	12 octets
- MA Frequency List contents	Contain following ARFCNs in 1024 range format: 20, 40, 80, 90, 520, 590, 600, 700
Dynamic allocation	0
	As default

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

<table>
<tr><td>{0|1<Frequency Parameters>}</td><td>1 (Frequency Parameters present)</td></tr>
<tr><td>- Frequency Parameters</td><td></td></tr>
<tr><td>- TSC</td><td>Arbitrarily chosen</td></tr>
<tr><td>-</td><td>01 (Indirect encoding)</td></tr>
<tr><td>- MAIO</td><td>Arbitrarily chosen</td></tr>
<tr><td>- MA_NUMBER</td><td>Arbitrarily select a value that does not present in PSI2 message and different from 14 and 15</td></tr>
<tr><td>- {0|1<CHANGE_MARK_1}</td><td>0 (no CHANGE_MARK_1)</td></tr>
<tr><td>- {0|1<CHANGE_MARK_2}</td><td>1 (CHANGE_MARK_2 present)</td></tr>
<tr><td>- CHANGE_MARK_2</td><td>Arbitrarily select a value that mismatches PSI2_CHANGE_MARK</td></tr>
<tr><td>Dynamic allocation</td><td>01
As defualt</td></tr>
</table>

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

<table>
<tr><td>{0|1<Frequency Parameters>}</td><td>1 (hopping channel)</td></tr>
<tr><td>- Frequency Parameters</td><td></td></tr>
<tr><td>- TSC</td><td>Arbitrarily chosen</td></tr>
<tr><td>-</td><td>01 (Indirect encoding)</td></tr>
<tr><td>- MAIO</td><td>Arbitrarily chosen</td></tr>
<tr><td>- MA_NUMBER</td><td>Arbitrarily select a value that does not present in PSI2 message and different from 14 and 15</td></tr>
<tr><td>- {0|1<CHANGE_MARK_1}</td><td>1 (CHANGE_MARK_1 present)</td></tr>
<tr><td>- CHANGE_MARK_1</td><td>Arbitrarily choose a value which mismatches PSI2_CHANGE_MARK</td></tr>
<tr><td>- {0|1<CHANGE_MARK_2}</td><td>0 (no CHANGE_MARK_2)</td></tr>
<tr><td>Dynamic allocation</td><td>0
As default</td></tr>
</table>

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

As default PACKET UPLINK ASSIGNMET for fixed allocation.

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

Any message contents of PACKET TIMESLOT RECONFIGURE for the fixed allocation.

PACKET UPLINK ASSIGNMET message in step 6 for k=7:

<table>
<tr><td>{0|1<Frequency Parameters>}</td><td>1 (Frequency Parameters present)</td></tr>
<tr><td>- Frequency Parameters</td><td></td></tr>
<tr><td>- TSC</td><td>Arbitrarily chosen</td></tr>
<tr><td>-</td><td>00 (ARFCN no hopping)</td></tr>
<tr><td>- ARFCN</td><td>For GSM 900, 650
For DCS 1800, 30</td></tr>
<tr><td>Dynamic allocation</td><td>01 (Dynamic allocation)
As default</td></tr>
</table>

PACKET RESOURCE REQUEST message in step 9:

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

PACKET RESOURCE REQUEST message in step 12-2:

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

PACKET TIMESLOT RECONFIGURE message in step 15

<table>
<tr><td>PAGE_MODE</td><td>Normal</td></tr>
<tr><td></td><td>0, Global TFI as reference</td></tr>
<tr><td>- Global TFI</td><td>0, uplink TFI</td></tr>
<tr><td></td><td>a different value as assigned in the current uplink</td></tr>
<tr><td>CHANNEL_CODING_COMMAND</td><td>Arbitrarily chosen from valid values</td></tr>
<tr><td>Global packet Timing Advance</td><td></td></tr>
<tr><td>- {0|1<TIMING_ADVANCE_VALUE>}</td><td>1 (timing advance value)</td></tr>
<tr><td>- TIMING_ADVANCE_VALUE</td><td>30 bit periods</td></tr>
<tr><td>- {0|1<TIMING_ADVANCE_INDEX> <TIMING_ADVANCE_TIMESLOT_NUMBER >}</td><td>0 (no timing advance index)</td></tr>
<tr><td>DOWNLINK_RLC_MODE</td><td>acknowledged mode</td></tr>
<tr><td>CONTROL_ACK</td><td>0</td></tr>
<tr><td>{0|1<DOWNLINK_TFI_ASSIGNMENT>}</td><td>0</td></tr>
<tr><td>{0|1<UPLINK_TFI_ASSIGNMENT>}</td><td>0</td></tr>
<tr><td>DOWNLINK_TIMESLOT_ALLOCATION</td><td>No Timeslot assigned</td></tr>
<tr><td>{0|1<Fequency parameters>}</td><td>0</td></tr>
<tr><td>Dynamic allocation</td><td>0</td></tr>
<tr><td>- Extended Dynamic Allocation</td><td>0 (Dynamic allocation)</td></tr>
<tr><td>{0|1<P0>}</td><td>0</td></tr>
<tr><td>- USF GRANULARITY</td><td>1 (4 RLC block)</td></tr>
<tr><td>- {0|1<RLC_DATA_BLOCKS_GRANTED>}</td><td>0 (open-ended TBF)</td></tr>
<tr><td>- {0|1<TBF_STARTING_TIME>}</td><td>0 (no starting time)</td></tr>
<tr><td>-</td><td>1 (Timeslot Allocation with Power Control Parameters)</td></tr>
<tr><td>- ALPHA</td><td>0.5</td></tr>
<tr><td>- {0|1<USF_TNx><GAMMA_TNx>}</td><td>00000001 (timeslot 7 assigned)</td></tr>
<tr><td>- USF_TN_7</td><td>Arbitrarily chosen but different from current value</td></tr>
<tr><td>- $GAMMA\_TN_7$</td><td>For GSM 900, +9 dBm
For DCS 1800, +6 dBm</td></tr>
<tr><td></td><td>00</td></tr>
</table>

42.3.3.3 Dynamic Allocation / Resource reallocation / Reject

42.3.3.3.1 Conformance requirements

1. On receipt of a PACKET ACCESS REJECT message, the mobile station shall stop timer T3168 if running and return to packet idle mode. Before initiating a new packet access procedure the mobile station shall decode the PRACH Control Parameters if they are broadcast.
2. If the PACKET ACCESS REJECT message contains a WAIT_INDICATION field in a Reject structure addressed to the mobile station, the mobile station shall start timer T3172 and if the mobile station has additional RLC data blocks to transmit, it shall initiate a new TBF establishment procedure on the RACH or PRACH, but the mobile station is not allowed to make a new attempt for packet access in the same cell until timer T3172 expires, it may, however, attempt packet access in an other cell after successful cell reselection. A mobile station in GPRS MS class A or B mode of operation may attempt to enter the dedicated mode in the same cell before timer T3172 has expired. During the time T3172 is running, the mobile station shall ignore all received PACKET PAGING REQUEST messages except paging request to trigger RR connection establishment.

References

GSM 04.60, 8.1.1.1.2

42.3.3.3.2 Test purposes

To verify that during the uplink resource reallocation:

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

42.3.3.3.3 Method of test

Initial Conditions

System Simulator:

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

Mobile Station:

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

- for the MS supporting two PDP contexts: test PDP context2 and context5 activated,

- for the MS supporting one PDP context and SMS over GPRS: test PDP context5 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service,
Support activation of at least one PDP context,
Support two PDP contexts,
Support SMS,
Support SMS over GPRS,
The way to initiate an uplink packet transfer,
The way to trigger transferring new user data in a different PDP context while an uplink transfer is in progress,
The way to trigger the MS sending an MO short message over GPRS.

Test Procedure

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

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

SS assigns a two-phase dynamic allocation. It is checked that the requested radio priority, throughput and the RLC mode in PACKET RESOURCE REQUEST are in consistence with the test PDP context 5. SS grants the sufficient resources to the MS for transmission of the RLC data blocks until the MS sends PACKET RESOURCE REQUEST. It is checked that the MS has sent only one complete LLC PDU.

SS acknowledges all received data and assigns new resources to the MS to complete the RLC data block transferring..

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

Maximum Duration of Test

5 min.

Expected Sequence

The test sequence is executed twice for k = 1 … 2. The branch A in the sequence is applicable for the MS supporting two PDP contexts. The branch B is applicable for the MS supporting SMS over GPRS and one PDP context.

Step	Direction	Message	Comments
1A	MS	{Uplink dynamic allocation two phase access}	In PDP context2, n = 220 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 4, RLC_MODE = acknowledged mode.
1B	MS	{Uplink dynamic allocation two phase access}	To trigger the MS to send a short message of 110 octets over GPRS. n = 110 octets, without starting time, USF_GRANULARITY = 1 block, RLC_DATA_BLOCKS_GRANTED = open-end TLLI_BLOCK_CHANNEL_CODING: cs1, CHANNEL_CODING_COMMAND: cs1, RLC_MODE = acknowledged mode.
2	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
3	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct.
4	MS		To trigger the MS to transfer 440 octets with the peak throughput class 5 (16k octets/s) and the radio priority 1 in acknowledge RLC mode of the PDP context5.
5	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the PDCH assigned
6	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH, the USF assigned to the MS.
7	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding as specified by CHANNEL_CODING_COMMAND, the TFI is correct.
8	SS -> MS	PACKET ACCESS REJECT	Sent on the PACCH of the PDCH, including the same address reference received from step 5 addressing the MS, For k = 1 without WAIT_INDICATION For k = 2 with WAIT_INDICATION.
9	MS -> SS	PACKET CHANNEL REQUEST	Received on PRACH. For k=2, check that the random access is received not before 28.5s from step 8
10	SS -> MS	PACKET UPLINK ASSIGNMENT	Single block assignment, to force the MS making two-phase access procedure. Sent on PAGCH.
11	MS -> SS	PACKET RESOURCE REQUEST	Received on the single block assigned in step 8. Check that PEAK_THROUGHPUT_CLASS = 5, RADIO_PRIORITY = 1, RLC_MODE = acknowledged mode
12	SS -> MS	PACKET UPLINK ASSIGNMENT	Open-ended uplink dynamic allocation, no starting time, USF_GRANULARITY = single block. Sent on PACCH of the same PDCH assigned in step 8.
13	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned, the USF assigned to the MS.
14-1	MS -> SS	UPLINK RLC DATA BLOCK	Received on the assigned PDTCH. Check that the coding and the TFI are correct.
14-2	MS -> SS	PACKET RESOURCE REQUEST	Received on the PACCH of the assigned PDCH, acknowledged mode for LLC PDU in a lower radio priority.

15	SS		Repeat step 13 and 14-1 until PACKET RESOURCE REQUEST in 14-2, instead of a RLC data block in 14-1, is received. Observe the Length indicator, M bit and E bit of the received data headers. Check that a complete LLC PDU is transmitted and the transmission of another LLC PDU is not yet started.
16	SS -> MS	PACKET UPLINK ACK/NACK	Sent on the PACCH of the PDCH assigned, acknowledge all received data
17	SS -> MS	PACKET TIMESLOT RECONFIGURE	Sent on PACCH of the PDCH assigned in step 12, assigning a new PDCH, USF_GRANULARITY=4.
18	SS -> MS	PACKET DOWNLINK DUMMY CONTROL BLOCK	Sent on the PACCH of the PDCH assigned in step 17, the USF assigned to the MS.
19	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 17.
20	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 17.
21	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 17.
22	MS -> SS	UPLINK RLC DATA BLOCK	Received on the PDTCH assigned in step 17.
23		{Completion of uplink RLC data block transfer}	
24B	MS		Switch off

Specific Message Contents

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

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

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

MESSAGE_TYPE	1 00001
PAGE_MODE	Normal Paging
Reject	
-	0 (TLLI)
- TLLI	The same value as the TLLI received
-	1 (WAIT_INDICATION present)
- WAIT_INDICATION	30 seconds
- WAIT_INDICATION_SIZE	0 (unites of seconds)
-	0 (end of reject IE)

PACKET RESOURCE REQUEST message in step 9:

Same as in 42.3.3.2.2, step 11.

PACKET RESOURCE REQUEST message in step 14-2

Same as in 42.3.3.2.2, step 12-2.

PACKET TIMESLOT RECONFIGURE message in step 17

Same as in 42.3.3.2.2, step 15.

42.3.4 Default message contents

The following default values of messages and the default contents of messages are defined for clause 42.3. They, unless indicated otherwise in clause 42.3, shall be transmitted by the system simulator and are required to be received from the MS under test.

In this clause, decimal values are normally used. However, sometimes a hexadecimal value, indicated by an "Hex", or a binary value, indicated by a "Binary" is used.

All macro definitions are referred to clause 40.5 and test PDP contexts are referred to clause 40.6.

The default initial conditions used in clause 42.3 are that PBCCH is present.

PACKET CHANNEL REQUEST message:

Access Type	"One phase access request" or "Two phase access request"
Multislot class	As declared (valid for one phase access request)
Radio priority	Same as in the test PDP context applied to the test, or, Priority level 3 for SMS
Random Reference	Any value

PACKET CONTROL ACKNOWLEDGEMENT message:

MESSAGE_TYPE	000001
TLLI	Any value
CTRL_ACK	Any value
Spare padding	Spare Padding

MESSAGE_TYPE for 11 bit: 1111 1100 1, MESSAGE_TYPE for 8 bit: 0111 11, without TLLI.

PACKET DOWNLINK ACK/NACK message:

MESSAGE_TYPE	000010
DOWNLINK_TFI	pertaining to the downlink TBF
Ack/Nack Description	
- FINAL_ACK_INDICATION	0 (not final ack)
- STARTING_SEQUENCE_NUMBER	Any value
- RECEIVED_BLOCK_BITMAP	Any value
{0|1<Channel Request Description>}	0 (no channel request)
Channel Quality Report	
- C_VALUE	Any value
- RXQUAL	Any value
- SIGN_VAR	Any value
- {0|1<I_LEVEL_TN0>}	Any value
- {0|1<I_LEVEL_TN1>}	Any value
- {0|1<I_LEVEL_TN2>}	Any value
- {0|1<I_LEVEL_TN3>}	Any value
- {0|1<I_LEVEL_TN4>}	Any value
- {0|1<I_LEVEL_TN5>}	Any value
- {0|1<I_LEVEL_TN6>}	Any value
- {0|1<I_LEVEL_TN7>}	Any value
spare padding	Spare Padding

PACKET DOWNLINK ASSIGNMET message:

<table>
<tr><td>MESSAGE_TYPE</td><td>000010</td></tr>
<tr><td>PAGE_MODE</td><td>Normal Paging</td></tr>
<tr><td>{0|1<PERSISTENCE_LEVEL>}</td><td>0</td></tr>
<tr><td>-</td><td>10 (address is TLLI)</td></tr>
<tr><td>- TLLI</td><td>same value as received from MS since GPRS attached</td></tr>
<tr><td></td><td>0, message escape</td></tr>
<tr><td>MAC_MODE</td><td>Dynamic Allocation</td></tr>
<tr><td>RLC_MODE</td><td>acknowledged mode</td></tr>
<tr><td>CONTROL_ACK</td><td>0</td></tr>
<tr><td>TIMESLOT_ALLOCATION</td><td>single slot arbitrarily chosen from valid values, default slot 2</td></tr>
<tr><td>Packet Timing Advance</td><td></td></tr>
<tr><td>- {0|1<TIMING_ADVANCE_VALUE>}</td><td>1 (presence of the timing advance value)</td></tr>
<tr><td>- TIMING_ADVANCE_VALUE</td><td>30 bit periods</td></tr>
<tr><td>- {0|1<TIMING_ADVANCE_INDEX> <TIMING_ADVANCE_TIMESLOT_NUMBER >}</td><td>0 (no timing advance index)</td></tr>
<tr><td>- {0|1<P0><BTS_PWR_CTRL_MODE>}</td><td>0</td></tr>
<tr><td>{0|1<Frequency Parameters>}</td><td>1 (Frequency Parameters present)</td></tr>
<tr><td>- Frequency Parameters</td><td></td></tr>
<tr><td>- TSC</td><td>Value arbitrarily chosen from valid values (default 5)</td></tr>
<tr><td>-</td><td>01 (indirect encoding)</td></tr>
<tr><td>- MAIO</td><td>Value arbitrarily chosen</td></tr>
<tr><td>- MA_NUMBER</td><td>Value arbitrarily chosen from PSI2s defined</td></tr>
<tr><td>- {0|1<CHANGE_MARK_1> {0|1<CHANGE_MARK_2>}}</td><td>00</td></tr>
<tr><td>{0|1<DOWNLINK_TFI_ASSIGNMENT>}</td><td>1 (assign downlink TFI)</td></tr>
<tr><td>- DOWNLINK_TFI_ASSIGNMENT</td><td>Arbitrarily chosen from valid values (default 3)</td></tr>
<tr><td>{0|1<Power Control Parameters>}</td><td>1 (Power Control Parameters present)</td></tr>
<tr><td>- ALPHA</td><td>0.5</td></tr>
<tr><td>- {0|1<GAMMA_TN0>}</td><td>Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN0)</td></tr>
<tr><td>- {0|1<GAMMA_TN1>}</td><td>Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN1)</td></tr>
<tr><td>- {0|1<GAMMA_TN2>}</td><td>Depending on the value in TIMESLOT_ALLOCATION (default 1 GAMMA_TN2)</td></tr>
<tr><td>- GAMMA_TN2</td><td>For GSM 900, +9 dBm
For DCS 1800, +6 dBm</td></tr>
<tr><td>- {0|1<GAMMA_TN3>}</td><td>Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN0)</td></tr>
<tr><td>- {0|1<GAMMA_TN4>}</td><td>Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN4)</td></tr>
<tr><td>- {0|1<GAMMA_TN5>}</td><td>Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN5)</td></tr>
<tr><td>- {0|1<GAMMA_TN6>}</td><td>Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN6)</td></tr>
<tr><td>- {0|1<GAMMA_TN7>}</td><td>Depending on the value in TIMESLOT_ALLOCATION (default 0 no GAMMA_TN7)</td></tr>
<tr><td>{0|1<TBF_STARTING_TIME>}</td><td>1 (starting time present)</td></tr>
<tr><td>- TBF_STARTING_TIME</td><td>0, absolute frame number encoding, indicating (current frame + 13 frames)</td></tr>
<tr><td>{0|1<Measurement Mapping>}</td><td>0 (no measurement mapping)</td></tr>
<tr><td>spare padding</td><td>Spare Padding</td></tr>
</table>

PACKET DOWNLINK DUMMY CONTROL BLOCK message:

MESSAGE_TYPE	1 00101
PAGE_MODE	Normal Paging
{0|1<PERSISTENCE_LEVEL>}	0
spare padding	Spare Padding

PACKET PAGING REQUEST message:

MESSAGE_TYPE	1 00010
PAGE_MODE	Normal Paging
{0|1<PERSISTENCE_LEVEL>}	0 (no persistence level present)
{0|1<NLN>}	0 (no notification list number)
{1|<Repeated Page info>}	1 (start of Repeated Page info)
-	0 (Page request for TBF establishment)
-	0 (PTMSI)
- PTMSI	P-TMSI allocated during GPRS attach procedure
-	0 (end of Repeated Page info)
spare padding	Spare Padding

PACKET RESOURCE REQUEST message (two phase access):

MESSAGE_TYPE	000101
{0|1<ACCESS_TYPE>}	1 (response to single block assignment)
- ACCESS_TYPE	00 (two phase access)
{0<Global TFI> | 1 <TLLI>}	1 (TLLI)
- TLLI	Any value
{0|1<MS Radio Access Capability>}	1 (MS Radio Access Capability)
- MS Radio Access Capability	Any value
Channel Request Description	
- PEAK_THROUGHPUT_CLASS	As defined in the Test PDP context in the test case
- RADIO_PRIORITY	As defined in the Test PDP context in the test case
- RLC_MODE	As defined in the Test PDP context in the test case
- LLC_PDU_TYPE	1 (not SACK or ACK)
- RLC_OCTET_COUNT	Any value
{0|1<MA_CHANGE_MARK>}	1, same as PSI2 change mark
C_VALUE	Any value
{0|1<SIGN_VAR>}	Any value
{0|1<I_LEVEL_TN0>}	Any value
{0|1<I_LEVEL_TN1>}	Any value
{0|1<I_LEVEL_TN2>}	Any value
{0|1<I_LEVEL_TN3>}	Any value
{0|1<I_LEVEL_TN4>}	Any value
{0|1<I_LEVEL_TN5>}	Any value
{0|1<I_LEVEL_TN6>}	Any value
{0|1<I_LEVEL_TN7>}	Any value
spare padding	Spare Padding

PACKET TIMESLOT RECONFIGURE message (dynamic allocation without assigning a new TBF):

MESSAGE_TYPE	000111
PAGE_MODE	Normal Paging
0<GLOBAL_TFI>	0 The TFI value of the uplink TBF or downlink TBF which this message applies to (default 00101) 0, message escape
CHANNEL_CODING_COMMAND	arbitrarily chosen from valid values (default CS-1)
Global Packet Timing Advance	
- {0|1<TIMING_ADVANCE_VALUE>}	1 (timing advance value present)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0|1<UPLINK_TIMING_ADVANCE_INDEX> <UPLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>}	0 (no uplink timing advance index) The MS stops the operation of the continuous timing advance procedure.
- {0|1<DOWNLINK_TIMING_ADVANCE_INDEX> <DOWNLINK_TIMING_ADVANCE_TIMESLOT_NUMBER>}	0 (no downlink timing advance index) The MS stops the operation of the continuous timing advance procedure.
DOWNLINK_RLC_MODE	Same as in the Test PDP context used
CONTROL_ACK	0
{0|1<DOWNLINK_TFI_ASSIGNMENT>	0
{0|1<UPLINK_TFI_ASSIGNMENT>	0
DOWNLINK_TIMESLOT_ALLOCATION	arbitrarily chosen from valid values (default 2)
{0|1<Frequency Parameters>}	0 (use current parameters)
Dynamic allocation	0
- Extended Dynamic Allocation	0 (Dynamic allocation)
- {0|1<P0><PR_MODE>}	0
- USF_GRANULARITY	0, one block
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	0 (no RLC_DATA_BLOCKS_GRANTED, open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	1 (starting time)
- TBF_STARTING_TIME	1, relative frame number encoding indicating current frame + 104 by absolute encoding
-	1 (Timeslot Allocation with Power Control Parameters) one slot arbitrarily chosen and different from current slot, the following USF_TNx and GAMMA_TNx shall be corresponding to the chosen value, default timeslot 3.
- ALPHA	0.5
- {0|1<USF_TN0><GAMMA_TN0>}	L (timeslot 0 not assigned)
- {0|1<USF_TN1><GAMMA_TN1>}	L (timeslot 1 not assigned)
- {0|1<USF_TN2><GAMMA_TN2>}	L (timeslot 2 not assigned)
- {0|1<USF_TN3><GAMMA_TN3>}	H (timeslot 3 assigned)
- USF_TN3	arbitrarily chosen and different from current value, default 4
- GAMMA_TN3	For GSM 900, +9 dBm For DCS 1800, +6 dBm
- {0|1<USF_TN4><GAMMA_TN4>}	L (timeslot 4 not assigned)
- {0|1<USF_TN5><GAMMA_TN5>}	L (timeslot 5 not assigned)
- {0|1<USF_TN6><GAMMA_TN6>}	L (timeslot 6 not assigned)
- {0|1<USF_TN7><GAMMA_TN7>}	L (timeslot 7 not assigned)
spare padding	Spare Padding

For assignment of an uplink TBF while a downlink TBF has been established, the address information should be changed to DOWNLINK_TFI of Global_TFI. UPLINK_TFI_ASSIGNMENT is present.

PACKET UPLINK ACK/NACK message:

<table>
<tr><td>MESSAGE_TYPE</td><td>001001</td></tr>
<tr><td>PAGE_MODE</td><td>Normal Paging</td></tr>
<tr><td>UPLINK_TFI</td><td>00,
same as the TFI value of the TBF which the message applies
0, message escape</td></tr>
<tr><td>CHANNEL_CODING_COMMAND</td><td>same coding scheme as in the assigned TBF which the message applies to</td></tr>
<tr><td>Ack/Nack Description</td><td></td></tr>
<tr><td>- FINAL_ACK_INDICATION</td><td>0 (not a final ACK)</td></tr>
<tr><td>- STARTING_SEQUENCE_NUMBER</td><td>V(R)</td></tr>
<tr><td>- RECEIVED_BLOCK_BITMAP</td><td>acknowledge the all data blocks transmitted by the MS</td></tr>
<tr><td>{0|1<CONTENTION_RESOLUTION_TLLI>}</td><td>0 (no contention resolution TLLI)</td></tr>
<tr><td>{0|1<Packet Timing Advance>}</td><td>0 (no packet timing advance)</td></tr>
<tr><td>{0|1<Power Control Parameters>}</td><td>0 (no power control parameters)</td></tr>
<tr><td>{0|1<Extension bits>}</td><td>0 (no extension bits present)</td></tr>
<tr><td>{0|1<Fixed Allocation parameters>}</td><td>0 (no fixed allocation parameters present)</td></tr>
<tr><td>spare padding</td><td>Spare Padding</td></tr>
</table>

PACKET UPLINK ASSIGNMENT message (two-phase dynamic allocation assigning a TBF):

MESSAGE_TYPE	001010
PAGE_MODE	Normal Paging
{0|1<PERSISTENCE_LEVEL>}	0 (no persistence level present)
- Address information	10 (TLLI)
- TLLI	The value received from the MS
	0, message escape
CHANNEL_CODING_COMMAND	Arbitrarily chosen from the valid values (default CS-1)
TLLI_BLOCK_CHANNEL_CODING	‘0’B, cs-1
Packet Timing Advance	
- {0|1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0|1<TIMING_ADVANCE_INDEX> <TIMING_ADVANCE_TIMESLOT_NUMBER >}	0 (no timing advance index)
{0|1<Frequency Parameters>}	1 (Frequency Parameters present)
- Frequency Parameters	
- TSC	Arbitrarily chosen (default 5)
-	01 (indirect encoding)
- MAIO	Value arbitrarily chosen
- MA_NUMBER	Value arbitrarily chosen from PSI2s defined (default 0001)
- {0|1<CHANGE_MARK_1> {0|1<CHANGE_MARK_2>}}	00
Dynamic allocation	01
- Extended Dynamic Allocation	0 (Dynamic allocation)
- {0|1<P0><PR_MODE>}	0
- USF_GRANULARITY	0, one block
- {0|1<UPLINK_TFI_ASSIGNMENT>}	1 (uplink TFI assignment)
- UPLINK_TFI_ASSIGNMENT	Arbitrarily chosen (default 00101)
- {0|1<RLC_DATA_BLOCKS_GRANTED>}	0 (no RLC_DATA_BLOCKS_GRANTED, open-ended TBF)
- {0|1<TBF_STARTING_TIME>}	0 (no starting time)
-	1 (Timeslot Allocation with Power Control Parameters) one slot arbitrarily chosen and the following USF_TNx and GAMMA_TNx shall be corresponding to the chosen value, default timeslot 2 assigned)
- ALPHA	0.5
- {0|1<USF_TN0><GAMMA_TN0>}	0 (timeslot 0 not assigned)
- {0|1<USF_TN1><GAMMA_TN1>}	0 (timeslot 1 not assigned)
- {0|1<USF_TN2><GAMMA_TN2>}	1 (timeslot 2 assigned)
- USF_TN2	Arbitrarily chosen (default 101)
- GAMMA_TN2	For GSM 900, +9 dBm For DCS 1800, +6 dBm
- {0|1<USF_TN3><GAMMA_TN3>}	0 (timeslot 3 not assigned)
- {0|1<USF_TN4><GAMMA_TN4>}	0 (timeslot 4 not assigned)
- {0|1<USF_TN5><GAMMA_TN5>}	0 (timeslot 5 not assigned)
- {0|1<USF_TN6><GAMMA_TN6>}	0 (timeslot 6 not assigned)
- {0|1<USF_TN7><GAMMA_TN7>}	0 (timeslot 7 not assigned)
spare padding	Spare Padding

1. For one-phase uplink assignment, the Packet Request reference is used for addressing the MS.
2. For re-assignment of an uplink TBF, the address information should be changed to UPLINK_TFI of Global_TFI. UPLINK_TFI_ASSIGNMENT is absent.
3. For assignment of an uplink TBF while a downlink TBF has been established, the address information should be changed to DOWNLINK_TFI of Global_TFI. UPLINK_TFI_ASSIGNMENT is present.

PACKET UPLINK ASSIGNMENT message (one-phase fixed allocation of n blocks):

<table>
<tr><td>MESSAGE_TYPE</td><td>001010</td></tr>
<tr><td>PAGE_MODE</td><td>Normal Paging</td></tr>
<tr><td>{0|1<PERSISTENCE_LEVEL>}</td><td>0 (no persistence level present)</td></tr>
<tr><td>-</td><td>111 (Packet Request Reference)</td></tr>
<tr><td>- RANDOM_ACCESS_INFORMATION value</td><td>As received in PACKET CHANNEL REQUEST</td></tr>
<tr><td>- FRAME_NUMBER</td><td>The frame number which PACKET CHANNEL REQUEST was received on</td></tr>
<tr><td></td><td>0, message escape</td></tr>
<tr><td>CHANNEL_CODING_COMMAND</td><td>Arbitrarily chosen (default CS-1 coding)</td></tr>
<tr><td>TLLI_BLOCK_CHANNEL_CODING</td><td>‘0’B, cs-1</td></tr>
<tr><td>Packet Timing Advance</td><td></td></tr>
<tr><td>- {0|1<TIMING_ADVANCE_VALUE>}</td><td>1 (timing advance value)</td></tr>
<tr><td>- TIMING_ADVANCE_VALUE</td><td>30 bit periods</td></tr>
<tr><td>- {0|1<TIMING_ADVANCE_INDEX> <TIMING_ADVANCE_TIMESLOT_NUMBER>}</td><td>0 (no timing advance index)</td></tr>
<tr><td>{0|1<Frequency Parameters>}</td><td>1 (Frequency Parameters present)</td></tr>
<tr><td>- Frequency Parameters</td><td></td></tr>
<tr><td>- TSC</td><td>Arbitrarily chosen (default 5)</td></tr>
<tr><td>-</td><td>01 (indirect encoding)</td></tr>
<tr><td>- MAIO</td><td>Value arbitrarily chosen</td></tr>
<tr><td>- MA</td><td>Value arbitrarily chosen from PSI2s defined</td></tr>
<tr><td>- {0|1<CHANGE_MARK_1> {0|1<CHANGE_MARK_2>}}</td><td>00</td></tr>
<tr><td>Fixed allocation</td><td>11</td></tr>
<tr><td>- {0|1<UPLINK_TFI_ASSIGNMENT>}</td><td>1 (uplink TFI assignment)</td></tr>
<tr><td>- UPLINK_TFI_ASSIGNMENT</td><td>Arbitrarily chosen (default 00101)</td></tr>
<tr><td>- FINAL_ALLOCATION</td><td>1, last allocation of the TBF</td></tr>
<tr><td>- DOWNLINK_CONTROL_TIMESLOT</td><td>Same as the timeslot assigned (default 2)</td></tr>
<tr><td>- {0|1<P0> <BTS_PWR_CTRL_MODE><PR_MODE>}</td><td>0</td></tr>
<tr><td>-</td><td>0 (timeslot allocation),
one slot arbitrarily chosen, default timeslot 2 assigned.</td></tr>
<tr><td>- HALF_DUPLEX_MODE</td><td>0 (no half duplex mode)</td></tr>
<tr><td>- TBF_STARTING_TIME</td><td>1, relative frame number encoding
indicating current frame + 91 by absolute encoding</td></tr>
<tr><td>-</td><td>01 (bit map is blocks without length)</td></tr>
<tr><td>- ALLOCATION_BITMAP</td><td>n blocks</td></tr>
</table>

1. For two-phase uplink assignment, the TLLI is used for addressing the MS.

2. For assignment of an uplink TBF while a downlink TBF has been established, the address information should be changed to DOWNLINK_TFI of Global_TFI. UPLINK_TFI_ASSIGNMENT is present.

PACKET UPLINK ASSIGNMENT message (single block allocation):

MESSAGE_TYPE	001010
PAGE_MODE	Normal Paging
{0|1<PERSISTENCE_LEVEL>}	0 (no persistence level present)
-	111 (Packet Request Reference)
- RANDOM_ACCESS_INFORMATION value	As received in PACKET CHANNEL REQUEST
- FRAME_NUMBER	The frame number which PACKET CHANNEL REQUEST was received on
	0, message escape
CHANNEL_CODING_COMMAND	Arbitrarily chosen from the valid values (default CS-1)
TLLI_BLOCK_CHANNEL_CODING	'0'B
Packet Timing Advance	
- {0|1<TIMING_ADVANCE_VALUE>}	1 (timing advance value)
- TIMING_ADVANCE_VALUE	30 bit periods
- {0|1<TIMING_ADVANCE_INDEX> <TIMING_ADVANCE_TIMESLOT_NUMBER >}	0 (no timing advance index)
{0|1<Frequency Parameters>}	1 (Frequency Parameters present)
- Frequency Parameters	
- TSC	Arbitrarily chosen (default 5)
-	00 (ARFCN no hopping)
- ARFCN	For GSM 900, 30 For DCS 1800, 650
Single block allocation	10
- TIMESLOT_NUMBER	Arbitrarily chosen (default slot 2)
- {0|1<ALPHA><GAMMA_TN>}	1
- ALPHA	0.5
- GAMMA_TN	For GSM 900, +9 dBm For DCS 1800, +6 dBm
- {0|1<P0> <BTS_PWR_CTRL_MODE><PR_MODE>}	0
- TBF_STARTING_TIME	1, relative frame number encoding indicating current frame + 91 by absolute encoding
spare pending	Spare pending

ATTACH REQUEST message:

Protocol discriminator	1000
Skip indicator	0000
Attach request message identity	00000001
MS network capability	
- IE length	
- GEA bits	1, GEA 1 available
- SM capabilities via dedicated channels	Any value
- SM capabilities via GPRS channels	Any value
- USC2 support	Any value
- SS screening Indicator	Any value
- Padding bit	Spare Padding
Attach type	GPRS attach (MS class C) or Combined GPRS/IMSI attach (MS class A or B)
GPRS ciphering key sequence number	no key available
DRX parameter	Any value
P-TMSI or IMSI	IMSI
Old routing area identification	Any value
MS Radio Access capability	Any value
Old P-TMSI signature	Any or omit
Requested READY timer value	Any or omit

ATTACH ACCEPT message:

Protocol discriminator	1000
Skip indicator	0000
Attach accept message identity	00000010
Attach result	For MS class A and B, Combined GPRS/IMSI attached For MS class C, GPRS only attached
Force to standby	not indicated
Periodic RA update timer	Timer is deactivated
Radio priority for SMS	Priority level 3
Spare half octet	Spare half octet
Routing area identification	
- MCC	001 (decimal)
- MNC	01 (decimal)
- LAC	0001H
- RAC	05H
P-TMSI signature	P-TMSI signature
Negotiated READY timer value	32 seconds
Allocated P-TMSI	P-TMSI
MS identity	TMSI
GMM cause	Omit

ATTACH COMPLETE message:

Protocol discriminator	1000
Skip indicator	0000
Attach complete message identity	00000011
Force to standby	Any value
Spare half octet	Spare half octet

42.4 Measurement reports and Cell change order procedures

This clause presents tests for “Measurement Reports and Cell Change Order Procedures” which are specified in GSM 04.60/5.6 and 8.4.

Applicability and default conditions

The clause is applicable for mobiles supporting GPRS.

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

42.4.1 Measurement reports

42.4.1.1 Network Control measurement reporting / Uplink / Normal case

42.4.1.1.1 Conformance requirement

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

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

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

42.4.1.1.2 Test Purpose

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

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

Reference

GSM 04.60, v.6.3.0, Chapters 5.6.1 and 8.3.

42.4.1.1.3 Method of test

Initial conditions

System Simulator:

- 1 cell, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

The way to trigger the MS initiating an uplink packet transfer.

Foreseen final state of the MS

- MS is in transfer mode

Test procedure

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink packet transfer mode (dyn)}	MS is brought into uplink packet transfer mode.
2	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T See specific message contents
3	MS -> SS	RLC data blocks	MS sends data
4	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
5			Repeat steps 3 and 4 until the reporting period has expired.
6	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
7	MS -> SS	RLC data blocks	MS sends data.
8	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
9			Repeat steps 7 and 8 until the reporting period has expired.
10	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
11	MS -> SS	RLC data blocks	MS sends data.
12	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
13	SS ->MS	PACKET MEASUREMENT ORDER	- Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T with new reporting period, which is greater than time to expiry of the timer T3158. See specific message contents
14	MS -> SS	RLC data blocks	MS sends data.
15	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
16			Repeat steps 14 and 15 until the old reporting period has expired.
17	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
18	MS -> SS	RLC data blocks	MS sends data.
19	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
20			Repeat steps 18 and 19 until the new reporting period has expired.
21	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH

Specific message contents

PACKET MEASUREMENT ORDER in step 2:

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

PACKET MEASUREMENT ORDER in step 13:

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

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

42.4.1.2.1 Conformance requirement

The procedure for measurement report sending shall be initiated by the mobile station at expiry of the NC measurement report interval timer T3158. At expiry of the timer T3158 the mobile station shall restart the expired timer T3158, perform the measurements and initiate the packet access. The packet access procedure is initiated by the RR entity in the mobile station with access type 'Single block without TBF establishment' indicated in the PACKET CHANNEL REQUEST message. The radio resource is assigned to the mobile station in a PACKET UPLINK ASSIGNMENT message sent on any PAGCH on the same PCCCH on which the network has received the PACKET CHANNEL REQUEST message.

When receiving a PACKET UPLINK ASSIGNMENT message the mobile station shall send PACKET MEASUREMENT REPORT in the allocated radio block on the assigned PDCH and immediately switch back to the PCCCH in non-DRX mode. No TBF is established and the network shall not acknowledge the reception of the PACKET MEASUREMENT REPORT.

A mobile station may reselect a new cell or may be ordered to reselect a new cell while timer T3158 is active. If time to expiry of timer T3158 is greater than the indicated reporting period for the new cell, the mobile station shall immediately restart timer T3158 with the indicated reporting period for the new cell. Otherwise the timer T3158 shall continue to run.

42.4.1.2.2 Test Purpose

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

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

Reference

GSM 04.60, v.6.3.0, Chapters 7.3 and 5.6.1.

42.4.1.2.3 Method of test

Initial conditions

System Simulator:

- 3 cells, GPRS supported, PCCCH is present

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.

- PDP context established

Related PICS/PIXIT statement

Support of GPRS .

Foreseen final state of the MS

- MS is in idle mode

Test procedure

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PCCCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_I of cell A See specific message contents
2	SS		SS waits 0.5 * the indicated reporting period.
3	SS->MS	PACKET CELL CHANGE ORDER	-Sent on PCCCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_I of cell B with new reporting period, which is shorter than remaining time of the old reporting period. See specific message contents
4	MS ->SS	PACKET CHANNEL REQUEST	To the new cell. 'Single block without TBF establishment.' SS verifies that PACKET CHANNEL REQUEST arrives at the end of correct reporting period.
5	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PAGCH.
6	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
7	MS ->SS	PACKET CHANNEL REQUEST	'Single block without TBF establishment.' SS verifies that PACKET CHANNEL REQUEST arrives at the end of correct reporting period.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PAGCH.
9	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
10	SS->MS	PACKET CELL CHANGE ORDER	-Sent on PCCCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_I of cell C with new reporting period, which is longer than remaining time of the old reporting period. See specific message contents
11	MS ->SS	PACKET CHANNEL REQUEST	'Single block without TBF establishment.' SS verifies that PACKET CHANNEL REQUEST arrives at the end of correct reporting period.
12	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PAGCH.
13	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.
14	MS ->SS	PACKET CHANNEL REQUEST	'Single block without TBF establishment.' SS verifies that PACKET CHANNEL REQUEST arrives at the end of correct reporting period.
15	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PAGCH.
16	MS ->SS	PACKET MEASUREMENT REPORT	Sent on the allocated PDCH.

Specific message contents

PACKET MEASUREMENT ORDER:

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

PACKET CELL CHANGE ORDER in step 3:

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

PACKET CELL CHANGE ORDER in step 10:

NC Measurement parameters NETWORK_CONTROL_ORDER NC_REPORTING_PERIOD_I	 01 (NC1) 010 (1,92 s)

42.4.1.3 Network Control measurement reporting / Downlink transfer/ Normal case

42.4.1.3.1 Conformance requirement

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

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

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

42.4.1.3.2 Test Purpose

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

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

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

Reference

GSM 04.60, v.6.3.0, Chapters 8.1.2.2, 8.3 and 5.6.1.

42.4.1.3.3 Method of test

Initial conditions

System Simulator:

- 1 cell, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS .

Foreseen final state of the MS

- MS is in transfer mode

Test procedure

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PCCCH.
2	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET MEASUREMENT ORDER	-Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T See specific message contents
5	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
6	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
7	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
9	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
10			Repeat steps 6 and 7 until the reporting period has expired.
11	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
12	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
13	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
14	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
15	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
16	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
17	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
18	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
19			Repeat steps 15 and 16 until the reporting period has expired.
20	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
21	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
22	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
23	SS->MS	PACKET MEASUREMENT ORDER	- Sent on PACCH. -Contains NETWORK_CONTROL_ORDER and NC_REPORTING_PERIOD_T with new reporting period. See specific message contents
24	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
25	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
26	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
27	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
28	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
29			Repeat steps 24 and 25 until the reporting period has expired.
30	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH
31	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
32	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
33	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
34	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
35	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
36	MS -> SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
37	SS -> MS	10 RLC data blocks	SS sends data, last block is polling.
38			Repeat steps 33 and 34 until the reporting period has expired.
39	MS->SS	PACKET MEASUREMENT REPORT	- Sent on PACCH. - Contains the "NC measurement report struct" on PACCH

Specific message contents

PACKET MEASUREMENT ORDER in step 4:

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

PACKET MEASUREMENT ORDER in step 23:

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

42.4.2 Cell change order procedures

42.4.2.1 Cell change order procedure / Uplink transfer

42.4.2.1.1 Cell change order procedure / Uplink transfer / Normal case

42.4.2.1.1.1 Conformance requirement

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

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

42.4.2.1.1.2 Test Purpose

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

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

Reference

GSM 04.60, v.6.4.0, Chapter 8.4.

42.4.2.1.1.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS .

The way to trigger the MS initiating an uplink packet transfer.

Foreseen final state of the MS

- MS is in transfer mode

Test procedure

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink packet transfer mode (fixed)}	MS is brought into uplink packet transfer mode. (Fixed allocation)
2	MS -> SS	RLC data blocks	MS sends data
3	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order - USF
5	SS		Check that no more than six data blocks are transmitted from the MS on the old channel.
6		{Uplink packet transfer mode (fixed)}	
7	MS -> SS	RLC data blocks	MS sends data
8	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Specific message contents

None.

42.4.2.1.2 Cell change order procedure / Uplink transfer / Failure cases / T3174 expiry

42.4.2.1.2.1 Conformance requirement

If timer T3174 expires before a response to the PACKET CHANNEL REQUEST message has been received from the new cell, the mobile station shall start timer T3176 and return to the old cell. The mobile station shall send a PACKET CELL CHANGE FAILURE message to the network.

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

42.4.2.1.2.2 Test Purpose

To verify that the mobile station sends a PACKET CELL CHANGE FAILURE message to the network, if timer T3174 expires before a response from the new cell, and returns to the old cell.

Reference

GSM 04.60, v.6.4.0, Chapter 8.4.1.

42.4.2.1.2.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS .

The way to trigger the MS initiating an uplink packet transfer.

Foreseen final state of the MS

- MS is in Transfer mode

Test procedure

MS is brought into uplink packet transfer mode. SS sends the PACKET CELL CHANGE ORDER message to the MS. MS sends several PACKET CHANNEL REQUESTs on the new cell, but the timer T3174 expires before a response to PACKET CHANNEL REQUEST message has been received from the new cell. MS returns to the old cell, sends a PACKET CELL CHANGE FAILURE message to the SS and continues data transfer on the old cell.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink packet transfer mode (dyn)}	MS is brought into uplink packet transfer mode.
2	MS -> SS	RLC data blocks	MS sends data
3	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
4	SS ->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order
5	MS ->SS	PACKET CHANNEL REQUEST	To the new cell.
6	MS		MS sends PACKET CHANNEL REQUESTS until timer T3174 has expired.
7	MS ->SS	PACKET CHANNEL REQUEST	To the old cell.
8	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH.
9	MS ->SS	PACKET CELL CHANGE FAILURE	Error cause:" No response on target cell "
10	MS->SS	RLC data blocks	MS sends data
11	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Specific message contents

PACKET CELL CHANGE FAILURE in step 9:

Packet Cell Change Failure message content: CAUSE	 0001

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

42.4.2.1.3.1 Conformance requirement

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

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

42.4.2.1.3.2 Test Purpose

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

Reference

GSM 04.60, v. 6.4.0, Chapter 8.4.1

42.4.2.1.3.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

The way to trigger the MS initiating an uplink packet transfer.

Foreseen final state of the MS

- MS is in Transfer mode

Test procedure

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink packet transfer mode}	MS is brought into uplink packet transfer mode.
2	MS -> SS	RLC data blocks	MS sends data
3	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order
5	MS->SS	PACKET CHANNEL REQUEST	To the new cell.
6	SS->MS	PACKET ACCESS REJECT	Received from the new cell
7	MS->SS	PACKET CHANNEL REQUEST	To the old cell.
8	SS->MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH.
9	MS ->SS	PACKET CELL CHANGE FAILURE	Error cause:" Packet Access Reject on target cell "
10	MS->SS	RLC data blocks	MS sends data
11	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

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

42.4.2.1.4.1 Conformance requirement

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

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

42.4.2.1.4.2 Test Purpose

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

Reference

GSM 04.60, v.6.4.0, Chapter 8.4.1.

42.4.2.1.4.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

The way to trigger the MS initiating an uplink packet transfer.

Foreseen final state of the MS

- MS is in Transfer mode

Test procedure

MS is brought into uplink packet transfer mode. SS sends the PACKET CELL CHANGE ORDER message to the MS. MS sends the PACKET CHANNEL REQUEST to the new cell. Contention resolution procedure fails in the new cell. MS initiates a random access to the old cell and sends PACKET CELL CHANGE FAILURE message to the network.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink packet transfer mode (dyn)}	MS is brought into uplink packet transfer mode.
2	MS -> SS	RLC data blocks	MS sends data
3	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PCCCH or PACCH. Contains -BSIC + BCCH frequency -The network control order
5	MS->SS	PACKET CHANNEL REQUEST	To the new cell.
6	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on the PACCH.
7	MS -> SS	RLC/MAC data and control blocks	The first three data blocks contain the TLLI. The TLLI should be the same in each RLC data block header.

8	SS->MS	PACKET UPLINK ACK/NACK	Contention resolution procedure fails in the new cell. Message has wrong TLLI.
9	MS ->SS	PACKET CHANNEL REQUEST	To the old cell.
10	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on the PACCH.
11	MS->SS	PACKET CELL CHANGE FAILURE	No error cause.
12	MS->SS	RLC data blocks	MS sends data
13	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Specific message contents

None.

42.4.2.1.5 Cell change order procedure / Uplink transfer / Failure cases / REJECT from the new cell and T3176 expiry

42.4.2.1.5.1 Conformance requirement

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

If the mobile station was in uplink packet transfer before the cell change, the mobile station shall establish a new uplink TBF and send the PACKET CELL CHANGE FAILURE message on this TBF. When the mobile station has sent a PACKET CELL CHANGE FAILURE message, timer T3176 shall be stopped.

If T3176 expires and the mobile station was previous in an uplink packet transfer on the old cell, the mobile station shall perform the abnormal release with random access.

42.4.2.1.5.2 Test Purpose

To verify that the mobile station shall perform the abnormal release with random access, if a PACKET ACCESS REJECT message is received from the new cell and timer T3176 expires.

Reference

GSM 04.60, v. 6.4.0, Chapter 8.4.1

42.4.2.1.5.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

The way to trigger the MS initiating an uplink packet transfer.

Foreseen final state of the MS

- MS is in idle mode.

Test procedure

MS is brought into uplink packet transfer mode. SS sends the PACKET CELL CHANGE ORDER message to the MS. MS sends the PACKET CHANNEL REQUEST. SS sends PACKET ACCESS REJECT message. MS performs the abnormal release with random access.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink packet transfer mode}	MS is brought into uplink packet transfer mode.
2	MS -> SS	RLC data blocks	MS sends data
3	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order
5	MS->SS	PACKET CHANNEL REQUEST	To the new cell.
6	SS->MS	PACKET ACCESS REJECT	Received from the new cell.
7	MS ->SS	PACKET CHANNEL REQUEST	To the old cell. Timer T3176 expires.
8	MS ->SS	PACKET CHANNEL REQUEST	To the old cell.

Specific message contents

None.

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

42.4.2.1.6.1 Conformance requirement

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

42.4.2.1.6.2 Test Purpose

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

Reference

GSM 04.60, v. 6.4.0, Chapter 8.4.2.

42.4.2.1.6.3 Method of test

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.

- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

The way to trigger the MS initiating an uplink packet transfer.

Foreseen final state of the MS

- MS is in Transfer mode

Test procedure

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink packet transfer mode (dyn)}	MS is brought into uplink packet transfer mode.
2	MS -> SS	RLC data blocks	MS sends data
3	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET CELL CHANGE ORDER	Contains -BSIC + BCCH frequency -The network control order MS is not capable of using the ordered frequency.
5	MS->SS	PACKET CELL CHANGE FAILURE	Sent on the PACCH. Error cause "frequency not implemented".
6	MS		MS shall remain on the current PDCH(s).
7	MS -> SS	RLC data blocks	MS sends data
8	SS -> MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Specific message contents

PACKET CELL CHANGE FAILURE in step 5:

Packet Cell Change Failure message content: CAUSE	 0000

42.4.2.2 Cell change order procedure / Downlink transfer

42.4.2.2.1 Cell change order procedure / Downlink transfer / Normal case

42.4.2.2.1.1 Conformance requirement

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

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

42.4.2.2.1.2 Test Purpose

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

To verify that the MS switches to the new cell.

Reference

GSM 04.60, v. 6.4.0, Chapter 8.4

42.4.2.2.1.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

Foreseen final state of the MS

- MS is in Transfer mode

Test procedure

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PCCCH.
2	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
3	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order
5	MS->SS	PACKET CHANNEL REQUEST	To the new cell. Single block without TBF.
6	SS->MS	PACKET UPLINK ASSIGNMENT	Sent on PAGCH.
7	MS->SS	RLC data block	Sent on the PDCH
8	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on PCCCH. On the new cell. Addressing the MS with TLLI.
9	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
10	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.

Specific message contents

None

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

42.4.2.2.2.1 Conformance requirement

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

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

42.4.2.2.2.2 Test Purpose

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

Reference

GSM 04.60, v. 6.4.0, Chapter 8.4.1

42.4.2.2.2.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

Foreseen final state of the MS

- MS is in idle mode

Test procedure

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PCCCH.
2	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
3	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order
5	MS->SS	PACKET CHANNEL REQUEST	To the new cell.
6	SS->MS	PACKET ACCESS REJECT	Received from the new cell
7	MS->SS	PACKET CHANNEL REQUEST	To the old cell. 'Single block without TBF establishment.'
8	SS->MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH.
9	MS ->SS	PACKET CELL CHANGE FAILURE	Single block. Error cause:" Packet Access Reject on target cell "

Specific message contents

PACKET CELL CHANGE FAILURE in step 9:

Packet Cell Change Failure message content: CAUSE	 0010

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

42.4.2.2.3.1 Conformance requirement

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

42.4.2.2.3.2 Test Purpose

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

Reference

GSM 04.60, v. 6.4.0, Chapter 8.4.2.

42.4.2.2.3.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

Foreseen final state of the MS

- MS is in idle mode

Test procedure

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PCCCH.
2	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
3	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
4	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains -BSIC + BCCH frequency -The network control order The frequency is not capable of using.
5	MS ->SS	PACKET CHANNEL REQUEST	'Single block without TBF establishment.'
6	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on PACCH.
7	MS->SS	PACKET CELL CHANGE FAILURE	Single block Error cause: "Frequency not implemented".

Specific message contents

PACKET CELL CHANGE FAILURE in step 7:

Packet Cell Change Failure message content: CAUSE	 0000

42.4.2.3 Cell change order procedure / Simultaneous uplink and downlink transfer

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

42.4.2.3.1.1 Conformance requirement

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

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

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

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

42.4.2.3.1.2 Test Purpose

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

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

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

Reference

GSM 04.60, v. 6.4.0, Chapters 5.5.1.1, 8.4 and 8.4.1

42.4.2.3.1.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

The way to trigger the MS initiating an uplink packet transfer.

Foreseen final state of the MS

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

Test procedure

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

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

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink packet transfer mode (fixed)}	MS is brought into uplink packet transfer mode. (Fixed allocation)
2	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PACCH.
3	MS->SS	RLC data blocks	MS sends data.
4	SS->MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
5	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
6	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
7	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains –BSIC + BCCH frequency -The network control order -USF
8	SS		Check that no more than six data blocks are transmitted from the MS on old channel.
9	MS->SS	PACKET CHANNEL REQUEST	Sent on the PRACH. To the new cell.
10	SS->MS	PACKET UPLINK ASSIGNMENT	Sent on the PCCCH.
11	MS->SS	RLC data block	MS sends data.
12	SS->MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
13	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH. On the new cell.
14	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
15	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
16	MS->SS	RLC data blocks	MS sends data.
17	SS->MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
18	SS->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains –BSIC + BCCH frequency -The network control order -USF IMMEDIATE_REL bit is not set. See specific message contents.
19	MS->SS	RLC data blocks	MS sends data.
20	SS->MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
21	SS		Steps 13 and 14 are optional and can be repeated, but not more than 5 seconds.
22	MS->SS	PACKET CHANNEL REQUEST	Sent on the PRACH. To the new cell.
23	SS->MS	PACKET UPLINK ASSIGNMENT	Sent on the PCCCH.
24	MS->SS	RLC data block	MS sends data.
25	SS->MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
26	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH. On the new cell.
27	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
28	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
29	MS->SS	RLC data blocks	MS sends data.
30	SS->MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Specific message contents

PACKET CELL CHANGE ORDER in Step 18:

Packet Cell Change Order message content: **IMMEDIATE_REL**	0 (Same procedure as for an autonomous cell reselection)

42.4.2.3.2 Cell change order procedure / Simultaneous uplink and downlink transfer / Failure case / T3174 expiry

42.4.2.3.2.1 Conformance requirement

If timer T3174 expires before a response to the PACKET CHANNEL REQUEST message has been received from the new cell, the mobile station shall start timer T3176 and return to the old cell. The mobile station shall send a PACKET CELL CHANGE FAILURE message to the network.

If the mobile station was in a simultaneous uplink and downlink packet transfer mode before the cell change, the mobile station shall establish a new uplink TBF and send the PACKET CELL CHANGE FAILURE message on this TBF. When the mobile station has sent a PACKET CELL CHANGE FAILURE message, timer T3176 shall be stopped. The mobile station shall then resume its uplink transfer on this TBF.

42.4.2.3.2.2 Test Purpose

To verify that the mobile station sends a PACKET CELL CHANGE FAILURE message to the network and returns to the old cell if timer T3174 expires before a response from the new cell.

Reference

GSM 04.60, v.6.4.0, Chapter 8.4.1.

42.4.2.3.2.3 Method of test

Initial conditions

System Simulator:

- 2 cells, GPRS supported

Mobile Station:

- MS is in Packet Idle mode and GPRS attached.
- PDP context established

Related PICS/PIXIT statement

Support of GPRS.

The way to trigger the MS initiating an uplink packet transfer.

Foreseen final state of the MS

- MS is in Idle mode

Test procedure

MS is brought into simultaneous uplink and downlink packet transfer mode. SS sends the PACKET CELL CHANGE ORDER message to the MS. MS sends several PACKET CHANNEL REQUESTs to the new cell, but the timer T3174 expires before a response to PACKET CHANNEL REQUEST message has been received from the new cell. MS returns to the old cell and sends a PACKET CELL CHANGE FAILURE message to the SS.

Maximum duration of the test

-

Expected sequence

Step	Direction	Message	Comments
1		{Uplink packet transfer mode (fixed)}	MS is brought into uplink packet transfer mode. (Fixed allocation)
2	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on the PACCH.
3	MS->SS	RLC data blocks	MS sends data.
4	SS->MS	PACKET UPLINK ACK/NACK	Sent on PACCH.
5	SS->MS	10 RLC data blocks	SS sends data, last block is polling.
6	MS->SS	PACKET DOWNLINK ACK/NACK	Sent on PACCH.
7	SS ->MS	PACKET CELL CHANGE ORDER	Sent on the PACCH. Contains –BSIC + BCCH frequency -The network control order
8	MS ->SS	PACKET CHANNEL REQUEST	To the new cell.
9	MS		MS sends PACKET CHANNEL REQUESTS until timer T3174 has expired.
10	MS ->SS	PACKET CHANNEL REQUEST	To the old cell.
11	SS -> MS	PACKET UPLINK ASSIGNMENT	Sent on the PACCH.
12	MS ->SS	PACKET CELL CHANGE FAILURE	Error cause:" No response on target cell "
13	MS->SS	RLC data blocks	MS sends data.
14	SS->MS	PACKET UPLINK ACK/NACK	Sent on PACCH.

Specific message contents

PACKET CELL CHANGE FAILURE in step 12:

Packet Cell Change Failure message content: CAUSE	0001

42.4.3 Macros and Default Message contents

42.4.3.1 Macros

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

42.4.3.1.1 Uplink packet transfer mode / Dynamic allocation

Step	Direction	Message	Comments
	MS $\rightarrow$ SS	{ Uplink packet transfer mode (dyn) }	Macro
1	MS $\rightarrow$ SS	PACKET CHANNEL REQUEST	Received on PRACH.
2	SS $\rightarrow$ MS	PACKET UPLINK ASSIGNMENT	Sent on PAGCH. (Dynamic allocation)

42.4.3.1.2 Uplink packet transfer mode / Fixed allocation

Step	Direction	Message	Comments
	MS → SS	{ Uplink packet transfer mode (fixed) }	Macro
1	MS → SS	PACKET CHANNEL REQUEST	Received on PRACH.
2	SS → MS	PACKET UPLINK ASSIGNMENT	Sent on PAGCH. (Fixed allocation)

42.4.3.2 Default Messages

42.4.3.2.1 PACKET CELL CHANGE ORDER message

MESSAGE_TYPE	0000 01
PAGE_MODE	00 Normal Paging
Referenced Address	
-	10 (address is TLLI)
- TLLI	ved from MS
IMMEDIATE_REL	1 (Immediate release of the on-going TBF.)
ARFCN	For GSM 900, 00 0001 0100 (ARFCN 20) For DCS 1800, 10 0100 1110 (ARFCN 590)
BSIC	For GSM 900, 001101 For DCS 1800, 001101
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	0 0 NC0
{ 0 | 1 < NC_NON_DRX_PERIOD < NC_REPORTING_PERIOD_I < NC_REPORTING_PERIOD_T }	0 No additional NC parameters
NC Frequency list struct	
{ 0 | 1 < NC_FREQUENCY_LIST }	0 No NC_FREQUENCY_LIST
< padding bits >	Spare Padding

42.4.3.2.2 PACKET CELL CHANGE FAILURE message

MESSAGE_TYPE	0000 00
TLLI	same as the value received from MS
ARFCN	For GSM 900, 00 0001 0100 (ARFCN 20) For DCS 1800, 10 0100 1110 (ARFCN 590)
BSIC	For GSM 900, 001101 For DCS 1800, 001101
CAUSE	0 0 0 1 No response on target cell
spare padding	Spare Padding

42.4.3.2.3 PACKET MEASUREMENT ORDER message

MESSAGE_TYPE	0000 11
PAGE_MODE	00 Normal Paging
TLLI	10 (address is TLLI)
-	Same as the value received from MS
PMO_INDEX	0 0 first message of two messages
PMO_COUNT	0 1 two messages expected
{ 0 | 1 < NC Measurement Parameters }	1 NC Measurement Parameters available
NC Measurement Parameters	
NETWORK_CONTROL_ORDER	0 1 NC1
{ 0 | 1 < NC_NON_DRX_PERIOD	1 Additional NC parameters available
< NC_REPORTING_PERIOD_I	NC_NON_DRX_PERIOD = 000
< NC_REPORTING_PERIOD_T }	(No non-DRX mode after a measurement report has been sent) NC_REPORTING_PERIOD_I = 111 (61.44 sec) NC_REPORTING_PERIOD_T = 011 (3.84 sec)
{ 0 | 1 < NC_FREQUENCY_LIST }	1 NC Frequency list struct available
NC Frequency list	
{ 0 | 1 { < NR_OF_REMOVED_FREQ	1 Frequencies have been removed
NR_OF_REMOVED_FREQ	00001
REMOVED_FREQ_INDEX	000000
{ 1 < List of added Frequency struct	
Add Frequency list	
START_FREQUENCY	00 0101 1000 (ARFCN 88)
BSIC	001101
{ 0 | 1 < Cell selection params	1 cell selection parameters available
Cell selection params	
EXC_ACC	0
CELL_BAR_ACCESS_2	0 normal reselection
SAME_RA_AS_SERVING_CELL	1 same RA as serving cell
{ 0 | 1 < GPRS_RXLEV_ACCESS_MIN }	1 GPRS_RXLEV_ACCESS_MIN present
GPRS_RXLEV_ACCESS_MIN	011111 -80dBm
GPRS_MS_TXPWR_MAX_CCH	10001 Mid level
{ 0 | 1 < GPRS_TEMPORARY_OFFSET }	1 GPRS_TEMPORARY_OFFSET present
GPRS_TEMPORARY_OFFSET	000
GPRS_PENALTY_TIME	0000
{ 0 | 1 < GPRS_RESELECT_OFFSET }	1 GPRS_RESELECT_OFFSET present
GPRS_RESELECT_OFFSET	10000 0dBm
{ 0 | 1 < HCS params }	1 HCS params present
GPRS_PRIORITY_CLASS	000
GPRS_HCS_THR	10100
{ 0 | 1 < SI13_PBCCH_LOCATION }	1 SI13_PBCCH_LOCATION present
{ 0 < SI13_LOCATION }	0
SI13_LOCATION	0 SI13 is sent on BCCH norm
NR_OF_FREQUENCIES	0001
FREQ_DIFF_LENGTH	010
FREQUENCY_DIFF	111 (ARFCN 95)
BSIC	001101
{ 0 | 1 < Cell selection params }	1 cell selection parameters available
Cell selection params	
EXC_ACC	0
CELL_BAR_ACCESS_2	0 Normal reselection
SAME_RA_AS_SERVING_CELL	0 Not RA as serving cell
{ 0 | 1 < GPRS_RXLEV_ACCESS_MIN }	0 GPRS_RXLEV_ACCESS_MIN not present
{ 0 | 1 < GPRS_TEMPORARY_OFFSET }	0 GPRS_TEMPORARY_OFFSET not present
{ 0 | 1 < GPRS_RESELECT_OFFSET }	0 GPRS_RESELECT_OFFSET not present
{ 0 | 1 < HCS params }	0 HCS params not present
{ 0 | 1 < SI13_PBCCH_LOCATION }	1 SI13_PBCCH_LOCATION present
{ 0 < SI13_LOCATION }	0
SI13_LOCATION	1 SI13 is sent on BCCH norm

} 0 < padding bits >	End of list Spare Padding

42.5 Downlink Transfer

42.5.1 Downlink Transfer / Normal Operation

42.5.1.1 Downlink Transfer/ Normal Operation / Relative Encoding TBF starting time

42.5.1.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.1.1.2 Conformance Requirement

The allocated radio resource is assigned to the mobile station in a PACKET DOWNLINK ASSIGNMENT message to the mobile station. The PACKET DOWNLINK ASSIGNMENT message is transmitted on an appropriate paging subchannel on PCCCH, considering the DRX parameters valid for each targeted mobile (see GSM 05.02). The multislot capabilities of the mobile station must be considered.

A PACKET DOWNLINK ASSIGNMENT message may indicate an assignment starting time in the TBF Starting Time parameter. The mobile station shall monitor PCCCH until the point in time denoted by the TBF Starting Time. Thereafter it shall switch to the assigned PDCHs. If while monitoring the PCCCH the mobile station receives more than one PACKET DOWNLINK ASSIGNMENT message, it shall act upon the most recently received message and shall ignore the previous message.

The Packet downlink assignment procedure is completed when the mobile station receives a valid RLC/MAC block. The mobile station has entered the packet transfer mode.

References

GSM 04.60, subclause 7.2.1.1, 7.2.1.2, 10.4.5

42.5.1.1.3 Test purpose

Verify that an MS switches to the assigned PDCH at the relative-encoded starting time.

42.5.1.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing a starting time with relative encoding.
2. Before the starting time, SS transmits a downlink RLC data block.
3. MS ignores the block.
4. At the starting time block, the MS receives a downlink RLC data block with polling indicated.
5. MS responds by sending a PACKET DOWNLINK ACK/NACK.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to wait until the starting time before monitoring the assigned PDCH.
2	SS -> MS	RLC DATA BLOCK	3 blocks before the starting time, with valid RRBP field, on assigned PDCH, addressed to MS.
3	SS		Verify the MS does not respond to the previous RLC block, and that the MS does not transmit on the PACCH of the assigned PDCH.
4	SS -> MS	RLC DATA BLOCK	At the starting time, with valid RRBP field.
5	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block sent at the starting time.
6	SS -> MS	RLC DATA BLOCKS	SS continues to transmit RLC data blocks according to allocation from step 1.
7	MS -> SS	PACKET UPLINK ACK/NACK	MS acknowledges on PACCH all blocks sent.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME - Starting Frame Number Description IE	1 - Relative frame number encoding: 0000000101101 – k=45: first frame of block is N+199 or N+200

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP S/P (MAC Header)	00 – Response shall be sent by MS in N+13 frames. 1 – RRBP field is valid

42.5.1.2 Downlink Transfer/ Normal Operation / Without TBF starting time

42.5.1.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.1.2.2 Conformance Requirement

The allocated radio resource is assigned to the mobile station in a PACKET DOWNLINK ASSIGNMENT message to the mobile station. The PACKET DOWNLINK ASSIGNMENT message is transmitted on an appropriate paging subchannel on PCCCH, considering the DRX parameters valid for each targeted mobile (see GSM 05.02). The multislot capabilities of the mobile station must be considered.

On receipt of a PACKET DOWNLINK ASSIGNMENT message, the mobile station shall switch to the assigned PDCHs.

The Packet downlink assignment procedure is completed when the mobile station receives a valid RLC/MAC block. The mobile station has entered the packet transfer mode.

If the MS is required to transmit a PACKET CONTROL ACKNOWLEDGEMENT subsequent to a PACKET DOWNLINK ASSIGNMENT, the MS shall be ready to receive on the new assignment no later than the next occurrence of block B((x+2) mod 12) where block B(x) is radio block containing the PACKET CONTROL ACKNOWLEDGEMENT.

References

GSM 04.60, subclause 7.2.1.1, 7.2.1.2, 10.4.5

GSM 5.10, subclause 6.11.1

42.5.1.2.3 Test purpose

Verify that an MS switches to the assigned PDCH when assigned to it without a starting time, within 3 blocks.

42.5.1.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.

2. SS transmits a downlink RLC data block.

3. MS responds by sending a PACKET DOWNLINK ACK/NACK.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to the assigned PDCH. (no starting time) With valid RRBP field
2	MS->SS	PACKET CONTROL ACK	Sent on PACCH in block specified by RRBP field in step 1.
3	SS -> MS	RLC DATA BLOCK	2 blocks after the previous message, with valid RRBP field, on assigned PDCH, addressed to MS.
4	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block sent at the starting time.
5	SS -> MS	RLC DATA BLOCKS	SS continues to transmit RLC data blocks according to assignment from step 1.
5	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH all blocks sent.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME	<IE not present>

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP S/P	00 – Response shall be sent by MS in N+13 frames. 1 – RRBP field is valid

42.5.2 Downlink Transfer / Polling

42.5.2.1 Downlink Transfer/ Polling/ Normal operation/RLC data block

42.5.2.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.2.1.2 Conformance Requirement

Whenever the mobile station receives an RLC data block addressed to itself and with a valid RRBP field in the RLC data block header (i.e., is polled), the mobile station shall transmit a PACKET DOWNLINK ACK/NACK message in the uplink radio block specified by the RRBP field whatever the BSN value of the received RLC data block, unless another RLC/MAC control message is waiting to be transmitted, in which case the other RLC/MAC control message shall be sent.

The RRBP value specifies a single uplink block in which the mobile station shall transmit either a PACKET CONTROL ACKNOWLEDGEMENT message or a PACCH block to the network. If the RRBP field is received as part of an RLC/MAC block containing an RLC/MAC control block containing any message except Packet Paging Request, Packet Access Reject, and Packet Queueing Notification, the mobile station shall transmit a PACKET CONTROL ACKNOWLEDGEMENT message in the uplink radio block specified. If the RRBP field is received as part of an RLC/MAC block containing an RLC/MAC control block containing a Packet Paging Request, Packet Access Reject, or Packet Queueing Notification message, the mobile station shall ignore this RRBP field. The mobile station shall only react on RLC/MAC control blocks containing a valid RRBP field if the mobile station is unambiguously addressed eitherin the downlink RLC/MAC control block header or in the control message itself.

References

GSM 04.60, subclause 8.1.2.2, 10.4.5

42.5.2.1.3 Test purpose

Verify that an MS responds to a poll with a PACKET DOWNLINK ACK/NACK message in the block specified by the RRBP field.

42.5.2.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits a downlink RLC data block.
3. MS responds by sending a PACKET DOWNLINK ACK/NACK in the block specified by the RRBP field of the RLC data block.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH.
2	SS -> MS	RLC DATA BLOCK	6 blocks after the previous message, with valid RRBP field, on assigned PDCH, addressed to MS.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the RLC DATA BLOCK 26 frames after step 2.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME	<IE not present>

DOWNLINK RLC DATA BLOCK in step 2:

RRBP S/P	11 – Response shall be sent by MS in N+26 frames. 1 – RRBP field is valid

42.5.2.2 Downlink Transfer/ Polling/ Packet Polling Request/ Access Burst format

42.5.2.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.2.2.2 Conformance Requirement

The network may send to the mobile station a PACKET POLLING REQUEST message. If the MS has received a PACKET DOWNLINK ASSIGNMENT message with no starting time or with a starting time that has already elapsed, the PACKET POLLING REQUEST message shall be sent on PACCH. Otherwise the PACKET POLLING message shall be sent on PAGCH. The mobile station shall be addressed by its TLLI or TFI.

On receipt of a PACKET POLLING REQUEST message, the mobile station shall respond to the network with the PACKET CONTROL ACKNOWLEDGEMENT message in the reserved uplink radio block specified by the RRBP field. The reserved block is considered as a one block PACCH allocation.

References

GSM 04.60, subclause 7.2.1.3

42.5.2.2.3 Test purpose

Verify that an MS responds to a PACKET POLLING REQUEST message (requesting access burst format) with a PACKET CONTROL ACKNOWLEDGEMENT message in access burst format.

42.5.2.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks.
3. SS transmits a PACKET POLLING REQUEST message, requesting access burst format.
4. MS responds by sending a PACKET CONTROL ACKNOWLEDGE message in access burst format.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH.
2	SS -> MS	RLC DATA BLOCKS	Starting 6 blocks after the previous message, on assigned PDCH, addressed to MS.
3	SS -> MS	PACKET POLLING REQUEST	Requesting access burst format
4	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	MS acknowledges using 11-bit access burst format.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME	<IE not present>

PACKET POLLING REQUEST in step 3:

TYPE_OF_ACK	0 – MS response sent as 4 access bursts
Global TFI (downlink)	Addressing MS

PACKET CONTROL ACKNOWLEDGMENT access bursts in step 4:

MESSAGE_TYPE	1111 1100 1
CTRL_ACK	01

42.5.2.3 Downlink Transfer/ Polling/ Packet Polling Request/ Control block format

42.5.2.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.2.3.2 Conformance Requirement

The network may send to the mobile station a PACKET POLLING REQUEST message. If the MS has received a PACKET DOWNLINK ASSIGNMENT message with no starting time or with a starting time that has already elapsed, the PACKET POLLING REQUEST message shall be sent on PACCH. Otherwise the PACKET POLLING message shall be sent on PAGCH. The mobile station shall be addressed by its TLLI or TFI.

On receipt of a PACKET POLLING REQUEST message, the mobile station shall respond to the network with the PACKET CONTROL ACKNOWLEDGEMENT message in the reserved uplink radio block specified by the RRBP field. The reserved block is considered as a one block PACCH allocation.

References

GSM 04.60, subclause 7.2.1.3

42.5.2.3.3 Test purpose

Verify that an MS responds to a PACKET POLLING REQUEST message (requesting control block format) with a PACKET CONTROL ACKNOWLEDGEMENT message in control block format, in the uplink block specified by the RRBP field.

42.5.2.3.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks.
3. SS transmits a PACKET POLLING REQUEST message, requesting control block format.
4. MS responds by sending a PACKET CONTROL ACKNOWLEDGE message in control block format.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH.
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS.
3	SS -> MS	PACKET POLLING REQUEST	Requesting control block format; RRBP field specifies N+21 (or N+22 frames)
4	MS -> SS	PACKET CONTROL ACKNOWLEDGEMENT	MS acknowledges in the uplink block N+21 (or N+22 frames)

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME	<IE not present>

PACKET POLLING REQUEST in step 3:

RRBP S/P TYPE_OF_ACK TFI	10 – MS response sent in N+21 or N+22 frames 1 – RRBP field is valid 1 – MS response sent in RLC/MAC control block Addressing MS

PACKET CONTROL ACKNOWLEDGMENT in step 4:

TLLI (32) CTRL_ACK	<of this MS> 11

42.5.3 Downlink Transfer / T3190 Expiry / Initial allocation

42.5.3.1 Downlink Transfer/ T3190 Expiry / Initial allocation / Restart with valid RLC data block

42.5.3.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.3.1.2 Conformance Requirement

When receiving the PACKET DOWNLINK ASSIGNMENT message and after waiting the TBF Starting Time when applicable, the mobile station starts timer T3190. The timer is reset when receiving the first valid RLC/MAC block.

On expiry of timer T3190, the mobile station shall abort the procedure and return to packet idle mode.

If the mobile station receives a valid RLC data block addressed to itself, the mobile station shall reset and restart timer T3190. If timer T3190 expires, the mobile station shall perform an abnormal release with return to CCCH or PCCCH (see subclause 8.7.1).

References

GSM 04.60, subclause 7.2.1.1, 8.1.2.1, 10.4.5

42.5.3.1.3 Test purpose

Verify that an MS starts T3190 when receiving the PACKET DOWNLINK ASSIGNMENT, resets and restarts the timer when a valid RLC/MAC block is received, and returns to packet idle mode when T3190 expires.

42.5.3.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing relative-encoded starting time.
2. (0.8*T3190) seconds after the starting time occurs, the SS transmits a downlink RLC data block with polling indicated.
3. MS sends PACKET DOWNLINK ACK/NACK on PACCH in response to the RLC data block.
4. (1.2*T3190) seconds after the previous downlink RLC data block, the SS transmits another downlink RLC data block with polling indicated.
5. The MS ignores the downlink block (because it has already returned to packet idle mode upon expiry of T3190).

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to the assigned PDCH and start T3190 at the starting time indicated.
2	SS -> MS	RLC DATA BLOCK	Sent on assigned PDCH, (T3190*0.8) seconds after step 1, with valid RRBP field, addressed to MS.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previous RLC data block, and restarts T3190.
4	SS -> MS	RLC DATA BLOCK	Sent on assigned PDCH, (T3190*1.2) seconds after step 2, with valid RRBP field, addressed to MS.
5	SS		Verify the MS does not respond to the previous RLC block, and that the MS does not transmit on the PACCH of the assigned PDCH.
6	SS->MS	PACKET DOWNLINK ASSIGNMENT	Sent on assigned packet paging channel. This is to verify the MS is in packet idle mode.
7	SS->MS	RLC DATA BLOCK	Sent on assigned PDCH, (T3190*0.8) seconds after step 6, with valid RRBP field, addressed to MS.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previous RLC data block.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME - Starting Frame Number Description IE	1 - Relative frame number encoding: 0000000101101 – k=45: first frame of block is N+199 or N+200

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP S/P	00 – Response shall be sent by MS in N+13 frames. 1 – RRBP field is valid

42.5.4 Downlink Transfer / T3190 Expiry / Resource reallocation

42.5.4.1 Downlink Transfer/ T3190 Expiry / Resource reallocation / Without TBF starting time

42.5.4.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.4.1.2 Conformance Requirement

On receipt of a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message, and after the TBF starting time, if present, the mobile station shall switch to the assigned PDCHs.Upon switching to the new PDCHs the mobile station shall restart timer T3190.

When the mobile station receives an RLC/MAC block addressed to itself on any of the new assigned resources it shall restart timer T3190. If timer T3190 expires, the mobile station shall perform an abnormal release with return to CCCH or PCCCH (see subclause 8.7.1).

References

GSM 04.60, subclause 8.1.2.4

42.5.4.1.3 Test purpose

Verify that an MS switches to the newly assigned PDCH when no starting time is present, and release the PDCH when T3190 expires.

42.5.4.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits a downlink RLC data block.
3. MS responds by sending a PACKET DOWNLINK ACK/NACK.
4. SS transmits another PACKET DOWNLINK ASSIGNMENT message on PACCH, containing no starting time.
5. (T3190 * 1.2) seconds later, SS transmits a downlink RLC data block on the newly assigned resources.
6. MS ignores the downlink block (because it has already returned to packet idle mode because T3190 expired).

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to PDCH0. (no starting time)
2	SS -> MS	RLC DATA BLOCK	6 blocks after the previous message, with valid RRBP field, on assigned PDCH0, addressed to MS.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block sent at the starting time.
4	SS -> MS	RLC DATA BLOCKS	SS continues to transmit RLC data blocks according to allocation from step 1.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to PDCH1. (no starting time)
6	SS -> MS	RLC DATA BLOCK	(T3190 * 1.2) seconds after the previous message, with valid RRBP field, on PDCH1, addressed to MS.
7	SS		Verify the MS does not transmit on the PACCH of PDCH1.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned – PDCH0>
TBF STARTING TIME	<IE not present>

PACKET DOWNLINK ASSIGNMENT message in step 5:

TIMESLOT_ALLOCATION	<one timeslot assigned – PDCH1>
TBF STARTING TIME	<IE not present>

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP	00 – Response shall be sent by MS in N+13 frames.
S/P	1 – RRBP field is valid

42.5.4.2 Downlink Transfer/ T3190 Expiry / Resource reallocation / With TBF starting time

42.5.4.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.4.2.2 Conformance Requirement

On receipt of a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message, and after the TBF starting time, if present, the mobile station shall switch to the assigned PDCHs.Upon switching to the new PDCHs the mobile station shall restart timer T3190.

When the mobile station receives an RLC/MAC block addressed to itself on any of the new assigned resources it shall restart timer T3190. If timer T3190 expires, the mobile station shall perform an abnormal release with return to CCCH or PCCCH (see subclause 8.7.1).

References

GSM 04.60, subclause 8.1.2.4

42.5.4.2.3 Test purpose

Verify that an MS switches to the newly assigned PDCH at the starting time given, and returns to packet idle mode when T3190 expires.

42.5.4.2.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits a downlink RLC data block.
3. MS responds by sending a PACKET DOWNLINK ACK/NACK.
4. SS transmits another PACKET DOWNLINK ASSIGNMENT message on PACCH, containing a starting time.
5. (T3190 * 1.2) seconds later, SS transmits a downlink RLC data block on the newly assigned resources.
6. MS ignores the downlink block (because it has already returned to packet idle mode because T3190 expired).

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to PDCH0. (no starting time)
2	SS -> MS	RLC DATA BLOCK	6 blocks after the previous message, with valid RRBP field, on assigned PDCH0, addressed to MS.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block sent at the starting time.
4	SS -> MS	RLC DATA BLOCKS	SS continues to transmit RLC data blocks according to allocation from step 1.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to PDCH1 at the given starting time.
6	SS -> MS	RLC DATA BLOCK	(T3190 * 1.2)seconds after the starting time in the previous message, with valid RRBP field, on PDCH1, addressed to MS.
7	SS		Verify the MS does not transmit on the PACCH of PDCH1.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned – PDCH0>
TBF STARTING TIME	<IE not present>

PACKET DOWNLINK ASSIGNMENT message in step 5:

TIMESLOT_ALLOCATION	<one timeslot assigned – PDCH1>
TBF STARTING TIME - Starting Frame Number Description IE	1 - Relative frame number encoding: 0000000101101 – k=45: first frame of block is N+199 or N+200

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP S/P	00 – Response shall be sent by MS in N+13 frames. 1 – RRBP field is valid

42.5.4.3 Downlink Transfer/ T3190 Expiry / Resource reallocation / Restart with valid RLC data block

42.5.4.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.4.3.2 Conformance Requirement

On receipt of a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message, and after the TBF starting time, if present, the mobile station shall switch to the assigned PDCHs.Upon switching to the new PDCHs the mobile station shall restart timer T3190.

When the mobile station receives an RLC/MAC block addressed to itself on any of the new assigned resources it shall restart timer T3190. If timer T3190 expires, the mobile station shall perform an abnormal release with return to CCCH or PCCCH (see subclause 8.7.1).

References

GSM 04.60, subclause 8.1.2.4

42.5.4.3.3 Test purpose

Verify that an MS switches to the newly assigned PDCH at the starting time given, and returns to packet idle mode when T3190 expires.

42.5.4.3.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits a downlink RLC data block.
3. MS responds by sending a PACKET DOWNLINK ACK/NACK.
4. SS transmits another PACKET DOWNLINK ASSIGNMENT message on PACCH, containing a starting time.
5. (T3190 * 0.8) seconds later, SS transmits a downlink RLC data block on the newly assigned resources.
6. MS responds by sending a PACKET DOWNLINK ACK/NACK.
7. (T3190 * 1.2) seconds later, SS transmits a downlink RLC data block (using the same resources).
8. MS ignores the downlink block (because it has already returned to packet idle mode because T3190 expired).

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to PDCH0. (no starting time)
2	SS -> MS	RLC DATA BLOCK	3 blocks after the previous message, with valid RRBP field, on assigned PDCH0, addressed to MS.
3	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block.
4	SS -> MS	RLC DATA BLOCKS	SS continues to transmit RLC data blocks according to allocation from step 1.
5	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to PDCH1 at the given starting time.
6	SS -> MS	RLC DATA BLOCK	(T3190 * 0.8) seconds after the starting time in the previous message, with valid RRBP field, on PDCH1, addressed to MS.
7	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges on PACCH the RLC data block.
8	SS -> MS	RLC DATA BLOCK	(T3190 * 1.2) seconds after the starting time in the previous message, with valid RRBP field, on PDCH1, addressed to MS.
9	SS		Verify the MS does not transmit on the PACCH of PDCH1.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned – PDCH0>
TBF STARTING TIME	<IE not present>

PACKET DOWNLINK ASSIGNMENT message in step 5:

TIMESLOT_ALLOCATION	<one timeslot assigned – PDCH1>
TBF STARTING TIME - Starting Frame Number Description IE	1 – Relative frame number encoding: 0000000101101 – k=45: first frame of block is N+199 or N+200

DOWNLINK RLC DATA BLOCKS (various steps):

RRBP S/P	00 – Response shall be sent by MS in N+13 frames. 1 – RRBP field is valid

42.5.5 Downlink Transfer / Reestablishment

42.5.5.1 Downlink Transfer/ Reestablishment/ T3192 Expiry

42.5.5.1.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.5.1.2 Conformance Requirement

After the network has initiated the release of a downlink TBF and the mobile station has received all the RLC blocks, the mobile station shall send the PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to ‘1’, start timer T3192 and continue to monitor all assigned PDCHs.

If the network receives a PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to ‘1’ and has new data to transmit for the mobile station, the network may establish a new downlink TBF for the mobile station by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message with the Control Ack bit set to ‘1’ on PACCH.

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

When timer T3192 expires the mobile station shall 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, if there is no ongoing uplink TBF the mobile station shall enter packet idle mode. Upon entering packet idle mode, the mobile shall apply DRX mode procedures as specified in subclause 5.5.1.4.

References

GSM 04.60, subclause 8.1.2.4, 9.3.3.5

42.5.5.1.3 Test purpose

Verify that after a downlink TBF is released, MS returns to packet idle mode when T3192 expires.

42.5.5.1.4 Method of test

Initial Conditions

System Simulator:

1 cell, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation.
3. SS transmits a downlink RLC data block, with valid RRBP field (polling), with Final Block indicator set to 1.
4. MS responds by sending a PACKET DOWNLINK ACK/NACK with Final Ack indicator set to 1 and starting T3192.
5. When T3192 expires, MS returns to packet idle mode.
6. SS transmits a downlink RLC data block (using previous resources).

7. MS ignores this block, because it has returned to packet idle mode.
8. SS transmits a PACKET DOWNLINK ASSIGNMENT, followed by RLC data blocks for the downlink allocation.
9. MS responds with a PACKET DOWNLINK ACK/NACK.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS.
3	SS -> MS	RLC DATA BLOCK	With valid RRBP field, addressed to MS, with Final Block indication set to 1.
4	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks, with final ack set to 1. MS starts T3192
5	SS		Wait T3192 * 0.7 seconds
6			Repeat steps 3 and 4.
7	SS		Wait T3192 * 1.2 seconds.
8	SS -> MS	RLC DATA BLOCK	On previously assigned PDCH. With valid RRBP field, addressed to MS.
9	SS		Verify no response from MS on previously assigned PDCH.
10	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH (no starting time)
11	SS -> MS	RLC DATA BLOCK	With valid RRBP field, addressed to MS, on new resources assigned in step 10.
12	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data block.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME	<IE not present>

PACKET DOWNLINK ASSIGNMENT message in step 8:

TIMESLOT_ALLOCATION	<one timeslot assigned – different than previous>
TBF STARTING TIME	<IE not present>

GPRS Cell Options IE (throughout, on sys-infos):

T3192	101 – (5+1)*500ms = 3 second timeout value

DOWNLINK RLC DATA BLOCK in step 3:

RRBP S/P FBI	00 – Response shall be sent by MS in N+13 frames. 1 – RRBP field is valid 1

PACKET DOWNLINK ACK/NACK in step 4:

Ack/Nack Description IE - FINAL_ACK_INDICATION	 1

42.5.5.2 Downlink Transfer/ Reestablishment/ Packet Downlink Assignment

42.5.5.2.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.5.2.2 Conformance Requirement

After the network has initiated the release of a downlink TBF and the mobile station has received all the RLC blocks, the mobile station shall send the PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to ‘1’, start timer T3192 and continue to monitor all assigned PDCHs.

If the network receives a PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to ‘1’ and has new data to transmit for the mobile station, the network may establish a new downlink TBF for the mobile station by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message with the Control Ack bit set to ‘1’ on PACCH.

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

References

GSM 04.60, subclause 8.1.2.4

42.5.5.2.3 Test purpose

Verify that after a downlink TBF is released, MS acts on a PACKET DOWNLINK ASSIGNMENT message.

42.5.5.2.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation.
3. SS transmits a downlink RLC data block, with valid RRBP field (polling), with Final Block indicator set to 1.
4. MS responds by sending a PACKET DOWNLINK ACK/NACK with Final Ack indicator set to 1.
5. SS transmits a PACKET DOWNLINK ASSIGNMENT, assigning a new PDCH.
6. SS transmits a downlink RLC data block on newly assigned PDCH, with valid RRBP field.
7. MS responds by sending a PACKET DOWNLINK ACK/NACK.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS.
3	SS -> MS	RLC DATA BLOCK	With valid RRBP field, addressed to MS, with Final Block indication set to 1.
4	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks, with final ack set to 1.
5	SS		Wait (T3192 * 0.8) seconds
6	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH. Triggers the MS to switch to a new PDCH. (no starting time)
7	SS -> MS	RLC DATA BLOCK	6 blocks after step 6, on PDCH assigned in step 6. With valid RRBP field, addressed to MS.
8	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME	<IE not present>

PACKET DOWNLINK ASSIGNMENT message in step 6:

TIMESLOT_ALLOCATION	<one timeslot assigned – different than previous assignment>
TBF STARTING TIME	<IE not present>

GPRS Cell Options IE (throughout, on sys-infos):

T3192	101 – (5+1)*500ms = 3 second timeout value

DOWNLINK RLC DATA BLOCK in step 3:

RRBP	00 – Response shall be sent by MS in N+13 frames.
S/P	1 – RRBP field is valid
FBI	1

PACKET DOWNLINK ACK/NACK in step 4:

Ack/Nack Description IE - FINAL_ACK_INDICATION	1

42.5.5.3 Downlink Transfer/ Reestablishment/ Invalid Frequency Parameters IE

42.5.5.3.1 Definition and applicability

This test case applies to all MSs supporting GPRS.

42.5.5.3.2 Conformance Requirement

After the network has initiated the release of a downlink TBF and the mobile station has received all the RLC blocks, the mobile station shall send the PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to ‘1’, start timer T3192 and continue to monitor all assigned PDCHs.

If the network receives a PACKET DOWNLINK ACK/NACK message with the Final Ack Indicator bit set to ‘1’ and has new data to transmit for the mobile station, the network may establish a new downlink TBF for the mobile station by sending the PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message with the Control Ack bit set to ‘1’ on PACCH.

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

- If a mobile station receives a PACKET DOWNLINK ASSIGNMENT or PACKET TIMESLOT RECONFIGURE message and detects an invalid Frequency Parameters information element in the message, it shall perform an abnormal release. If PCCCH is present in the cell the mobile station shall perform an abnormal release with system information (see subclause 8.7.3). If PCCCH is not present, the mobile station shall perform an abnormal release with random access (see subclause 8.7.2).

References

GSM 04.60, subclause 8.1.2.4, 8.1.2.4.1

42.5.5.3.3 Test purpose

Verify that after a downlink TBF is released, MS returns to packet idle mode if a PACKET DOWNLINK ASSIGNMENT with invalid frequency parameters IE is received.

42.5.5.3.4 Method of test

Initial Conditions

System Simulator:

2 cells, GPRS supported, PCCCH present

Mobile Station:

The MS is in the state "idle, GMM-registered" with a P-TMSI allocated, SPLIT PG CYCLE negotiated, and PDP context 3 activated.

Related PICS/PIXIT Statement(s)

Support GPRS service

Test Procedure

1. MS receives a PACKET DOWNLINK ASSIGNMENT message on its assigned PCCCH, containing no starting time.
2. SS transmits downlink RLC data blocks for the downlink allocation.
3. SS transmits a downlink RLC data block, with valid RRBP field (polling), with Final Ack indicator set to 1.
4. MS responds by sending a PACKET DOWNLINK ACK/NACK.
5. SS transmits a PACKET DOWNLINK ASSIGNMENT, assigning a new PDCH, but with invalid frequency parameters.
6. SS transmits a downlink RLC data block on previously assigned PDCH, with valid RRBP field.
7. MS ignores the block because it has returned to packet idle mode.

Maximum Duration of Test

5 min.

Expected Sequence

Step	Direction	Message	Comments
1	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Triggers the MS to switch to assigned PDCH. (no starting time)
2	SS -> MS	RLC DATA BLOCKS	Starting 3 blocks after the previous message, on assigned PDCH, addressed to MS.
3	SS -> MS	RLC DATA BLOCK	With valid RRBP field, addressed to MS, with Final Block indication set to 1.
4	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data blocks.
5	SS		Wait 2 seconds
6	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent on PACCH. Triggers the MS to switch to a new PDCH. (no starting time) Invalid frequency in message.
7	SS -> MS	RLC DATA BLOCK	On PDCH assigned in step 1. With valid RRBP field, addressed to MS.
7a	SS		Change the PSI2_CHANGE_MARK and the Reference Frequency List in PSI2.
8	SS		Verify MS does not transmit on previously assigned PDCH.
9	SS -> MS	PACKET DOWNLINK ASSIGNMENT	Sent 10 seconds after step 7. These steps verify the MS has re-read the sys-infos, and is using the new PSI2 parameters.
10	SS -> MS	RLC DATA BLOCK	With valid RRBP field, addressed to MS.
11	MS -> SS	PACKET DOWNLINK ACK/NACK	MS acknowledges the previously received RLC data block.

Specific Message Contents

PACKET DOWNLINK ASSIGNMENT message in step 1 and step 9:

TIMESLOT_ALLOCATION	<one timeslot assigned>
TBF STARTING TIME	<IE not present>

PACKET DOWNLINK ASSIGNMENT message in step 6:

TIMESLOT_ALLOCATION	<one timeslot assigned – different than previous assignment>
TBF STARTING TIME	<IE not present>
Frequency Parameters IE -	00 – ARFCN
ARFCN	300 (invalid)

GPRS Cell Options IE (throughout, on sys-infos):

T3192	101 – (5+1)*500ms = 3 second timeout value

DOWNLINK RLC DATA BLOCK in step 3:

RRBP S/P FBI	00 – Response shall be sent by MS in N+13 frames. 1 – RRBP field is valid 1

PACKET DOWNLINK ACK/NACK in step 4:

Ack/Nack Description IE - FINAL_ACK_INDICATION	 1