

Source: TSG CN WG 1
Title: CRs to R99 and older releases on Work Item GPRS
Agenda item: 7.13
Document for: APPROVAL

Introduction:

This document contains **23** CRs on **R99 and older releases** Work Item "GPRS", that have been agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #10 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
24.008	271	1	N1-001380	R99	APN used for detection of duplicated PDP context	F	3.5.0
24.008	314		N1-001391	Rel-4	APN used for detection of duplicated PDP context	A	4.0.0
24.008	307	2	N1-001387	R99	Clarification of RAB re-establishment	F	3.5.0
24.008	313		N1-001390	Rel-4	Clarification of RAB re-establishment	A	4.0.0
24.008	306	1	N1-001368	R99	Clarification of response handling of Service	F	3.5.0
24.008	312		N1-001389	Rel-4	Clarification of response handling of Service	A	4.0.0
24.008	267		N1-001203	R99	Clarification to the network initiated GPRS detach	F	3.5.0
24.008	268		N1-001204	Rel-4	Clarification to the network initiated GPRS detach	A	4.0.0
04.64	A145		N1-001195	R99	Correction in TOM protocol header	F	8.5.0
04.64	A146		N1-001197	R97	Correction of IOV-UI negotiation	F	6.7.0
04.64	A147		N1-001198	R98	Correction of IOV-UI negotiation	A	7.3.0
04.64	A148		N1-001199	R99	Correction of IOV-UI negotiation	A	8.5.0
24.008	309	1	N1-001381	R99	Correction of PDP context duplication handling	F	3.5.0
24.008	319		N1-001397	Rel-4	Correction of PDP context duplication handling	A	4.0.0
04.08	A105		N1-001230	R97	Correction of update status on Authentication	F	6.12.1
04.08	A105		N1-001231	R98	Correction of update status on Authentication	A	7.9.1
24.008	277		N1-001232	R99	Correction of update status on Authentication	A	3.5.0
24.008	278		N1-001233	Rel-4	Correction of update status on Authentication	A	4.0.0
24.008	320		N1-001398	R99	DRX parameter range correction	F	3.5.0
24.008	321		N1-001399	Rel-4	DRX parameter range correction	A	4.0.0
24.007	025	1	N1-001367	R99	RABMAS-SAP and RABMSM-SAP adaptation	F	3.5.0
24.008	269	2	N1-001406	R99	Unsynchronized PDP contexts handling - MS less	F	3.5.0
24.008	315	1	N1-001417	Rel-4	Unsynchronized PDP contexts handling - MS less	A	4.0.0

CR-Form-v3

CHANGE REQUEST

⌘ **04.64 CR A145** ⌘ rev **-** ⌘ Current version: **8.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction in TOM protocol header		
Source:	⌘ Motorola		
Work item code:	⌘ GPRS	Date:	⌘ Sep. 26, 2000
Category:	⌘ F	Release:	⌘ R99
Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)	
Detailed explanations of the above categories can be found in 3GPP TR 21.900.			

Reason for change:	⌘ Fig. B.1 is not consistent with sections B.1.1, B.1.2.
Summary of change:	⌘ Fig. B.1 is revised.
Consequences if not approved:	⌘

Clauses affected:	⌘ B.1		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘		

B.1 TOM Protocol Envelope structure

All TOM protocol peer-to-peer exchanges shall be in TOM Protocol Envelopes conforming to the format shown in Figure B.1. The TOM Protocol Header shall consist of the TOM Protocol Discriminator, Remaining Length of TOM Protocol Header, and Remaining Octets of TOM Protocol Header fields, and is a minimum of 1 octet and a maximum of 15 octets long.

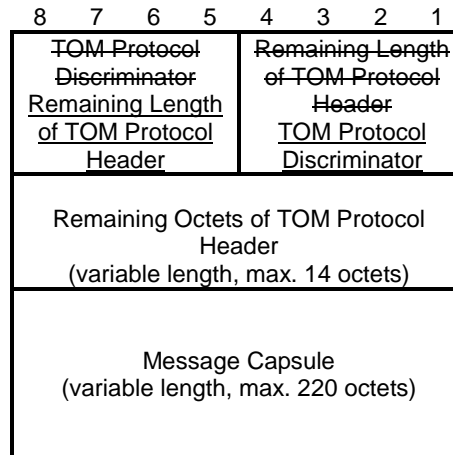


Figure B.1: TOM Protocol Envelope format

B.1.1 TOM Protocol Discriminator

TOM Protocol Discriminator indicates the specific technology using TOM, and is coded as follows:

bits	4	3	2	1	
	0	0	0	0	Not specified
	0	0	0	1	TIA/EIA-136 [22]
	1	1	1	1	Reserved for extension

All other values are reserved

If any other value than 0 0 0 1 is received, then the TOM Protocol Envelope shall be discarded with no further action.

B.1.2 Remaining Length of TOM Protocol Header

Remaining Length of TOM Protocol Header indicates the number of octets remaining in the TOM-protocol-header part of the TOM Protocol Envelope, and is coded as follows:

bits	8	7	6	5	
	0	0	0	0	0 octets remaining in TOM protocol header
	0	0	0	1	1 octet remaining in TOM protocol header

	1	1	1	0	14 octets remaining in TOM protocol header
	1	1	1	1	Reserved for extension

If the value 1 1 1 1 is received, then the TOM Protocol Envelope shall be discarded with no further action.

CHANGE REQUEST

⌘ **04.64 CR A146** ⌘ rev **-** ⌘ Current version: **6.7.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘	Correction of IOV-UI negotiation	
Source:	⌘	Motorola	
Work item code:	⌘	GPRS	Date: ⌘ Sep. 26, 2000
Category:	⌘	F	Release: ⌘ R97
		<p><i>Use <u>one</u> of the following categories:</i></p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p><i>Use <u>one</u> of the following releases:</i></p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>

Reason for change:	⌘	The current version of 04.64 does not permit the negotiation of IOV-UI parameter after ciphering is enabled. However, according to the discussion in document N1-01196, IOV-UI negotiation must be permitted after ciphering has been enabled. Otherwise, the two LLC peers will never manage to negotiate a new IOV-UI value and will always use the default IOV-UI.
Summary of change:	⌘	<p>The CR proposes to remove the condition stating that the IOV-UI negotiation is allowed only before ciphering is enabled.</p> <p>In addition, the CR eliminates the need to specify the (missing) exception case where an attempt is made to negotiate IOV-UI after ciphering is enabled.</p>
Consequences if not approved:	⌘	

Clauses affected:	⌘	6.4.1.6	
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘
		<input type="checkbox"/> Test specifications	
		<input type="checkbox"/> O&M Specifications	
Other comments:	⌘	Related to Tdoc N1-01196	

6.4.1.6 Exchange Identification (XID) command/response

This frame shall be used to negotiate and re-negotiate LLC layer parameters and layer-3 parameters. XID frames can be transmitted in ADM and ABM.

The negotiation procedure is one-step, i.e., one side shall start the process by sending an XID command, offering a certain set of parameters from the applicable parameter repertoire (see Table 1) the sending entity wants to negotiate, proposing values within the allowed range. In return, the other side shall send an XID response, either confirming these parameter values by returning the requested values, or offering higher or lower ones in their place. As an optimisation, parameters confirming the requested values may be omitted from the XID response. See Table 1 for sense of negotiation. This shall end the negotiation process.

Parameters that are not included in neither the XID command nor in the XID response, shall retain their current values.

The responding side may respond with parameters that were not included in the XID command. A parameter that was not included in the XID command shall in this case be treated as if the current value of the parameter was included in the XID command. The responding side shall include such a parameter in every XID response until the parameter has been explicitly negotiated, either by responding to an XID command that included the parameter, or by explicitly including the parameter the next time an XID command is transmitted.

Both entities shall support the negotiated values, however under certain conditions one or more parameters may need to be re-negotiated (e.g., in the case of a change in SGSN).

XID frames shall always be used with the P/F bit set to 1.

Without any prior XID exchange, default values shall apply.

Negotiated XID parameters shall apply to the LLE identified by the DLCI of the XID frames used, except Version, Reset, and IOV-UI that applies to an LLME (i.e., a TLLI), and except Layer-3 Parameters that apply to the layer 3 above the LLE.

Table 1 lists the negotiable LLC layer parameters. Figure 1 shows the format of the XID parameter field.

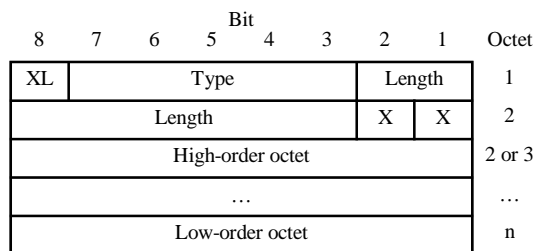


Figure 1: XID parameter field format

A parameter item consists of one or two type/length octets followed by the value of that parameter. The XID Length (XL) bit indicates whether the Length field is 2 bits or 8 bits long. If XL is set to 0, then Length consists of 2 bits and type/length occupies one octet. If XL is set to 1 then Length consists of 8 bits and type/length occupies two octets. The length indicator gives the number of octets that the value actually occupies. Length shall be set to the value in Table 1 for XID parameters that do not have a variable length. The parameter items can be arranged in arbitrary order. The parameter items shall begin in the first octet of the XID information field and follow on contiguously.

Table 1: LLC layer parameter negotiation

Parameter Name	Type	Length	Format (87654321)	Range	Units	Sense of Negotiation
Version (LLC version number)	0	1	0000bbbb	0 through 15	-	down
IOV-UI (ciphering Input offset value for UI frames), common for all SAPIs of a TLLI	1	4	bbbbbbbb bbbbbbbb bbbbbbbb bbbbbbbb	0 through $2^{32} - 1$	-	-
IOV-I (ciphering Input offset value for I frames), for the SAPI under negotiation	2	4	bbbbbbbb bbbbbbbb bbbbbbbb bbbbbbbb	0 through $2^{32} - 1$	-	-
T200 (retransmission time-out)	3	2	0000bbbb bbbbbbbb	1 through 4 095	0.1 seconds	up
N200 (maximum number of retransmissions)	4	1	0000bbbb	1 through 15	-	up
N201-U (maximum information field length for U and UI frames)	5	2	00000bbb bbbbbbbb	140 through 1 520	octets	down
N201-I (maximum information field length for I frames)	6	2	00000bbb bbbbbbbb	140 through 1 520	octets	down
mD (I frame buffer size in the downlink direction)	7	2	0bbbbbbb bbbbbbbb	0, 9 through 24 320	16 octets	down
mU (I frame buffer size in the uplink direction)	8	2	0bbbbbbb bbbbbbbb	0, 9 through 24 320	16 octets	down
kD (window size in the downlink direction)	9	1	bbbbbbbb	1 through 255	frames	down
kU (window size in the uplink direction)	10	1	bbbbbbbb	1 through 255	frames	down
Layer-3 Parameters	11	Variable	See GSM 04.65			
Reset	12	0	-	-	-	-
<ul style="list-style-type: none"> - The Range for N201-U for SAPI 1 is 400 through 1 520 octets, and for SAPI 7 270 through 1 520 octets. - All other Types and Ranges are reserved for future versions of the present document. - The length for Layer-3 Parameters shall be set equal to the number of octets received from layer 3. If an empty XID block is received from layer 3, the LLE shall include a zero-length Layer-3 Parameters XID parameter in the XID parameter field to allow the receiving LLE to distinguish between LLC and layer-3 initiated procedures. 						

Version shall not be negotiated while in ABM.

Reset shall only be negotiated with an XID frame, and only be transmitted in the downlink direction. If Reset is present in an XID frame, then it shall be the first XID parameter in the XID information field.

IOV-UI shall only be negotiated in ADM, and only before ciphering is enabled. IOV-I shall only be negotiated with SABM and UA frames. IOV-UI and IOV-I shall only be transmitted in the downlink direction.

T200, N200, and N201-U can be negotiated in ADM and ABM. The new values of T200 shall only apply to timers set after the negotiation has been completed. If N201-U is negotiated to a lower value than previously used, then any queued or new U and UI frames that violates the new value of N201-U should be discarded and not transmitted.

N201-I, mD, mU, kD, and kU can be negotiated to any value in Range in ADM. In ABM, N201-I, mD, mU, kD, and kU can only be negotiated to the same or higher value as previously used.

CHANGE REQUEST

⌘ **04.64 CR A147** ⌘ rev **-** ⌘ Current version: **7.3.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘	Correction of IOV-UI negotiation	
Source:	⌘	Motorola	
Work item code:	⌘	GPRS	Date: ⌘ Sep. 26, 2000
Category:	⌘	A	Release: ⌘ R98
		<p><i>Use <u>one</u> of the following categories:</i></p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p><i>Use <u>one</u> of the following releases:</i></p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>

Reason for change:	⌘	The current version of 04.64 does not permit the negotiation of IOV-UI parameter after ciphering is enabled. However, according to the discussion in document N1-01196, IOV-UI negotiation must be permitted after ciphering has been enabled. Otherwise, the two LLC peers will never manage to negotiate a new IOV-UI value and will always use the default IOV-UI.
Summary of change:	⌘	<p>The CR proposes to remove the condition stating that the IOV-UI negotiation is allowed only before ciphering is enabled.</p> <p>In addition, the CR eliminates the need to specify the (missing) exception case where an attempt is made to negotiate IOV-UI after ciphering is enabled.</p>
Consequences if not approved:	⌘	

Clauses affected:	⌘	6.4.1.6	
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘
		<input type="checkbox"/> Test specifications	
		<input type="checkbox"/> O&M Specifications	
Other comments:	⌘	Related to Tdoc N1-01196	

6.4.1.6 Exchange Identification (XID) command/response

This frame shall be used to negotiate and re-negotiate LLC layer parameters and layer-3 parameters. XID frames can be transmitted in ADM and ABM.

The negotiation procedure is one-step, i.e., one side shall start the process by sending an XID command, offering a certain set of parameters from the applicable parameter repertoire (see Table 1) the sending entity wants to negotiate, proposing values within the allowed range. In return, the other side shall send an XID response, either confirming these parameter values by returning the requested values, or offering higher or lower ones in their place. As an optimisation, parameters confirming the requested values may be omitted from the XID response. See Table 1 for sense of negotiation. This shall end the negotiation process.

Parameters that are not included in neither the XID command nor in the XID response, shall retain their current values.

The responding side may respond with parameters that were not included in the XID command. A parameter that was not included in the XID command shall in this case be treated as if the current value of the parameter was included in the XID command. The responding side shall include such a parameter in every XID response until the parameter has been explicitly negotiated, either by responding to an XID command that included the parameter, or by explicitly including the parameter the next time an XID command is transmitted.

Both entities shall support the negotiated values, however under certain conditions one or more parameters may need to be re-negotiated (e.g., in the case of a change in SGSN).

XID frames shall always be used with the P/F bit set to 1.

Without any prior XID exchange, default values shall apply.

Negotiated XID parameters shall apply to the LLE identified by the DLCI of the XID frames used, except Version, Reset, and IOV-UI that applies to an LLME (i.e., a TLLI), and except Layer-3 Parameters that apply to the layer 3 above the LLE.

Table 1 lists the negotiable LLC layer parameters. Figure 1 shows the format of the XID parameter field.

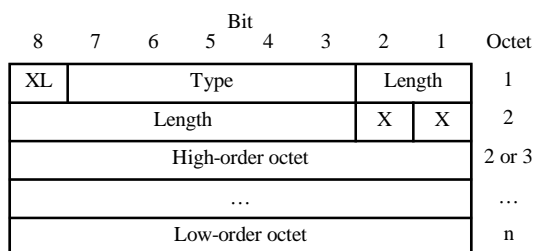


Figure 1: XID parameter field format

A parameter item consists of one or two type/length octets followed by the value of that parameter. The XID Length (XL) bit indicates whether the Length field is 2 bits or 8 bits long. If XL is set to 0, then Length consists of 2 bits and type/length occupies one octet. If XL is set to 1 then Length consists of 8 bits and type/length occupies two octets. The length indicator gives the number of octets that the value actually occupies. Length shall be set to the value in Table 1 for XID parameters that do not have a variable length. The parameter items can be arranged in arbitrary order. The parameter items shall begin in the first octet of the XID information field and follow on contiguously.

Table 1: LLC layer parameter negotiation

Parameter Name	Type	Length	Format (87654321)	Range	Units	Sense of Negotiation
Version (LLC version number)	0	1	0000bbbb	0 through 15	-	down
IOV-UI (ciphering Input offset value for UI frames), common for all SAPIs of a TLLI	1	4	bbbbbbbb bbbbbbbb bbbbbbbb bbbbbbbb	0 through $2^{32} - 1$	-	-
IOV-I (ciphering Input offset value for I frames), for the SAPI under negotiation	2	4	bbbbbbbb bbbbbbbb bbbbbbbb bbbbbbbb	0 through $2^{32} - 1$	-	-
T200 (retransmission time-out)	3	2	0000bbbb bbbbbbbb	1 through 4 095	0.1 seconds	up
N200 (maximum number of retransmissions)	4	1	0000bbbb	1 through 15	-	up
N201-U (maximum information field length for U and UI frames)	5	2	00000bbb bbbbbbbb	140 through 1 520	octets	down
N201-I (maximum information field length for I frames)	6	2	00000bbb bbbbbbbb	140 through 1 520	octets	down
mD (I frame buffer size in the downlink direction)	7	2	0bbbbbbb bbbbbbbb	0, 9 through 24 320	16 octets	down
mU (I frame buffer size in the uplink direction)	8	2	0bbbbbbb bbbbbbbb	0, 9 through 24 320	16 octets	down
kD (window size in the downlink direction)	9	1	bbbbbbbb	1 through 255	frames	down
kU (window size in the uplink direction)	10	1	bbbbbbbb	1 through 255	frames	down
Layer-3 Parameters	11	Variable	See GSM 04.65			
Reset	12	0	-	-	-	-
<ul style="list-style-type: none"> - The Range for N201-U for SAPI 1 is 400 through 1 520 octets, and for SAPI 7 270 through 1 520 octets. - All other Types and Ranges are reserved for future versions of the present document. - The length for Layer-3 Parameters shall be set equal to the number of octets received from layer 3. If an empty XID block is received from layer 3, the LLE shall include a zero-length Layer-3 Parameters XID parameter in the XID parameter field to allow the receiving LLE to distinguish between LLC and layer-3 initiated procedures. 						

Version shall not be negotiated while in ABM.

Reset shall only be negotiated with an XID frame, and only be transmitted in the downlink direction. If Reset is present in an XID frame, then it shall be the first XID parameter in the XID information field.

IOV-UI shall only be negotiated in ADM, and only before ciphering is enabled. IOV-I shall only be negotiated with SABM and UA frames. IOV-UI and IOV-I shall only be transmitted in the downlink direction.

T200, N200, and N201-U can be negotiated in ADM and ABM. The new values of T200 shall only apply to timers set after the negotiation has been completed. If N201-U is negotiated to a lower value than previously used, then any queued or new U and UI frames that violates the new value of N201-U should be discarded and not transmitted.

N201-I, mD, mU, kD, and kU can be negotiated to any value in Range in ADM. In ABM, N201-I, mD, mU, kD, and kU can only be negotiated to the same or higher value as previously used.

CHANGE REQUEST

⌘ **04.64 CR A148** ⌘ rev **-** ⌘ Current version: **8.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘	Correction of IOV-UI negotiation	
Source:	⌘	Motorola	
Work item code:	⌘	GPRS	Date: ⌘ Sep. 26, 2000
Category:	⌘	A	Release: ⌘ R99
		<p><i>Use <u>one</u> of the following categories:</i></p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p><i>Use <u>one</u> of the following releases:</i></p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>

Reason for change:	⌘	The current version of 04.64 does not permit the negotiation of IOV-UI parameter after ciphering is enabled. However, according to the discussion in document N1-01196, IOV-UI negotiation must be permitted after ciphering has been enabled. Otherwise, the two LLC peers will never manage to negotiate a new IOV-UI value and will always use the default IOV-UI.
Summary of change:	⌘	<p>The CR proposes to remove the condition stating that the IOV-UI negotiation is allowed only before ciphering is enabled.</p> <p>In addition, the CR eliminates the need to specify the (missing) exception case where an attempt is made to negotiate IOV-UI after ciphering is enabled.</p>
Consequences if not approved:	⌘	

Clauses affected:	⌘	6.4.1.6	
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘
		<input type="checkbox"/> Test specifications	
		<input type="checkbox"/> O&M Specifications	
Other comments:	⌘	Related to Tdoc N1-01196	

6.4.1.6 Exchange Identification (XID) command/response

This frame shall be used to negotiate and re-negotiate LLC layer parameters and layer-3 parameters. XID frames can be transmitted in ADM and ABM.

The negotiation procedure is one-step, i.e., one side shall start the process by sending an XID command, offering a certain set of parameters from the applicable parameter repertoire (see Table 1) the sending entity wants to negotiate, proposing values within the allowed range. In return, the other side shall send an XID response, either confirming these parameter values by returning the requested values, or offering higher or lower ones in their place. As an optimisation, parameters confirming the requested values may be omitted from the XID response. See Table 1 for sense of negotiation. This shall end the negotiation process.

Parameters that are not included in neither the XID command nor in the XID response, shall retain their current values.

The responding side may respond with parameters that were not included in the XID command. A parameter that was not included in the XID command shall in this case be treated as if the current value of the parameter was included in the XID command. The responding side shall include such a parameter in every XID response until the parameter has been explicitly negotiated, either by responding to an XID command that included the parameter, or by explicitly including the parameter the next time an XID command is transmitted.

Both entities shall support the negotiated values, however under certain conditions one or more parameters may need to be re-negotiated (e.g., in the case of a change in SGSN).

XID frames shall always be used with the P/F bit set to 1.

Without any prior XID exchange, default values shall apply.

Negotiated XID parameters shall apply to the LLE identified by the DLCI of the XID frames used, except Version, Reset, and IOV-UI that applies to an LLME (i.e., a TLLI), and except Layer-3 Parameters that apply to the layer 3 above the LLE.

Table 1 lists the negotiable LLC layer parameters. Figure 1 shows the format of the XID parameter field.

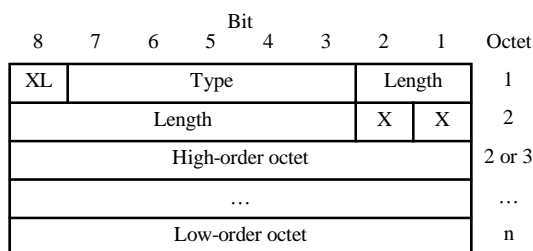


Figure 1: XID parameter field format

A parameter item consists of one or two type/length octets followed by the value of that parameter. The XID Length (XL) bit indicates whether the Length field is 2 bits or 8 bits long. If XL is set to 0, then Length consists of 2 bits and type/length occupies one octet. If XL is set to 1 then Length consists of 8 bits and type/length occupies two octets. The length indicator gives the number of octets that the value actually occupies. Length shall be set to the value in Table 1 for XID parameters that do not have a variable length. The parameter items can be arranged in arbitrary order. The parameter items shall begin in the first octet of the XID information field and follow on contiguously.

Table 1: LLC layer parameter negotiation

Parameter Name	Type	Length	Format (87654321)	Range	Units	Sense of Negotiation
Version (LLC version number)	0	1	0000bbbb	0 through 15	-	down
IOV-UI (ciphering Input offset value for UI frames), common for all SAPIs of a TLLI	1	4	bbbbbbbb bbbbbbbb bbbbbbbb bbbbbbbb	0 through $2^{32} - 1$	-	-
IOV-I (ciphering Input offset value for I frames), for the SAPI under negotiation	2	4	bbbbbbbb bbbbbbbb bbbbbbbb bbbbbbbb	0 through $2^{32} - 1$	-	-
T200 (retransmission time-out)	3	2	0000bbbb bbbbbbbb	1 through 4 095	0.1 seconds	up
N200 (maximum number of retransmissions)	4	1	0000bbbb	1 through 15	-	up
N201-U (maximum information field length for U and UI frames)	5	2	00000bbb bbbbbbbb	140 through 1 520	octets	down
N201-I (maximum information field length for I frames)	6	2	00000bbb bbbbbbbb	140 through 1 520	octets	down
mD (I frame buffer size in the downlink direction)	7	2	0bbbbbbb bbbbbbbb	0, 9 through 24 320	16 octets	down
mU (I frame buffer size in the uplink direction)	8	2	0bbbbbbb bbbbbbbb	0, 9 through 24 320	16 octets	down
kD (window size in the downlink direction)	9	1	bbbbbbbb	1 through 255	frames	down
kU (window size in the uplink direction)	10	1	bbbbbbbb	1 through 255	frames	down
Layer-3 Parameters	11	Variable	See GSM 04.65			
Reset	12	0	-	-	-	-
<ul style="list-style-type: none"> - The Range for N201-U for SAPI 1 is 400 through 1 520 octets, and for SAPI 7 270 through 1 520 octets. - All other Types and Ranges are reserved for future versions of the present document. - The length for Layer-3 Parameters shall be set equal to the number of octets received from layer 3. If an empty XID block is received from layer 3, the LLE shall include a zero-length Layer-3 Parameters XID parameter in the XID parameter field to allow the receiving LLE to distinguish between LLC and layer-3 initiated procedures. 						

Version shall not be negotiated while in ABM.

Reset shall only be negotiated with an XID frame, and only be transmitted in the downlink direction. If Reset is present in an XID frame, then it shall be the first XID parameter in the XID information field.

IOV-UI shall only be negotiated in ADM, and only before ciphering is enabled. IOV-I shall only be negotiated with SABM and UA frames. IOV-UI and IOV-I shall only be transmitted in the downlink direction.

T200, N200, and N201-U can be negotiated in ADM and ABM. The new values of T200 shall only apply to timers set after the negotiation has been completed. If N201-U is negotiated to a lower value than previously used, then any queued or new U and UI frames that violates the new value of N201-U should be discarded and not transmitted.

N201-I, mD, mU, kD, and kU can be negotiated to any value in Range in ADM. In ABM, N201-I, mD, mU, kD, and kU can only be negotiated to the same or higher value as previously used.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 267** ⌘ rev **-** ⌘ Current version: **3.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification to the network initiated GPRS detach procedure (IMSI detach)		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 07 November 00
Category:	⌘ F	Release:	⌘ R99
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ According to the standard, a MS in operation mode A or B in network operation mode I which was detached by the network with detach type "IMSI detach" shall perform a combined routing area updating procedure to re-attach for non-GPRS services. It is clarified that to this purpose the MS shall use the usual combined routing area updating procedure specified in section 4.7.5.2 and shall set the MM update status to U2 NOT UPDATED. This prevents the MS from performing MM connection management procedures via the A/Iu interface while the combined routing area updating is running.
Summary of change:	⌘ See reason for change.
Consequences if not approved:	⌘ A possible collision in the MSC/VLR between a MM connection management procedure (performed via the A/Iu interface) and a MM specific procedure (Location Update via the Gs interface) could result in the rejection of a call.

Clauses affected:	⌘ 4.7.4.2.2	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
Other comments:	⌘	

4.7.4.2 Network initiated GPRS detach procedure

4.7.4.2.1 Network initiated GPRS detach procedure initiation

The network initiates the GPRS detach procedure by sending a DETACH REQUEST message to the MS. The DETACH REQUEST message shall include a detach type IE. In addition, the network may include a cause IE to specify the reason for the detach request. The network shall start timer T3322. If the detach type IE indicates "re-attach not required" or "re-attach required", the network shall deactivate the PDP contexts and deactivate the logical link(s), if any, and shall change to state GMM-DEREGISTERED-INITIATED.

4.7.4.2.2 Network initiated GPRS detach procedure completion by the MS

When receiving the DETACH REQUEST message and the detach type IE indicates "re-attach not required" or "re-attach required", the MS shall deactivate the PDP contexts and deactivate the logical link(s), if any. The MS shall then send a DETACH ACCEPT message to the network and shall change state to GMM-DEREGISTERED. The MS shall, after the completion of the GPRS detach procedure, initiate a GPRS attach procedure if indicated by the network in the detach type IE.

A GPRS MS operating in MS operation mode A or B in network operation mode I, which receives an DETACH REQUEST message with detach type indicating "re-attach required" or "re-attach not required" and no cause code, is only detached for GPRS services in the network.

When receiving the DETACH REQUEST message and the detach type IE indicates "IMSI detach", the MS shall not deactivate the PDP contexts. The MS shall set the MM update status to U2 NOT UPDATED. A MS in operation mode A or B in network operation mode I may send a DETACH ACCEPT message to the network, and shall re-attach to non-GPRS service by performing the combined routing area updating procedure according to section 4.7.5.2, sending a ROUTING AREA UPDATE REQUEST message with Update type IE indicating "combined RA/LA updating with IMSI attach". A MS in operation mode C, or in MS operation mode A or B in network operation mode II or III, shall send a DETACH ACCEPT message to the network.

If the detach type IE indicates "IMSI detach", or "re-attach required" then the MS shall ignore the cause code if received.

If the detach type information element value indicates "re-attach required" or "re-attach not required" and the MS is attached for GPRS and non-GPRS services and the network operates in network operation mode I, then if in the MS the timer T3212 is not already running, the timer T3212 shall be set to its initial value and restarted.

If the detach type IE indicates "re-attach required", the MS shall perform a new attach procedure. The MS should also activate PDP context(s) to replace any previously active PDP contexts.

NOTE: In some cases, user interaction may be required and then the MS cannot activate the PDP context(s) automatically.

If the detach type IE indicates "re-attach not required", then, depending on the received cause code, the MS shall act as follows:

2 (IMSI unknown in HLR)

The MS shall set the update status to U3 ROAMING NOT ALLOWED and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE. The SIM shall be considered as invalid for non-GPRS services until switching off or the SIM is removed.

A GPRS MS operating in MS operation mode A or B in network operation mode I, is still IMSI attached for GPRS services in the network.

3 (Illegal MS); or

6 (Illegal ME)

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence

number. The new GMM state is GMM-DEREGISTERED. The SIM shall be considered as invalid for GPRS services until switching off or the SIM is removed.

A GPRS MS operating in MS operation mode A or B shall in addition set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM idle. The SIM shall be considered as invalid also for non-GPRS services until switching off or the SIM is removed.

7 (GPRS services not allowed)

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The SIM shall be considered as invalid for GPRS services until switching off or the SIM is removed. The new state is GMM-DEREGISTERED.

A GPRS MS operating in MS operation mode A or B in network operation mode I, is still IMSI attached for CS services in the network.

8 (GPRS services and non-GPRS services not allowed)

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED and the update status to U3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2). Furthermore, it shall delete any P-TMSI, P-TMSI signature, TMSI, RAI, LAI, ciphering key sequence number and GPRS ciphering key sequence number and shall consider the SIM as invalid for GPRS and non-GPRS services until switching off or the SIM is removed.

11 (PLMN not allowed);

12 (Location area not allowed); or

13 (Roaming not allowed in this location area)

The MS shall delete any RAI or LAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2).

A GPRS MS operating in MS operation mode A or B shall in addition set the update status to U3 ROAMING NOT ALLOWED and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE.

The MS shall store the LAI or the PLMN identity in the appropriate forbidden list, i.e. in the "forbidden PLMN list" for cause #11, in the list of "forbidden location areas for regional provision of service" for cause #12 or in the list of "forbidden location areas for roaming" for cause #13. If #11 or #13 was received, the MS shall perform a PLMN selection instead of a cell selection.

Other cause values shall not impact the update status. Further actions of the MS are implementation dependent.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 268** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification to the network initiated GPRS detach procedure (IMSI detach)		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 07 November 00
Category:	⌘ A	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ According to the standard, a MS in operation mode A or B in network operation mode I which was detached by the network with detach type "IMSI detach" shall perform a combined routing area updating procedure to re-attach for non-GPRS services. It is clarified that to this purpose the MS shall use the usual combined routing area updating procedure specified in section 4.7.5.2 and shall set the MM update status to U2 NOT UPDATED. This prevents the MS from performing MM connection management procedures via the A/Iu interface while the combined routing area updating is running.
Summary of change:	⌘ See reason for change.
Consequences if not approved:	⌘ A possible collision in the MSC/VLR between a MM connection management procedure (performed via the A/Iu interface) and a MM specific procedure (Location Update via the Gs interface) could result in the rejection of a call.

Clauses affected:	⌘ 4.7.4.2.2	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
Other comments:	⌘	

4.7.4.2 Network initiated GPRS detach procedure

4.7.4.2.1 Network initiated GPRS detach procedure initiation

The network initiates the GPRS detach procedure by sending a DETACH REQUEST message to the MS. The DETACH REQUEST message shall include a detach type IE. In addition, the network may include a cause IE to specify the reason for the detach request. The network shall start timer T3322. If the detach type IE indicates "re-attach not required" or "re-attach required", the network shall deactivate the PDP contexts and deactivate the logical link(s), if any, and shall change to state GMM-DEREGISTERED-INITIATED.

4.7.4.2.2 Network initiated GPRS detach procedure completion by the MS

When receiving the DETACH REQUEST message and the detach type IE indicates "re-attach not required" or "re-attach required", the MS shall deactivate the PDP contexts and deactivate the logical link(s), if any. The MS shall then send a DETACH ACCEPT message to the network and shall change state to GMM-DEREGISTERED. The MS shall, after the completion of the GPRS detach procedure, initiate a GPRS attach procedure if indicated by the network in the detach type IE.

A GPRS MS operating in MS operation mode A or B in network operation mode I, which receives an DETACH REQUEST message with detach type indicating "re-attach required" or "re-attach not required" and no cause code, is only detached for GPRS services in the network.

When receiving the DETACH REQUEST message and the detach type IE indicates "IMSI detach", the MS shall not deactivate the PDP contexts. The MS shall set the MM update status to U2 NOT UPDATED. A MS in operation mode A or B in network operation mode I may send a DETACH ACCEPT message to the network, and shall re-attach to non-GPRS service by performing the combined routing area updating procedure according to section 4.7.5.2, sending a ROUTING AREA UPDATE REQUEST message with Update type IE indicating "combined RA/LA updating with IMSI attach". A MS in operation mode C, or in MS operation mode A or B in network operation mode II or III, shall send a DETACH ACCEPT message to the network.

If the detach type IE indicates "IMSI detach", or "re-attach required" then the MS shall ignore the cause code if received.

If the detach type information element value indicates "re-attach required" or "re-attach not required" and the MS is attached for GPRS and non-GPRS services and the network operates in network operation mode I, then if in the MS the timer T3212 is not already running, the timer T3212 shall be set to its initial value and restarted.

If the detach type IE indicates "re-attach required", the MS shall perform a new attach procedure. The MS should also activate PDP context(s) to replace any previously active PDP contexts.

NOTE: In some cases, user interaction may be required and then the MS cannot activate the PDP context(s) automatically.

If the detach type IE indicates "re-attach not required", then, depending on the received cause code, the MS shall act as follows:

2 (IMSI unknown in HLR)

The MS shall set the update status to U3 ROAMING NOT ALLOWED and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE. The SIM shall be considered as invalid for non-GPRS services until switching off or the SIM is removed.

A GPRS MS operating in MS operation mode A or B in network operation mode I, is still IMSI attached for GPRS services in the network.

3 (Illegal MS); or

6 (Illegal ME)

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence

number. The new GMM state is GMM-DEREGISTERED. The SIM shall be considered as invalid for GPRS services until switching off or the SIM is removed.

A GPRS MS operating in MS operation mode A or B shall in addition set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM idle. The SIM shall be considered as invalid also for non-GPRS services until switching off or the SIM is removed.

7 (GPRS services not allowed)

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The SIM shall be considered as invalid for GPRS services until switching off or the SIM is removed. The new state is GMM-DEREGISTERED.

A GPRS MS operating in MS operation mode A or B in network operation mode I, is still IMSI attached for CS services in the network.

8 (GPRS services and non-GPRS services not allowed)

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED and the update status to U3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2). Furthermore, it shall delete any P-TMSI, P-TMSI signature, TMSI, RAI, LAI, ciphering key sequence number and GPRS ciphering key sequence number and shall consider the SIM as invalid for GPRS and non-GPRS services until switching off or the SIM is removed.

11 (PLMN not allowed);

12 (Location area not allowed); or

13 (Roaming not allowed in this location area)

The MS shall delete any RAI or LAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2).

A GPRS MS operating in MS operation mode A or B shall in addition set the update status to U3 ROAMING NOT ALLOWED and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE.

The MS shall store the LAI or the PLMN identity in the appropriate forbidden list, i.e. in the "forbidden PLMN list" for cause #11, in the list of "forbidden location areas for regional provision of service" for cause #12 or in the list of "forbidden location areas for roaming" for cause #13. If #11 or #13 was received, the MS shall perform a PLMN selection instead of a cell selection.

Other cause values shall not impact the update status. Further actions of the MS are implementation dependent.

CHANGE REQUEST

⌘ **04.08 CR A1051** ⌘ rev **-** ⌘ Current version: **6.12.1** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of update status on Authentication Reject		
Source:	⌘ Nokia		
Work item code:	⌘ GPRS	Date:	⌘ 10-Nov-00
Category:	⌘ F	Release:	⌘ R97
<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ It is stated that upon receipt of an AUTHENTICATION REJECT message, MS shall set update status in the SIM to U2 ROAMING NOT ALLOWED. This is incorrect. As specified in clause 4.1.2.2 of the same specification, update statuses U2 NOT UPDATED and U3 ROAMING NOT ALLOWED exist, but U2 ROAMING NOT ALLOWED doesn't.
Summary of change:	⌘ Change 'U2 ROAMING NOT ALLOWED' to 'U3 ROAMING NOT ALLOWED' in clause 4.3.2.5.
Consequences if not approved:	⌘ The required update status in MS after AUTHENTICATION REJECT message remains ambiguous.

Clauses affected:	⌘ 4.3.2.5
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.3.2.5 Unsuccessful authentication

If authentication fails, i.e. if the response is not valid, the network may distinguish between the two different ways of identification used by the mobile station:

- the TMSI was used;
- the IMSI was used.

If the TMSI has been used, the network may decide to initiate the identification procedure. If the IMSI given by the mobile station then differs from the one the network had associated with the TMSI, the authentication should be restarted with the correct parameters. If the IMSI provided by the MS is the expected one (i.e. authentication has really failed), the network should proceed as described below.

If the IMSI has been used, or the network decides not to try the identification procedure, an AUTHENTICATION REJECT message should be transferred to the mobile station.

After having sent this message, all MM connections in progress (if any) are released and the network should initiate the RR connection release procedure described in section 3.5.

Upon receipt of an AUTHENTICATION REJECT message, the mobile station shall set the update status in the SIM to [U2-U3](#) ROAMING NOT ALLOWED, delete from the SIM the stored TMSI, LAI and ciphering key sequence number. The SIM shall be considered as invalid until switching off or the SIM is removed.

If the AUTHENTICATION REJECT message is received in the state IMSI DETACH INITIATED the mobile station shall follow section 4.3.4.3.

If the AUTHENTICATION REJECT message is received in any other state the mobile station shall abort any MM specific, MM connection establishment or call re-establishment procedure, stop any of the timers T3210 or T3230 (if running), release all MM connections (if any), start timer T3240 and enter the state WAIT FOR NETWORK COMMAND, expecting the release of the RR connection. If the RR connection is not released within a given time controlled by the timer T3240, the mobile station shall abort the RR connection. In both cases, either after a RR connection release triggered from the network side or after a RR connection abort requested by the MS-side, the MS enters state MM IDLE, substate NO IMSI.

CHANGE REQUEST

⌘ **04.08 CR A1053** ⌘ rev **-** ⌘ Current version: **7.9.1** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of update status on Authentication Reject		
Source:	⌘ Nokia		
Work item code:	⌘ GPRS	Date:	⌘ 10-Nov-00
Category:	⌘ A	Release:	⌘ R98
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ It is stated that upon receipt of an AUTHENTICATION REJECT message, MS shall set update status in the SIM to U2 ROAMING NOT ALLOWED. This is incorrect. As specified in clause 4.1.2.2 of the same specification, update statuses U2 NOT UPDATED and U3 ROAMING NOT ALLOWED exist, but U2 ROAMING NOT ALLOWED doesn't.
Summary of change:	⌘ Change 'U2 ROAMING NOT ALLOWED' to 'U3 ROAMING NOT ALLOWED' in clause 4.3.2.5.
Consequences if not approved:	⌘ The required update status in MS after AUTHENTICATION REJECT message remains ambiguous.

Clauses affected:	⌘ 4.3.2.5		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.3.2.5 Unsuccessful authentication

If authentication fails, i.e. if the response is not valid, the network may distinguish between the two different ways of identification used by the mobile station:

- the TMSI was used;
- the IMSI was used.

If the TMSI has been used, the network may decide to initiate the identification procedure. If the IMSI given by the mobile station then differs from the one the network had associated with the TMSI, the authentication should be restarted with the correct parameters. If the IMSI provided by the MS is the expected one (i.e. authentication has really failed), the network should proceed as described below.

If the IMSI has been used, or the network decides not to try the identification procedure, an AUTHENTICATION REJECT message should be transferred to the mobile station.

After having sent this message, all MM connections in progress (if any) are released and the network should initiate the RR connection release procedure described in section 3.5.

Upon receipt of an AUTHENTICATION REJECT message, the mobile station shall set the update status in the SIM to [U2-U3](#) ROAMING NOT ALLOWED, delete from the SIM the stored TMSI, LAI and ciphering key sequence number. The SIM shall be considered as invalid until switching off or the SIM is removed.

If the AUTHENTICATION REJECT message is received in the state IMSI DETACH INITIATED the mobile station shall follow section 4.3.4.3.

If the AUTHENTICATION REJECT message is received in any other state the mobile station shall abort any MM specific, MM connection establishment or call re-establishment procedure, stop any of the timers T3210 or T3230 (if running), release all MM connections (if any), start timer T3240 and enter the state WAIT FOR NETWORK COMMAND, expecting the release of the RR connection. If the RR connection is not released within a given time controlled by the timer T3240, the mobile station shall abort the RR connection. In both cases, either after a RR connection release triggered from the network side or after a RR connection abort requested by the MS-side, the MS enters state MM IDLE, substate NO IMSI.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 277** ⌘ rev **-** ⌘ Current version: **3.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of update status on Authentication Reject		
Source:	⌘ Nokia		
Work item code:	⌘ GPRS	Date:	⌘ 10-Nov-00
Category:	⌘ F	Release:	⌘ R99
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ It is stated that upon receipt of an AUTHENTICATION REJECT message, MS shall set update status in the SIM to U2 ROAMING NOT ALLOWED. This is incorrect. As specified in clause 4.1.2.2 of the same specification, update statuses U2 NOT UPDATED and U3 ROAMING NOT ALLOWED exist, but U2 ROAMING NOT ALLOWED doesn't.
Summary of change:	⌘ Change 'U2 ROAMING NOT ALLOWED' to 'U3 ROAMING NOT ALLOWED' in clause 4.3.2.5.
Consequences if not approved:	⌘ The required update status in MS after AUTHENTICATION REJECT message remains ambiguous.

Clauses affected:	⌘ 4.3.2.5		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.3.2.5 Authentication not accepted by the network

If authentication fails, i.e. if the response is not valid, the network may distinguish between the two different ways of identification used by the mobile station:

- the TMSI was used;
- the IMSI was used.

If the TMSI has been used, the network may decide to initiate the identification procedure. If the IMSI given by the mobile station then differs from the one the network had associated with the TMSI, the authentication should be restarted with the correct parameters. If the IMSI provided by the MS is the expected one (i.e. authentication has really failed), the network should proceed as described below.

If the IMSI has been used, or the network decides not to try the identification procedure, an AUTHENTICATION REJECT message should be transferred to the mobile station.

After having sent this message, all MM connections in progress (if any) are released and the network should initiate the RR connection release procedure described in section 3.5. of 04.18 (GSM) or in TS 25.331 (UMTS).

Upon receipt of an AUTHENTICATION REJECT message, the mobile station shall set the update status in the SIM to ~~U2~~U3 ROAMING NOT ALLOWED, delete from the SIM the stored TMSI, LAI and ciphering key sequence number. The SIM shall be considered as invalid until switching off or the SIM is removed.

If the AUTHENTICATION REJECT message is received in the state IMSI DETACH INITIATED the mobile station shall follow section 4.3.4.3.

If the AUTHENTICATION REJECT message is received in any other state the mobile station shall abort any MM specific, MM connection establishment or call re-establishment procedure, stop any of the timers T3210 or T3230 (if running), release all MM connections (if any), start timer T3240 and enter the state WAIT FOR NETWORK COMMAND, expecting the release of the RR connection. If the RR connection is not released within a given time controlled by the timer T3240, the mobile station shall abort the RR connection. In both cases, either after a RR connection release triggered from the network side or after a RR connection abort requested by the MS-side, the MS enters state MM IDLE, substate NO IMSI. If the MS has a separate ongoing RR connection to a different core network node, it shall consider this separate connection as still being good.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 278** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of update status on Authentication Reject		
Source:	⌘ Nokia		
Work item code:	⌘ GPRS	Date:	⌘ 10-Nov-00
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ It is stated that upon receipt of an AUTHENTICATION REJECT message, MS shall set update status in the SIM to U2 ROAMING NOT ALLOWED. This is incorrect. As specified in clause 4.1.2.2 of the same specification, update statuses U2 NOT UPDATED and U3 ROAMING NOT ALLOWED exist, but U2 ROAMING NOT ALLOWED doesn't.
Summary of change:	⌘ Change 'U2 ROAMING NOT ALLOWED' to 'U3 ROAMING NOT ALLOWED' in clause 4.3.2.5.
Consequences if not approved:	⌘ The required update status in MS after AUTHENTICATION REJECT message remains ambiguous.

Clauses affected:	⌘ 4.3.2.5		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.3.2.5 Authentication not accepted by the network

If authentication fails, i.e. if the response is not valid, the network may distinguish between the two different ways of identification used by the mobile station:

- the TMSI was used;
- the IMSI was used.

If the TMSI has been used, the network may decide to initiate the identification procedure. If the IMSI given by the mobile station then differs from the one the network had associated with the TMSI, the authentication should be restarted with the correct parameters. If the IMSI provided by the MS is the expected one (i.e. authentication has really failed), the network should proceed as described below.

If the IMSI has been used, or the network decides not to try the identification procedure, an AUTHENTICATION REJECT message should be transferred to the mobile station.

After having sent this message, all MM connections in progress (if any) are released and the network should initiate the RR connection release procedure described in section 3.5. of 04.18 (GSM) or in TS 25.331 (UMTS).

Upon receipt of an AUTHENTICATION REJECT message, the mobile station shall set the update status in the SIM to ~~U2~~U3 ROAMING NOT ALLOWED, delete from the SIM the stored TMSI, LAI and ciphering key sequence number. The SIM shall be considered as invalid until switching off or the SIM is removed.

If the AUTHENTICATION REJECT message is received in the state IMSI DETACH INITIATED the mobile station shall follow section 4.3.4.3.

If the AUTHENTICATION REJECT message is received in any other state the mobile station shall abort any MM specific, MM connection establishment or call re-establishment procedure, stop any of the timers T3210 or T3230 (if running), release all MM connections (if any), start timer T3240 and enter the state WAIT FOR NETWORK COMMAND, expecting the release of the RR connection. If the RR connection is not released within a given time controlled by the timer T3240, the mobile station shall abort the RR connection. In both cases, either after a RR connection release triggered from the network side or after a RR connection abort requested by the MS-side, the MS enters state MM IDLE, substate NO IMSI. If the MS has a separate ongoing RR connection to a different core network node, it shall consider this separate connection as still being good.

CR-Form-v3

CHANGE REQUEST

⌘ **24.007 CR 025** ⌘ rev **r1** ⌘ Current version: **3.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘	RABMAS-SAP and RABMSM-SAP adaptation for handling of unsynchronized PDP contexts	
Source:	⌘	Siemens AG	
Work item code:	⌘	GPRS	Date: ⌘ 22.11.00
Category:	⌘	F	Release: ⌘ R99
		<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>

Reason for change:	⌘	<p>The MS and the core network may have a different view on what PDP contexts are in state PDP-ACTIVE. This problem is likely to happen due to break in radio connection and should be solved during re-establishment.</p> <p>Please see document N1-001211 for complete description of the situation and the proposal to solve the problem.</p>
Summary of change:	⌘	Sections 6.5.3, 9.3.3
Consequences if not approved:	⌘	MS and core network can have a different view on PDP contexts in state PDP-ACTIVE which results in loss of data transmitted over air interface but dropped on the MS side or to buffer overflow in UL-direction on MS side.

Clauses affected:	⌘	
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> O&M Specifications ⌘
Other comments:	⌘	

6.5.3 Session Management Services for RABMSM-SAP (UMTS only)

Table 6.5.3: Service primitives and parameters at RABMSM-SAP - MS side

PRIMITIVE	PARAMETER (message, info elements of message, other parameters)	Reference
RABMSM-ACTIVATE-IND	NSAPI, QoS	6.5.3.1
RABMSM-ACTIVATE-RSP	NSAPI	6.5.3.2
RABMSM-DEACTIVATE-IND	NSAPI _s	6.5.3.3
RABMSM-DEACTIVATE-RSP	NSAPI _s	6.5.3.4
RABMSM-DEACTIVATE-REQ	NSAPI	6.5.3.5
RABMSM-MODIFY-IND	NSAPI, QoS	6.5.3.6
RABMSM-MODIFY-RSP	-	6.5.3.7
RABMSM-STATUS-REQ	- Cause	6.5.3.8

6.5.3.1 RABMSM-ACTIVATE-IND

Indication used by the SM entity to inform the RABM entity that an NSAPI has been activated for data transfer (e.g. an activate PDP Context request has been sent to the network). It also informs the RABM entity about the requested QoS profile for this NSAPI. The indication is sent by SM towards RABM during an ongoing PDP context activation procedure.

6.5.3.2 RABMSM-ACTIVATE-RSP

Response used by the RABM entity to inform the SM entity that the indicated NSAPI is now in use and that a RAB for the indicated NSAPI is established.

6.5.3.3 RABMSM-DEACTIVATE-IND

Indication used by the SM entity to inform the RABM entity that an NSAPI_s has been de-allocated and cannot be used by the RABM entity anymore. The request is sent by SM towards RABM during an ongoing MS initiated as well as network initiated PDP context de-activation procedure or during local de-activation of a PDP context.

6.5.3.4 RABMSM-DEACTIVATE-RSP

This message is the rResponse to RABMSM-DEACTIVATE-IND used by the RABM entity to inform the SM entity that the NSAPI indicated is no longer in use. It is either sent immediately when there is no corresponding bearer active or it is sent after reception and processing of RABMAS-RAB-RELEASE-IND from access stratum.

6.5.3.5 RABMSM-DEACTIVATE-REQ

This primitive is used by the RABM entity to inform the SM entity that the RAB for an NSAPI has been released. This primitive is only sent for bearer with a RT-QoS classes.

6.5.3.6 RABMSM-MODIFY-IND

Indication used by the SM entity to indicate the change of the QoS for an NSAPI. The indication is sent by SM towards RABM during an ongoing PDP context modification procedure.

6.5.3.7 RABMSM-MODIFY-RSP

Response used by the RABM entity to inform the SM entity that the indicated NSAPI and QoS profile are now in use and the RAB for the NSAPI is established and/or released, if necessary.

6.5.3.8 RABMSM-STATUS-REQ

This primitive is used by the RABM entity to inform the SM entity that RABM cannot continue its operation due to errors at the lower layer (i.e. Access Stratum) or at the RABM layer. The Cause parameter indicates the cause of the error.

***** Next change *****

9.3.3 Service primitives for RABMAS-SAP (UMTS only)

Table 9.3.3: Primitives and parameters at RABMAS-SAP

PRIMITIVE	PARAMETER (message, info elements of message, other parameters)	REFERENCE
RABMAS-RAB-ESTABLISH-IND	RAB ID _s list	9.3.3.1
RABMAS-RAB-ESTABLISH-RES	-	9.3.3.2
RABMAS-RAB-ESTABLISH-REJ	RAB-ID list _s , Cause	9.3.3.3
RABMAS-RAB-RELEASE-IND	RAB ID list	9.3.3.4
RABMAS-RAB-RELEASE-RES	-	9.3.3.5
RABMAS-STATUS-IND	Cause	9.3.3.6

9.3.3.1 RABMAS-RAB-ESTABLISH-IND

Indication from the Access Stratum layer that radio access bearer setup for the indicated list of RAB ID_s (contains NSAPI) has commenced.

9.3.3.2 RABMAS-RAB-ESTABLISH-RES

Response (to RABMAS-RAB-ESTABLISH-IND) used by the RABM entity to inform the Access Stratum sublayer that the indicated NSAPI (in RAB ID) is currently or has been activated by the SM-layer and it is ok to set up the radio access bearer.

9.3.3.3 RABMAS-RAB-ESTABLISH-REJ

Response (to RABMAS-RAB-ESTABLISH-IND) used by the RABM entity to inform the Access Stratum sublayer that all or some of the indicated NSAPI_s (in indicated by RAB ID list in the received RABMAS-RAB-ESTABLISH-IND), have not been activated by the SM-layer and the attempt to setup the radio access bearer_s shall be rejected.

The parameter RAB-ID list contains those RAB-IDs for which a corresponding active PDP context(NSAPI) exists on the MS side. The parameter cause has to be set to 'unsynchronousPDP'.

9.3.3.4 RABMAS-RAB-RELEASE-IND

Indication from the Access Stratum layer that a radio access bearer for the indicated NSAPI has been released.

9.3.3.5 RABMAS-RAB-RELEASE-RES

Response used by the RABM entity to inform the Access Stratum sublayer that the indicated RAB ID has been released in the RABM.

9.3.3.6 RABMAS-STATUS-IND

Indication used by the AS sublayer to transfer failures to the RABM.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 306** ⌘ rev **r1** ⌘ Current version: **3.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification of response handling of Service Request		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 22.11.00
Category:	⌘ F	Release:	⌘ R99
<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ The decision was taken that security mode control procedure is the only valid positive response on SERVICE REQUEST in PMM-IDLE and SERVICE ACCEPT is the only valid positive response in mode PMM-CONNECTED.
	The description for MS is clarified as far as the action is concerned which has to be taken after receiving response.
Summary of change:	⌘
Consequences if not approved:	⌘

Clauses affected:	⌘ 4.7.13.3.	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘
	<input type="checkbox"/> Test specifications	
	<input type="checkbox"/> O&M Specifications	
Other comments:	⌘	

4.7.13 Service Request procedure (UMTS only)

...

4.7.13.3 Service request procedure accepted by the network

If the SERVICE REQUEST message was sent in PMM-IDLE mode, An the indication from the lower layers that the security mode control procedure is completed ~~or reception of a SERVICE ACCEPT message,~~ shall be treated as a successful completion of the procedure. The timer T3317 shall be stopped, and the MS enters GMM-REGISTERED state and PMM-CONNECTED mode.

If the SERVICE REQUEST message was sent in PMM-CONNECTED mode, then the reception of the SERVICE ACCEPT message shall be treated as a successful completion of the procedure. The timer T3317 shall be stopped and the MS remains in PMM-CONNECTED mode.

CHANGE REQUEST

⌘ **24.008 CR 271** ⌘ rev **r1** ⌘ Current version: **3.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ APN used for detection of duplicated PDP context activation		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 10.11.00
Category:	⌘ F	Release:	⌘ R99
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change: ⌘ The combination of APN and PDP address is compared during a PDP context activation against all already activated PDP contexts. If there is a match between the requested PDP context and an already active PDP context then this is an indication, that the MS has the already active PDP context “forgotten”.

However, the APN as well as the PDP address run through a selection procedure in SGSN. This procedure is defined in 23.060 annex A.2.

It is necessary to state which APN and PDP address is used to find out if there is a “forgotten” PDP context.

There are two possibilities to compare the combinations:

- 1.) **before** the conversions according the selection rule is done (means the network has to store the input of all previously activated PDP contexts
- 2.) **after** the conversion

It must be made clear that it is not possible to compare the conversion result of the previously activated PDP context with the parameter provided in the actual ACTIVATE PDP CONTEXT REQUEST.

Summary of change: ⌘ Use APN before application of selection rules for error detection

Consequences if not approved: ⌘ Different interpretation of the standard would possibly result in different behaviour during PDP context activation.

Clauses affected: ⌘ 6.1.3.1.5

Other specs affected: ⌘ Other core specifications ⌘ Test specifications O&M Specifications

Other comments: ☹

[Yellow highlighted area]

6.1.3.1.4 Unsuccessful PDP context activation requested by the network

Upon receipt of the REQUEST PDP CONTEXT ACTIVATION message, the MS may reject the network requested PDP context activation by sending the REQUEST PDP CONTEXT ACTIVATION REJECT message to the network. The message contains the same TI as included in the REQUEST PDP CONTEXT ACTIVATION and an additional cause code that typically indicates one of the following causes:

- # 26: insufficient resources;
- # 31: activation rejected, unspecified;
- # 40: feature not supported; or
- # 95 - 111: protocol errors.

The network shall stop timer T3385 and enter state PDP-INACTIVE.

6.1.3.1.5 Abnormal cases

The following abnormal cases can be identified:

a) Expiry of timers

In the mobile station:

On the first expiry of the timer T3380, the MS shall resend the ACTIVATE PDP CONTEXT REQUEST and shall reset and restart timer T3380. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3380, the MS shall release all resources possibly allocated for this invocation and shall abort the procedure; no automatic PDP context activation re-attempt shall be performed.

On the network side:

On the first expiry of the timer T3385, the network shall resend the message REQUEST PDP CONTEXT ACTIVATION and shall reset and restart timer T3385. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3385, the network shall release possibly allocated resources for this activation and shall abort the procedure.

b) Collision of MS initiated and network requested PDP context activation

Dynamic PDP address collision case:

If the MS uses dynamic PDP addressing that turns out to collide with the network requested PDP address, then there is no detection of collision specified but left for network implementation.

Static PDP address collision detected within the mobile station:

A collision of an MS initiated and a network requested PDP context activation procedure is identified by the MS if a REQUEST PDP CONTEXT ACTIVATION message is received from the network after the MS has sent an ACTIVATE PDP CONTEXT REQUEST message, and the MS has not yet received an ACTIVATE PDP CONTEXT ACCEPT or ACTIVATE PDP CONTEXT REJECT message.

NOTE: In general, the MS is unable to test if the PDP type, PDP address and APN in the REQUEST PDP CONTEXT ACTIVATION message are the same as those for the PDN to which it is attempting to activate a context. This is because the MS may have omitted one or more of the parameters in the ACTIVATE PDP CONTEXT REQUEST message, since it is relying on default values to be provided by the network.

- In the case of such a collision, the MS initiated PDP context activation shall take precedence over the network requested PDP context activation. If the MS is able to compare the PDP type, PDP address and APN requested in the ACTIVATE PDP CONTEXT REQUEST message with those requested in the REQUEST PDP CONTEXT ACTIVATION message and these parameters are equal, then the MS shall discard the REQUEST PDP CONTEXT ACTIVATION message and shall wait for the network response to its ACTIVATE PDP CONTEXT REQUEST message. If the MS is not able to compare the PDP type, PDP address, and APN requested in the ACTIVATE PDP CONTEXT REQUEST message with those requested in the REQUEST PDP CONTEXT ACTIVATION message, then the MS shall send a REQUEST PDP

CONTEXT ACTIVATION REJECT message with the cause 'insufficient resources' to the network, and wait for an ACTIVATE PDP CONTEXT ACCEPT message.

Static PDP address collision detected on the network side:

A collision is detected by the network in the case where the PDP address, PDP type and APN derived (according to 23.060 annex A) from the ACTIVATE PDP CONTEXT REQUEST message received from the MS match those in the REQUEST PDP CONTEXT ACTIVATION message sent to the MS.

- In the case of such a collision, the MS initiated PDP context activation shall take precedence over the network requested PDP context activation. The network shall terminate the network requested PDP context activation procedure, and proceed with the MS initiated PDP context activation procedure

c) MS initiated PDP context activation request for an already activated PDP context (on the network side)

- i) If the network receives a ACTIVATE PDP CONTEXT REQUEST message with the same combination of APN, PDP type and PDP address as an already activated PDP context, the network shall deactivate the existing PDP context and, if any, all the linked PDP contexts (matching the combination of APN, PDP type and PDP address), locally without notification to the MS and proceed with the requested PDP context activation.

Note: If PDP address of existing PDP context is dynamic and establishment of PDP context using dynamic PDP address is requested for the same APN, it shall be recognised as PDP context duplication since one APN allows only one dynamic PDP address for a PDP Type.

- ii) Alternatively (different combination of APN, PDP type and PDP address), if the NSAPI matches that of an already activated PDP context, then the network shall deactivate only the existing PDP context locally without notification to the MS and proceed with the requested PDP context activation.

It is an implementation option if the parameters used for comparison described in clause i) and ii) are the parameters provided in the (current and previous) ACTIVATE PDP CONTEXT REQUESTs or the parameters which are the result of the application of the selection rules defined in TS23.060 Annex A.2.

The parameter provided in the current ACTIVATE PDP CONTEXT REQUEST can not be compared to the actually used parameters (result of application of selection rules defined in TS23.060 Annex A.2) of the previously activated PDP contexts.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 309** ⌘ rev **1** ⌘ Current version: **3.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of PDP context duplication handling		
Source:	⌘ Fujitsu		
Work item code:	⌘ GPRS	Date:	⌘ 23/Nov/2000
Category:	⌘ F Critical correction	Release:	⌘ R99
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ According to the 23.060, a template of PDP context using dynamic PDP address allows to establish more than one PDP context based on the template. But current text in 24.008 does not allow the case because the network recognizes the case as an illegal case. The mismatch shall be corrected updating 24.008 to be in line with 23.060.
Summary of change:	⌘ The duplication check shall be skipped with regard to the dynamic PDP address.
Consequences if not approved:	⌘ More than one PDP context to an APN using dynamic PDP address is not allowed.

Clauses affected:	⌘ 6.1.3.1.5		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.1.3.1.5 Abnormal cases

The following abnormal cases can be identified:

a) Expiry of timers

In the mobile station:

On the first expiry of the timer T3380, the MS shall resend the ACTIVATE PDP CONTEXT REQUEST and shall reset and restart timer T3380. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3380, the MS shall release all resources possibly allocated for this invocation and shall abort the procedure; no automatic PDP context activation re-attempt shall be performed.

On the network side:

On the first expiry of the timer T3385, the network shall resend the message REQUEST PDP CONTEXT ACTIVATION and shall reset and restart timer T3385. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3385, the network shall release possibly allocated resources for this activation and shall abort the procedure.

b) Collision of MS initiated and network requested PDP context activation

Dynamic PDP address collision case:

If the MS uses dynamic PDP addressing that turns out to collide with the network requested PDP address, then there is no detection of collision specified but left for network implementation.

Static PDP address collision detected within the mobile station:

A collision of an MS initiated and a network requested PDP context activation procedure is identified by the MS if a REQUEST PDP CONTEXT ACTIVATION message is received from the network after the MS has sent an ACTIVATE PDP CONTEXT REQUEST message, and the MS has not yet received an ACTIVATE PDP CONTEXT ACCEPT or ACTIVATE PDP CONTEXT REJECT message.

NOTE: In general, the MS is unable to test if the PDP type, PDP address and APN in the REQUEST PDP CONTEXT ACTIVATION message are the same as those for the PDN to which it is attempting to activate a context. This is because the MS may have omitted one or more of the parameters in the ACTIVATE PDP CONTEXT REQUEST message, since it is relying on default values to be provided by the network.

- In the case of such a collision, the MS initiated PDP context activation shall take precedence over the network requested PDP context activation. If the MS is able to compare the PDP type, PDP address and APN requested in the ACTIVATE PDP CONTEXT REQUEST message with those requested in the REQUEST PDP CONTEXT ACTIVATION message and these parameters are equal, then the MS shall discard the REQUEST PDP CONTEXT ACTIVATION message and shall wait for the network response to its ACTIVATE PDP CONTEXT REQUEST message. If the MS is not able to compare the PDP type, PDP address, and APN requested in the ACTIVATE PDP CONTEXT REQUEST message with those requested in the REQUEST PDP CONTEXT ACTIVATION message, then the MS shall send a REQUEST PDP CONTEXT ACTIVATION REJECT message with the cause 'insufficient resources' to the network, and wait for an ACTIVATE PDP CONTEXT ACCEPT message.

Static PDP address collision detected on the network side:

A collision is detected by the network in the case where the PDP address, PDP type and APN derived (according to 23.060 annex A) from the ACTIVATE PDP CONTEXT REQUEST message received from the MS match those in the REQUEST PDP CONTEXT ACTIVATION message sent to the MS.

- In the case of such a collision, the MS initiated PDP context activation shall take precedence over the network requested PDP context activation. The network shall terminate the network requested PDP context activation procedure, and proceed with the MS initiated PDP context activation procedure

c) MS initiated PDP context activation request for an already activated PDP context (on the network side)

- i) If the network receives a ACTIVATE PDP CONTEXT REQUEST message with the same combination of APN, PDP type and PDP address as an already activated PDP context, the network shall deactivate the

existing PDP context and, if any, all the linked PDP contexts (matching the combination of APN, PDP type and PDP address), locally without notification to the MS and proceed with the requested PDP context activation.

~~Note: — If PDP address of existing PDP context is dynamic and establishment of PDP context using dynamic PDP address is requested for the same APN, it shall be recognised as PDP context duplication since one APN allows only one dynamic PDP address for a PDP Type.~~

- ii) Alternatively (different combination of APN, PDP type and PDP address), if the NSAPI matches that of an already activated PDP context, then the network shall deactivate only the existing PDP context locally without notification to the MS and proceed with the requested PDP context activation.
- d) Network initiated PDP context activation request for an already activated PDP context (on the mobile station side)

If the MS receives a REQUEST PDP CONTEXT ACTIVATION message with the same combination of APN, PDP type and PDP address as an already activated PDP context, the MS shall deactivate the existing PDP context and, if any, all the linked PDP contexts (matching the combination of APN, PDP type and PDP address) locally without notification to the network and proceed with the requested PDP context activation.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 307** ⌘ rev **r2** ⌘ Current version: **3.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification of RAB re-establishment		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 22.11.00
Category:	⌘ F	Release:	⌘ R99
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ The network initiated establishment of a ps-signalling connection via paging and the resulting SERVICE REQUEST with Service Type "PagingResponse" does not necessarily mean that the bearer for activated PDP contexts (if there are any) have to be re-established. The re-establishment is not done when there is only the signalling connection required. This is the case for MT-SMS and Network initiated PDP context request. The 23.060 states in section 6.12.2 Service Request Initiated by Network Procedure: "At this point, the SGSN may perform the authentication procedure. The SGSN knows whether the downlink packet requires RAB establishment (e.g., downlink PDU) or not (e.g., Request PDP Context Activation or MT SMS)." Note: All bearer will be re-established in case of Request PDP Context Activation when the bearer for this new context is assigned. This handling has impact later on when the MS or the network need to transmit user data in PMM-CONNECTED mode if there are active PDP contexts for which the bearer has been released. If the network has pending user data for an active PDP context without radio access bearer in PMM-CONNECTED mode then the network will setup a radio access bearer for each active PDP context.
Summary of change:	⌘
Consequences if not approved:	⌘ Not regarding of situations which can happen when 23.060 is correct implemented. This prevent re-establishment of bearer at least for downlink user data.

Clauses affected:	⌘ 4.7.13.
Other specs	⌘ <input type="checkbox"/> Other core specifications ⌘

affected:

- Test specifications
- O&M Specifications

Other comments: ☒

4.7.13 Service Request procedure (UMTS only)

The purpose of this procedure is to transfer the PMM mode from PMM-IDLE to PMM-CONNECTED mode, and/or to assign radio access bearer in case of PDP contexts are activated without radio access bearer assigned. In latter case, the PMM mode may be PMM-IDLE mode or may alternatively be the PMM-CONNECTED mode if the MS requires radio access bearer re-establishment. This procedure is used for;

- the initiation of CM layer service (e.g. SM or SMS) procedure from the MS in PMM-IDLE mode.
- the network to transfer down link signalling,
- uplink (in PMM-IDLE or PMM CONNECTED) and downlink (only in PMM-IDLE) user ~~packet~~data.

For downlink transfer of signalling or user ~~packet~~data in PMM-IDLE mode, the trigger is given from the network by the paging request procedure, which is out of scope of this specification.

For pending downlink user data in PMM-CONNECTED mode, the re-establishment of radio access bearers for all active PDP contexts is done without paging.

Service type can take either of the following values, "signalling", "data" or "paging response". Each of the values shall be selected according to the criteria to initiate the Service request procedure.

The criteria to invoke the Service request procedure are when;

- a) the MS has any signalling message (e.g. for SM or SMS), that requires security protection, to be sent to the network in PMM-IDLE mode (i.e., no secure PS signalling connection has been established). In this case, the service type shall be set to "signalling".
- b) the MS, either in PMM-IDLE ~~and~~or PMM-CONNECTED mode, has pending user ~~packet~~data to be sent and no radio access bearer is established for the corresponding PDP context. The procedure is initiated by an indication from the lower layers (see TS 24.007). In this case, the service type shall be set to "data".
- c) the MS receives a paging request for PS domain from the network in PMM-IDLE mode. In this case, the service type shall be set to "paging response".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all active PDP contexts are re-established. The selective re-assignment capability is not supported for the simplicity of the function.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 312** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification of response handling of Service Request		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 22.11.00
Category:	⌘ A	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ The decision was taken that security mode control procedure is the only valid positive response on SERVICE REQUEST in PMM-IDLE and SERVICE ACCEPT is the only valid positive response in mode PMM-CONNECTED. The description for MS is clarified as far as the action is concerned which has to be taken after receiving response.
Summary of change:	⌘
Consequences if not approved:	⌘

Clauses affected:	⌘ 4.7.13.3.	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
Other comments:	⌘	

4.7.13 Service Request procedure (UMTS only)

...

4.7.13.3 Service request procedure accepted by the network

If the SERVICE REQUEST message was sent in PMM-IDLE mode, An the indication from the lower layers that the security mode control procedure is completed ~~or reception of a SERVICE ACCEPT message,~~ shall be treated as a successful completion of the procedure. The timer T3317 shall be stopped, and the MS enters GMM-REGISTERED state and PMM-CONNECTED mode.

If the SERVICE REQUEST message was sent in PMM-CONNECTED mode, then the reception of the SERVICE ACCEPT message shall be treated as a successful completion of the procedure. The timer T3317 shall be stopped and the MS remains in PMM-CONNECTED mode.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 313** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification of RAB re-establishment		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 22.11.00
Category:	⌘ A	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ The network initiated establishment of a ps-signalling connection via paging and the resulting SERVICE REQUEST with Service Type "PagingResponse" does not necessarily mean that the bearer for activated PDP contexts (if there are any) have to be re-established. The re-establishment is not done when there is only the signalling connection required. This is the case for MT-SMS and Network initiated PDP context request. The 23.060 states in section 6.12.2 Service Request Initiated by Network Procedure: "At this point, the SGSN may perform the authentication procedure. The SGSN knows whether the downlink packet requires RAB establishment (e.g., downlink PDU) or not (e.g., Request PDP Context Activation or MT SMS)." Note: All bearer will be re-established in case of Request PDP Context Activation when the bearer for this new context is assigned. This handling has impact later on when the MS or the network need to transmit user data in PMM-CONNECTED mode if there are active PDP contexts for which the bearer has been released. If the network has pending user data for an active PDP context without radio access bearer in PMM-CONNECTED mode then the network will setup a radio access bearer for each active PDP context.
Summary of change:	⌘
Consequences if not approved:	⌘ Not regarding of situations which can happen when 23.060 is correct implemented. This prevent re-establishment of bearer at least for downlink user data.

Clauses affected:	⌘ 4.7.13.
Other specs	⌘ <input type="checkbox"/> Other core specifications ⌘

affected:

- Test specifications
- O&M Specifications

Other comments: ☒

4.7.13 Service Request procedure (UMTS only)

The purpose of this procedure is to transfer the PMM mode from PMM-IDLE to PMM-CONNECTED mode, and/or to assign radio access bearer in case of PDP contexts are activated without radio access bearer assigned. In latter case, the PMM mode may be PMM-IDLE mode or may alternatively be the PMM-CONNECTED mode if the MS requires radio access bearer re-establishment. This procedure is used for;

- the initiation of CM layer service (e.g. SM or SMS) procedure from the MS in PMM-IDLE mode.
- the network to transfer down link signalling,
- uplink (in PMM-IDLE or PMM CONNECTED) and downlink (only in PMM-IDLE) user ~~packet~~data.

For downlink transfer of signalling or user ~~packet~~data in PMM-IDLE mode, the trigger is given from the network by the paging request procedure, which is out of scope of this specification.

For pending downlink user data in PMM-CONNECTED mode, the re-establishment of radio access bearers for all active PDP contexts is done without paging.

Service type can take either of the following values, "signalling", "data" or "paging response". Each of the values shall be selected according to the criteria to initiate the Service request procedure.

The criteria to invoke the Service request procedure are when;

- a) the MS has any signalling message (e.g. for SM or SMS), that requires security protection, to be sent to the network in PMM-IDLE mode (i.e., no secure PS signalling connection has been established). In this case, the service type shall be set to "signalling".
- b) the MS, either in PMM-IDLE ~~and~~or PMM-CONNECTED mode, has pending user ~~packet~~data to be sent and no radio access bearer is established for the corresponding PDP context. The procedure is initiated by an indication from the lower layers (see TS 24.007). In this case, the service type shall be set to "data".
- c) the MS receives a paging request for PS domain from the network in PMM-IDLE mode. In this case, the service type shall be set to "paging response".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all active PDP contexts are re-established. The selective re-assignment capability is not supported for the simplicity of the function.

CHANGE REQUEST

⌘ **24.008 CR 314** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ APN used for detection of duplicated PDP context activation		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 23.11.00
Category:	⌘ A	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The combination of APN and PDP address is compared during a PDP context activation against all already activated PDP contexts. If there is a match between the requested PDP context and an already active PDP context then this is an indication, that the MS has the already active PDP context “forgotten”. However, the APN as well as the PDP address run through a selection procedure in SGSN. This procedure is defined in 23.060 annex A.2. It is necessary to state which APN and PDP address is used to find out if there is a “forgotten” PDP context. It is proposed to use the APN provided in the ACTIVATE PDP CONTEXT REQUEST since it is assumed that the selection rules in 23.060 annex A.2 prevent the assignment of the same PDP-address/APN combination when the input are a different PDP-type, PDP-address and APN combinations.
Summary of change:	⌘ Use APN before application of selection rules for error detection
Consequences if not approved:	⌘ Different interpretation of the standard would possibly result in different behaviour during PDP context activation.

Clauses affected:	⌘ 6.1.3.1.5		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

6.1.3.1.4 Unsuccessful PDP context activation requested by the network

Upon receipt of the REQUEST PDP CONTEXT ACTIVATION message, the MS may reject the network requested PDP context activation by sending the REQUEST PDP CONTEXT ACTIVATION REJECT message to the network. The message contains the same TI as included in the REQUEST PDP CONTEXT ACTIVATION and an additional cause code that typically indicates one of the following causes:

- # 26: insufficient resources;
- # 31: activation rejected, unspecified;
- # 40: feature not supported; or
- # 95 - 111: protocol errors.

The network shall stop timer T3385 and enter state PDP-INACTIVE.

6.1.3.1.5 Abnormal cases

The following abnormal cases can be identified:

a) Expiry of timers

In the mobile station:

On the first expiry of the timer T3380, the MS shall resend the ACTIVATE PDP CONTEXT REQUEST and shall reset and restart timer T3380. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3380, the MS shall release all resources possibly allocated for this invocation and shall abort the procedure; no automatic PDP context activation re-attempt shall be performed.

On the network side:

On the first expiry of the timer T3385, the network shall resend the message REQUEST PDP CONTEXT ACTIVATION and shall reset and restart timer T3385. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3385, the network shall release possibly allocated resources for this activation and shall abort the procedure.

b) Collision of MS initiated and network requested PDP context activation

Dynamic PDP address collision case:

If the MS uses dynamic PDP addressing that turns out to collide with the network requested PDP address, then there is no detection of collision specified but left for network implementation.

Static PDP address collision detected within the mobile station:

A collision of an MS initiated and a network requested PDP context activation procedure is identified by the MS if a REQUEST PDP CONTEXT ACTIVATION message is received from the network after the MS has sent an ACTIVATE PDP CONTEXT REQUEST message, and the MS has not yet received an ACTIVATE PDP CONTEXT ACCEPT or ACTIVATE PDP CONTEXT REJECT message.

NOTE: In general, the MS is unable to test if the PDP type, PDP address and APN in the REQUEST PDP CONTEXT ACTIVATION message are the same as those for the PDN to which it is attempting to activate a context. This is because the MS may have omitted one or more of the parameters in the ACTIVATE PDP CONTEXT REQUEST message, since it is relying on default values to be provided by the network.

- In the case of such a collision, the MS initiated PDP context activation shall take precedence over the network requested PDP context activation. If the MS is able to compare the PDP type, PDP address and APN requested in the ACTIVATE PDP CONTEXT REQUEST message with those requested in the REQUEST PDP CONTEXT ACTIVATION message and these parameters are equal, then the MS shall discard the REQUEST PDP CONTEXT ACTIVATION message and shall wait for the network response to its ACTIVATE PDP CONTEXT REQUEST message. If the MS is not able to compare the PDP type, PDP address, and APN requested in the ACTIVATE PDP CONTEXT REQUEST message with those requested in the REQUEST PDP CONTEXT ACTIVATION message, then the MS shall send a REQUEST PDP

CONTEXT ACTIVATION REJECT message with the cause 'insufficient resources' to the network, and wait for an ACTIVATE PDP CONTEXT ACCEPT message.

Static PDP address collision detected on the network side:

A collision is detected by the network in the case where the PDP address, PDP type and APN derived (according to 23.060 annex A) from the ACTIVATE PDP CONTEXT REQUEST message received from the MS match those in the REQUEST PDP CONTEXT ACTIVATION message sent to the MS.

- In the case of such a collision, the MS initiated PDP context activation shall take precedence over the network requested PDP context activation. The network shall terminate the network requested PDP context activation procedure, and proceed with the MS initiated PDP context activation procedure

c) MS initiated PDP context activation request for an already activated PDP context (on the network side)

- i) If the network receives a ACTIVATE PDP CONTEXT REQUEST message with the same combination of APN, PDP type and PDP address as an already activated PDP context, the network shall deactivate the existing PDP context and, if any, all the linked PDP contexts (matching the combination of APN, PDP type and PDP address), locally without notification to the MS and proceed with the requested PDP context activation.

Note: If PDP address of existing PDP context is dynamic and establishment of PDP context using dynamic PDP address is requested for the same APN, it shall be recognised as PDP context duplication since one APN allows only one dynamic PDP address for a PDP Type.

- ii) Alternatively (different combination of APN, PDP type and PDP address), if the NSAPI matches that of an already activated PDP context, then the network shall deactivate only the existing PDP context locally without notification to the MS and proceed with the requested PDP context activation.

It is an implementation option if the parameters used for comparison described in clause i) and ii) are the parameters provided in the (current and previous) ACTIVATE PDP CONTEXT REQUESTs or the parameters which are the result of the application of the selection rules defined in TS23.060 Annex A.2.

The parameter provided in the current ACTIVATE PDP CONTEXT REQUEST can not be compared to the actually used parameters (result of application of selection rules defined in TS23.060 Annex A.2) of the previously activated PDP contexts.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 319** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of PDP context duplication handling		
Source:	⌘ Fujitsu		
Work item code:	⌘ GPRS	Date:	⌘ 23/Nov/2000
Category:	⌘ A Critical correction	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ According to the 23.060, a template of PDP context using dynamic PDP address allows to establish more than one PDP context based on the template. But current text in 24.008 does not allow the case because the network recognizes the case as an illegal case. The mismatch shall be corrected updating 24.008 to be in line with 23.060.
Summary of change:	⌘ The duplication check shall be skipped with regard to the dynamic PDP address.
Consequences if not approved:	⌘ More than one PDP context to an APN using dynamic PDP address is not allowed.

Clauses affected:	⌘ 6.1.3.1.5		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.1.3.1.5 Abnormal cases

The following abnormal cases can be identified:

a) Expiry of timers

In the mobile station:

On the first expiry of the timer T3380, the MS shall resend the ACTIVATE PDP CONTEXT REQUEST and shall reset and restart timer T3380. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3380, the MS shall release all resources possibly allocated for this invocation and shall abort the procedure; no automatic PDP context activation re-attempt shall be performed.

On the network side:

On the first expiry of the timer T3385, the network shall resend the message REQUEST PDP CONTEXT ACTIVATION and shall reset and restart timer T3385. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3385, the network shall release possibly allocated resources for this activation and shall abort the procedure.

b) Collision of MS initiated and network requested PDP context activation

Dynamic PDP address collision case:

If the MS uses dynamic PDP addressing that turns out to collide with the network requested PDP address, then there is no detection of collision specified but left for network implementation.

Static PDP address collision detected within the mobile station:

A collision of an MS initiated and a network requested PDP context activation procedure is identified by the MS if a REQUEST PDP CONTEXT ACTIVATION message is received from the network after the MS has sent an ACTIVATE PDP CONTEXT REQUEST message, and the MS has not yet received an ACTIVATE PDP CONTEXT ACCEPT or ACTIVATE PDP CONTEXT REJECT message.

NOTE: In general, the MS is unable to test if the PDP type, PDP address and APN in the REQUEST PDP CONTEXT ACTIVATION message are the same as those for the PDN to which it is attempting to activate a context. This is because the MS may have omitted one or more of the parameters in the ACTIVATE PDP CONTEXT REQUEST message, since it is relying on default values to be provided by the network.

- In the case of such a collision, the MS initiated PDP context activation shall take precedence over the network requested PDP context activation. If the MS is able to compare the PDP type, PDP address and APN requested in the ACTIVATE PDP CONTEXT REQUEST message with those requested in the REQUEST PDP CONTEXT ACTIVATION message and these parameters are equal, then the MS shall discard the REQUEST PDP CONTEXT ACTIVATION message and shall wait for the network response to its ACTIVATE PDP CONTEXT REQUEST message. If the MS is not able to compare the PDP type, PDP address, and APN requested in the ACTIVATE PDP CONTEXT REQUEST message with those requested in the REQUEST PDP CONTEXT ACTIVATION message, then the MS shall send a REQUEST PDP CONTEXT ACTIVATION REJECT message with the cause 'insufficient resources' to the network, and wait for an ACTIVATE PDP CONTEXT ACCEPT message.

Static PDP address collision detected on the network side:

A collision is detected by the network in the case where the PDP address, PDP type and APN derived (according to 23.060 annex A) from the ACTIVATE PDP CONTEXT REQUEST message received from the MS match those in the REQUEST PDP CONTEXT ACTIVATION message sent to the MS.

- In the case of such a collision, the MS initiated PDP context activation shall take precedence over the network requested PDP context activation. The network shall terminate the network requested PDP context activation procedure, and proceed with the MS initiated PDP context activation procedure

c) MS initiated PDP context activation request for an already activated PDP context (on the network side)

- i) If the network receives a ACTIVATE PDP CONTEXT REQUEST message with the same combination of APN, PDP type and PDP address as an already activated PDP context, the network shall deactivate the

existing PDP context and, if any, all the linked PDP contexts (matching the combination of APN, PDP type and PDP address), locally without notification to the MS and proceed with the requested PDP context activation.

~~Note: — If PDP address of existing PDP context is dynamic and establishment of PDP context using dynamic PDP address is requested for the same APN, it shall be recognised as PDP context duplication since one APN allows only one dynamic PDP address for a PDP Type.~~

- ii) Alternatively (different combination of APN, PDP type and PDP address), if the NSAPI matches that of an already activated PDP context, then the network shall deactivate only the existing PDP context locally without notification to the MS and proceed with the requested PDP context activation.
- d) Network initiated PDP context activation request for an already activated PDP context (on the mobile station side)

If the MS receives a REQUEST PDP CONTEXT ACTIVATION message with the same combination of APN, PDP type and PDP address as an already activated PDP context, the MS shall deactivate the existing PDP context and, if any, all the linked PDP contexts (matching the combination of APN, PDP type and PDP address) locally without notification to the network and proceed with the requested PDP context activation.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 320** ⌘ rev **-** ⌘ Current version: **3.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ DRX parameter range correction		
Source:	⌘ Fujitsu		
Work item code:	⌘ GPRS	Date:	⌘ 23/Nov/2000
Category:	⌘ F Critical correction	Release:	⌘ R99
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ The range of CN specific DRX cycle length is updated from 2 – 12 to 6 – 9 in 25.331 and 25.413. This CR is for the alinment of the specifications.
Summary of change:	⌘ CN specific DRX cycle length is updated from 2 – 12 to 6 – 9.
Consequences if not approved:	⌘ An MS might indicate the DRX cycle length value that may not be supported by UTRAN, and the network cannot page the MS correctly.

Clauses affected:	⌘ 10.5.5.6		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

10.5.5.6 DRX parameter

The purpose of the *DRX parameter* information element is to indicate whether the MS uses DRX mode or not.

The *DRX parameter* is a type 3 information element with a length of 3 octets.

The value part of a *DRX parameter* information element is coded as shown in table 10.5.139/TS 24.008.

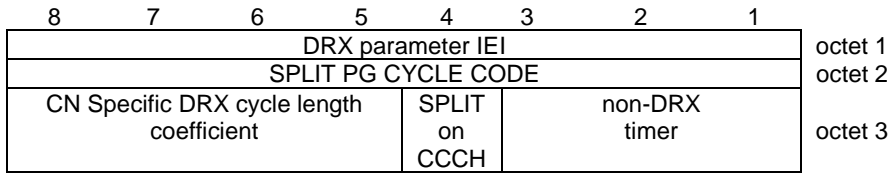


Figure 10.5.122/TS 24.008: DRX parameter information element

Table 10.5.139/TS 24.008: DRX parameter information element

SPLIT PG CYCLE CODE, octet 2	
The octet contains the binary coded value of the SPLIT PG CYCLE CODE. The SPLIT PG CYCLE value is derived from the SPLIT PG CYCLE CODE as follows:	
0	704 (equivalent to no DRX)
1 to 64	1 to 64, respectively
65	71
66	72
67	74
68	75
69	77
70	79
71	80
72	83
73	86
74	88
75	90
76	92
77	96
78	101
79	103
80	107
81	112
82	116
83	118
84	128
85	141
86	144
87	150
88	160
89	171
90	176
91	192
92	214
93	224
94	235
95	256
96	288
97	320
98	352

All other values are reserved and shall be interpreted as 1 by this version of the protocol.

SPLIT on CCCH, octet 3 (bit 4)

0	Split pg cycle on CCCH is not supported by the mobile station
1	Split pg cycle on CCCH is supported by the mobile station

non-DRX timer, octet 3

bit

3 2 1

0 0 0	no non-DRX mode after transfer state
0 0 1	max. 1 sec non-DRX mode after transfer state
0 1 0	max. 2 sec non-DRX mode after transfer state
0 1 1	max. 4 sec non-DRX mode after transfer state
1 0 0	max. 8 sec non-DRX mode after transfer state
1 0 1	max. 16 sec non-DRX mode after transfer state
1 1 0	max. 32 sec non-DRX mode after transfer state
1 1 1	max. 64 sec non-DRX mode after transfer state

CN Specific DRX cycle length coefficient, octet 3

bit

8 7 6 5 UMTS specific

0 0 0 0	CN Specific DRX cycle length coefficient not specified by the MS, ie. the system information value 'CN domain specific DRX cycle length' is used. (Ref TS 25.331)
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0 0 1 0	CN Specific DRX cycle length coefficient 2
0 0 1 1	CN Specific DRX cycle length coefficient 3
0 1 0 0	CN Specific DRX cycle length coefficient 4
0 1 0 1	CN Specific DRX cycle length coefficient 5
0 1 1 0	CN Specific DRX cycle length coefficient 6
0 1 1 1	CN Specific DRX cycle length coefficient 7
1 0 0 0	CN Specific DRX cycle length coefficient 8
1 0 0 1	CN Specific DRX cycle length coefficient 9
1 0 1 0	CN Specific DRX cycle length coefficient 10
1 0 1 1	CN Specific DRX cycle length coefficient 11
1 1 0 0	CN Specific DRX cycle length coefficient 12

All other values shall be interpreted as "CN Specific DRX cycle length coefficient not specified by the MS " by this version of the protocol.

Note: In UMTS this field (octet 3 bits 8 to 5) is used, but was spare in earlier versions of this protocol.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 321** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ DRX parameter range correction		
Source:	⌘ Fujitsu		
Work item code:	⌘ GPRS	Date:	⌘ 23/Nov/2000
Category:	⌘ A Critical correction	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ The range of CN specific DRX cycle length is updated from 2 – 12 to 6 – 9 in 25.331 and 25.413. This CR is for the alinment of the specifications.
Summary of change:	⌘ CN specific DRX cycle length is updated from 2 – 12 to 6 – 9.
Consequences if not approved:	⌘ An MS might indicate the DRX cycle length value that may not be supported by UTRAN, and the network cannot page the MS correctly.

Clauses affected:	⌘ 10.5.5.6		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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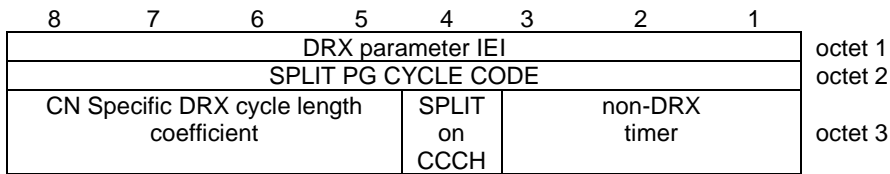


Figure 10.5.122/TS 24.008: DRX parameter information element

Table 10.5.139/TS 24.008: DRX parameter information element

SPLIT PG CYCLE CODE, octet 2	
The octet contains the binary coded value of the SPLIT PG CYCLE CODE. The SPLIT PG CYCLE value is derived from the SPLIT PG CYCLE CODE as follows:	
0	704 (equivalent to no DRX)
1 to 64	1 to 64, respectively
65	71
66	72
67	74
68	75
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70	79
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74	88
75	90
76	92
77	96
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79	103
80	107
81	112
82	116
83	118
84	128
85	141
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87	150
88	160
89	171
90	176
91	192
92	214
93	224
94	235
95	256
96	288
97	320
98	352

All other values are reserved and shall be interpreted as 1 by this version of the protocol.

SPLIT on CCCH, octet 3 (bit 4)

0	Split pg cycle on CCCH is not supported by the mobile station
1	Split pg cycle on CCCH is supported by the mobile station

non-DRX timer, octet 3

bit

3 2 1

0 0 0	no non-DRX mode after transfer state
0 0 1	max. 1 sec non-DRX mode after transfer state
0 1 0	max. 2 sec non-DRX mode after transfer state
0 1 1	max. 4 sec non-DRX mode after transfer state
1 0 0	max. 8 sec non-DRX mode after transfer state
1 0 1	max. 16 sec non-DRX mode after transfer state
1 1 0	max. 32 sec non-DRX mode after transfer state
1 1 1	max. 64 sec non-DRX mode after transfer state

CN Specific DRX cycle length coefficient, octet 3

bit

8 7 6 5 UMTS specific

0 0 0 0	CN Specific DRX cycle length coefficient not specified by the MS, ie. the system information value 'CN domain specific DRX cycle length' is used. (Ref TS 25.331)
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0 0 4 0	CN Specific DRX cycle length coefficient 2
0 0 4 4	CN Specific DRX cycle length coefficient 3
0 4 0 0	CN Specific DRX cycle length coefficient 4
0 4 0 4	CN Specific DRX cycle length coefficient 5
0 1 1 0	CN Specific DRX cycle length coefficient 6
0 1 1 1	CN Specific DRX cycle length coefficient 7
1 0 0 0	CN Specific DRX cycle length coefficient 8
1 0 0 1	CN Specific DRX cycle length coefficient 9
4 0 4 0	CN Specific DRX cycle length coefficient 10
4 0 4 4	CN Specific DRX cycle length coefficient 11
4 4 0 0	CN Specific DRX cycle length coefficient 12

All other values shall be interpreted as "CN Specific DRX cycle length coefficient not specified by the MS " by this version of the protocol.

Note: In UMTS this field (octet 3 bits 8 to 5) is used, but was spare in earlier versions of this protocol.

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 269** ⌘ rev **r2** ⌘ Current version: **3.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Unsynchronized PDP contexts handling – MS less		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 22.11.00
Category:	⌘ F	Release:	⌘ R99
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ The MS and the core network may have a different view on what PDP contexts are in state PDP-ACTIVE. This problem is likely to happen due to break in radio connection and should be solved during re-establishment. Please see document N1-001364 for complete description of the situation and the proposal to solve the problem.
Summary of change:	⌘ Section 4.7.13. and 4.7.13.6
Consequences if not approved:	⌘ The MS has less active PDP contexts then the network which leads to the situation that the network sends data towards the MS (over an existing radio bearer) which then discarded on MS side.

Clauses affected:	⌘	
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
Other comments:	⌘	

4.7.13 Service Request procedure (UMTS only)

The purpose of this procedure is to transfer the PMM mode from PMM-IDLE to PMM-CONNECTED mode, and/or to assign radio access bearer in case of PDP contexts are activated without radio access bearer assigned. In latter case, the PMM mode may be PMM-IDLE or PMM-CONNECTED mode. This procedure is used for;

- the initiation of CM layer service (e.g. SM or SMS) procedure from the MS in PMM-IDLE mode.
- the network to transfer down link signalling,
- uplink and downlink user packet.

For downlink transfer of signalling or user packet, the trigger is given from the network by the paging request procedure, which is out of scope of this specification.

Service type can take either of the following values, "signalling", "data" or "paging response". Each of the values shall be selected according to the criteria to initiate the Service request procedure.

The criteria to invoke the Service request procedure are when;

- a) the MS has any signalling message, that requires security protection, to be sent to the network in PMM-IDLE mode (i.e., no secure PS signalling connection has been established). In this case, the service type shall be set to "signalling".
- b) the MS, either in PMM-IDLE and PMM-CONNECTED mode, has pending user packet to be sent and no radio access bearer is established for the PDP context. The procedure is initiated by an indication from the lower layers (see TS 24.007). In this case, the service type shall be set to "data".
- c) the MS receives a paging request for PS domain from the network in PMM-IDLE mode. In this case, the service type shall be set to "paging response".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all the activated PDP contexts are re-established. The selective re-assignment capability is not supported for the simplicity of the function.

If the network tries to re-establish radio access bearers for which no active PDP contexts exists, then the MS shall request advice the lower layer to reject the setup of all radio access bearers. The reject message has to include the indication of which of the PDP contexts are still active (NSAPI in SM corresponds to RAB-ID in RRC) and the reject cause has to indicate "unsynchronousPDP".

The network shall retry the re-establishment of those radio access bearers for which a corresponding active PDP context exists when the MS did reject the previous re-establishment with the cause indicating "unsynchronousPDP". The indication of which PDP contexts are still active is delivered by the MS in the reject message.

Th network shall deactivate all those PDP contexts locally, which have not been indicated as still active by the MS during the procedure described in the two paragraphs above.

<p>***** Next change *****</p>

4.7.13.6 Abnormal cases on the network side

The following abnormal cases can be identified:

- a) Lower layer failure

If a low layer failure occurs before the security mode control procedure is completed, a SERVICE ACCEPT or SERVICE REJECT message has been sent to the MS, the network enters/stays in PMM-IDLE.

- b) Protocol error

If the SERVICE REQUEST message is received with a protocol error, the network shall return a SERVICE REJECT message with one of the following reject causes:

- #96: Mandatory information element error;
- #99: Information element non-existent or not implemented;
- #100: Conditional IE error;
- #111: Protocol error, unspecified.

The network stays in PMM-IDLE mode.

- c.) More than one SERVICE REQUEST received and the procedure has not been completed (i.e., the security mode control procedure has not been completed or SERVICE ACCEPT, SERVICE REJECT message has not been sent),
 - If one or more of the information elements in the SERVICE REQUEST message differs from the ones received within the previous SERVICE REQUEST message, the previously initiated Service request procedure shall be aborted and the new Service request procedure shall be progressed ;
 - If the information elements do not differ, then the network shall continue with the previous Service request procedure and shall not treat any further this SERVICE REQUEST message.
- d) ATTACH REQUEST received before the security mode control procedure has been completed or an SERVICE ACCEPT or an SERVICE REJECT message has been sent.

If an ATTACH REQUEST message is received and the security mode control procedure has not been completed or an SERVICE ACCEPT or an SERVICE REJECT message has not been sent, the network may initiate the GMM common procedures, e.g. the GMM authentication and ciphering procedure. The network may e.g. after a successful GMM authentication and ciphering procedure execution, abort the Service request procedure, the GMM context and PDP contexts, if any, are deleted and the new ATTACH REQUEST is progressed.

- e) ROUTING AREA UPDATE REQUEST message received before the security mode control procedure has been completed or an SERVICE ACCEPT or an SERVICE REJECT message has been sent

If an ROUTING AREA UPDATE REQUEST message is received and the security mode control procedure has not been completed or an SERVICE ACCEPT or an SERVICE REJECT message has not been sent, the network may initiate the GMM common procedures, e.g. the GMM authentication and ciphering procedure. The network may e.g. after a successful GMM authentication and ciphering procedure execution, abort the Service request procedure and progress the routing area update procedure.
- f) If the Service Type indicates 'data' and the network fails to re-establish some or all RAB(s) then the SGSN may determine if PDP Context Modification or PDP Context Deactivation should be initiated. The appropriate action depends on the QoS profile of the PDP Context and is an operator choice.
- g) If the Service Type indicates 'data' and the network fails to re-establish some or all radio access bearers then the network (initiated by SGSN) shall deactivate all those PDP contexts locally for which the cause is indicating "unsynchronousPDP".

CR-Form-v3

CHANGE REQUEST

⌘ **24.008 CR 315** ⌘ rev **r1** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Unsynchronized PDP contexts handling – MS less		
Source:	⌘ Siemens AG		
Work item code:	⌘ GPRS	Date:	⌘ 24.11.00
Category:	⌘ A	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ The MS and the core network may have a different view on what PDP contexts are in state PDP-ACTIVE. This problem is likely to happen due to break in radio connection and should be solved during re-establishment. Please see document N1-001364 for complete description of the situation and the proposal to solve the problem.
Summary of change:	⌘ Section 4.7.13. and 4.7.13.6
Consequences if not approved:	⌘ The MS has less active PDP contexts then the network which leads to the situation that the network sends data towards the MS (over an existing radio bearer) which then discarded on MS side.

Clauses affected:	⌘	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
Other comments:	⌘	

4.7.13 Service Request procedure (UMTS only)

The purpose of this procedure is to transfer the PMM mode from PMM-IDLE to PMM-CONNECTED mode, and/or to assign radio access bearer in case of PDP contexts are activated without radio access bearer assigned. In latter case, the PMM mode may be PMM-IDLE or PMM-CONNECTED mode. This procedure is used for;

- the initiation of CM layer service (e.g. SM or SMS) procedure from the MS in PMM-IDLE mode.
- the network to transfer down link signalling,
- uplink and downlink user packet.

For downlink transfer of signalling or user packet, the trigger is given from the network by the paging request procedure, which is out of scope of this specification.

Service type can take either of the following values, "signalling", "data" or "paging response". Each of the values shall be selected according to the criteria to initiate the Service request procedure.

The criteria to invoke the Service request procedure are when;

- a) the MS has any signalling message, that requires security protection, to be sent to the network in PMM-IDLE mode (i.e., no secure PS signalling connection has been established). In this case, the service type shall be set to "signalling".
- b) the MS, either in PMM-IDLE and PMM-CONNECTED mode, has pending user packet to be sent and no radio access bearer is established for the PDP context. The procedure is initiated by an indication from the lower layers (see TS 24.007). In this case, the service type shall be set to "data".
- c) the MS receives a paging request for PS domain from the network in PMM-IDLE mode. In this case, the service type shall be set to "paging response".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all the activated PDP contexts are re-established. The selective re-assignment capability is not supported for the simplicity of the function.

If the network tries to re-establish radio access bearers for which no active PDP contexts exists, then the MS shall request advice the lower layer to reject the setup of all radio access bearers. The reject message has to include the indication of which of the PDP contexts are still active (NSAPI in SM corresponds to RAB-ID in RRC) and the reject cause has to indicate "unsynchronousPDP".

The network shall retry the re-establishment of those radio access bearers for which a corresponding active PDP context exists when the MS did reject the previous re-establishment with the cause indicating "unsynchronousPDP". The indication of which PDP contexts are still active is delivered by the MS in the reject message.

Th network shall deactivate all those PDP contexts locally, which have not been indicated as still active by the MS during the procedure described in the two paragraphs above.

***** Next change *****

4.7.13.6 Abnormal cases on the network side

The following abnormal cases can be identified:

- a) Lower layer failure

If a low layer failure occurs before the security mode control procedure is completed, a SERVICE ACCEPT or SERVICE REJECT message has been sent to the MS, the network enters/stays in PMM-IDLE.

- b) Protocol error

If the SERVICE REQUEST message is received with a protocol error, the network shall return a SERVICE REJECT message with one of the following reject causes:

- #96: Mandatory information element error;
- #99: Information element non-existent or not implemented;
- #100: Conditional IE error;
- #111: Protocol error, unspecified.

The network stays in PMM-IDLE mode.

- c.) More than one SERVICE REQUEST received and the procedure has not been completed (i.e., the security mode control procedure has not been completed or SERVICE ACCEPT, SERVICE REJECT message has not been sent),
 - If one or more of the information elements in the SERVICE REQUEST message differs from the ones received within the previous SERVICE REQUEST message, the previously initiated Service request procedure shall be aborted and the new Service request procedure shall be progressed ;
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If an ROUTING AREA UPDATE REQUEST message is received and the security mode control procedure has not been completed or an SERVICE ACCEPT or an SERVICE REJECT message has not been sent, the network may initiate the GMM common procedures, e.g. the GMM authentication and ciphering procedure. The network may e.g. after a successful GMM authentication and ciphering procedure execution, abort the Service request procedure and progress the routing area update procedure.
- f) If the Service Type indicates 'data' and the network fails to re-establish some or all RAB(s) then the SGSN may determine if PDP Context Modification or PDP Context Deactivation should be initiated. The appropriate action depends on the QoS profile of the PDP Context and is an operator choice.
- g) If the Service Type indicates 'data' and the network fails to re-establish some or all radio access bearers then the network (initiated by SGSN) shall deactivate all those PDP contexts locally for which the cause is indicating "unsynchronousPDP".