

Source: TSG CN WG 1
Title: CRs to Rel-6 on Work Item TEI6 towards 24.008, 24.011 and 44.065
Agenda item: 9.18
Document for: APPROVAL

Introduction:

This document contains 4 CRs, **Rel-6 to Work Item "TEI6"**, that have been agreed by **TSG CN WG1 in CN1#31 meeting**, and are forwarded to TSG CN Plenary meeting #21 for approval.

TDoc #	Tdoc Title	Spec	CR #	Rev	CAT	C_Version	Rel
N1-031056	Source of the CS domain specific system information	24.008	798		F	6.1.0	Rel-6
N1-031321	Signaling connection release after GMM procedure	24.008	799	1	F	6.1.0	Rel-6
N1-031325	Unspecified SAPI value in RANAP message for MT SMS (Iu interface only)	24.011	031		F	5.2.0	Rel-6
N1-031283	Corrections on Compression details	44.065	008	1	F	6.0.0	Rel-6

CHANGE REQUEST

⌘ **44.065 CR 008** ⌘ rev **1** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps ⌘ ME Radio Access Network Core Network

Title:	⌘ Corrections on compression details		
Source:	⌘ Nortel Networks		
Work item code:	⌘ TEI6	Date:	⌘ 15/08/2003
Category:	⌘ F	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories: F (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) Rel-6 (Release 6)

Reason for change:	⌘ In CR 005, the handling of multiple compression types for a session was changed, but the CR failed to update Figure 8 that now shows invalid compression usage. Two compression parameter tables list invalid length values. The definition of MAX_CID is not correct. It states that MAX_CID is the 'maximum number of context identifiers', but it really is the maximum value for a context identifier. Two different tables use the same table number 8.
Summary of change:	⌘ The CR proposes the following changes: - Update Length values in Table 8 and 7c. - Change Table 8 to Table 10 - Update MAX_CID definition - Update Figure 8 - Remove the option for several protocol control information compression entities and data compression entities in bullets in clause 6.10
Consequences if not approved:	⌘ Confusion over the valid compression values and compression usage could cause interoperability problems among various manufacturers.

Clauses affected:	⌘ 6.5.4.1, 6.5.4.1.2, Figure 8, Table 7c, 6.10								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N	⌘	X	⌘	X	⌘	X
Y	N								
⌘	X								
⌘	X								
⌘	X								

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.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://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 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.

6.5.4.1 Parameters

Table 108 contains the parameters defined for a compression entity using ROHC. They may be negotiated during SNDCP XID negotiation.

Table 108: Robust Header Compression (ROHC) parameters

Algorithm Name	Algorithm Type	Length	Parameter Name	Format	Range	Sense of Negotiation	Default Value
ROHC	2	0, 2, 4, 6, 8, 8+n*2 if P bit is 0, 2, 4, 6, 8, 10, 11, 3, 5, 7, 9, 9+n*2 if P bit is 1. (where n is the number of profiles, the max. number of profiles is 16)	Applicable NSAPIs	bbbbbbbb bbb00000	0, 32, 64, ... , 65504	down (each bit separately)	0
			MAX_CID	00bbbbbb bbbbbbbb	0-16383	down	15
			MAX_HEADER	00000000 bbbbbbbb	60-255	down	168
			MRRU	bbbbbbbb bbbbbbbb	0-65535	down	0
			PROFILE 1	bbbbbbbb bbbbbbbb	0-65535	(see 6.5.4.1.5)	0
			PROFILE 2	bbbbbbbb bbbbbbbb	0-65535	(see 6.5.4.1.5)	0
		
			PROFILE 16	bbbbbbbb bbbbbbbb	0-65535	(see 6.5.4.1.5)	0

6.5.4.1.1 Applicable NSAPIs

See subclause 7.1.3.

6.5.4.1.2 MAX_CID

The MAX_CID parameter indicates the maximum [context ID number the compressor is allowed to use. A MAX_CID value of N means CID values of 0 through N are valid. Thus, the number of contexts allowed is N+1, e.g. MAX_CID of 15 means 16 contexts are allowed.](#) ~~number of context identifiers. A value N means N+1 context, e.g. 0 means 1 context.~~

6.5.4.1.3 MAX_HEADER

The MAX_HEADER parameter indicates the maximum number of octets of the protocol control information that may be compressed.

6.5.4.1.4 MRRU

If ROHC segmentation is used, the maximum reconstructed reception unit (MRRU) indicates the number of octets that the decompressor is expected to reassemble from the segments. If MRRU is negotiated to 0, ROHC segmentation is disabled.

6.5.4.1.5 PROFILE

The PROFILE parameter indicates the profile identifier. A list of up to 16 PROFILES, indicating which ROHC profiles [14] are supported may be included. The negotiated list which is used for compression consists of the list of profiles supported by both peer entities, reduced to include at most ONE profile identifier with the same 8-bit LSB part. If both peer entities support more than one profile with the same 8-bit LSB part in its profile identifier, the set of these profiles shall be reduced to the profile with the highest MSB-value in its profile identifier.

Note: The reason for this is that the 8-bit MSB part of the profile identifier indicates the "variant" of the profile, and since only the 8-bit LSB part is sent in compressed headers, the set of available profiles must not include two profiles with the same 8-bit LSB part of the profile identifier.

6.5.4.2 Assignment of PCOMP values for ROHC

As opposed to other header compression schemes, the whole ROHC framework has only one packet type that has to be identified by the PDU format, and this packet type can be used by any ROHC compression profile. However, ROHC has two different context identification (CID) sizes. To avoid having to negotiate and potentially re-negotiate CID size, the mechanism from ROHC-over-PPP [13] is adopted in SNDTCP, i.e. as shown in table 9, two packet types are defined for ROHC, one for small and one for large CIDs.

This implies that all CIDs within one ROHC packet shall be of the same size as indicated by the PID value, either small or large. In particular, embedded feedback shall have a CID of the same size as indicated by the PID value. For piggybacking feedback, a compressor must be able to control the feedback CID size used by the associated decompressor, ensure that all CIDs are of the same size, and indicate this size with the appropriate PID value. To make CID interpretation unambiguous when ROHC segmentation is used, all packets that contribute to a segment shall be sent with the same PID value, either PCOMP1 or PCOMP2, which then also applies to the CID size in the reconstructed unit. A unit reconstructed out of packets with PID values that differ shall be discarded.

Table 9: PCOMP values assigned to Robust Header Compression (ROHC)

PID value	Packet type
PCOMP1	ROHC small-CIDs
PCOMP2	ROHC large-CIDs

6.5.4.3 Error Recovery and other feedback

ROHC has built-in robustness mechanisms to avoid error events, as well as error recovery mechanisms using decompressor to compressor feedback. Such ROHC feedback is carried according to alternative 6) in section 5.2.1 of RFC 3095 [12].

6.6 Data compression

Data compression is an optional SNDTCP feature. Data compression applies to both SN-DATA and SN-UNITDATA primitives.

Data compression, if used, shall be performed on the entire N-PDU, including the possibly compressed protocol control information.

Figure 8 shows an example how the SNDTCP functions may be used. Several NSAPIs may use a common data compression entity, i.e. the same compression algorithm and the same dictionary. Separate data compression entities shall be used for acknowledged (SN-DATA) and unacknowledged (SN-UNITDATA) data transfer. Several NSAPIs may be associated with one SAPI, i.e. they may use the same QoS profile.

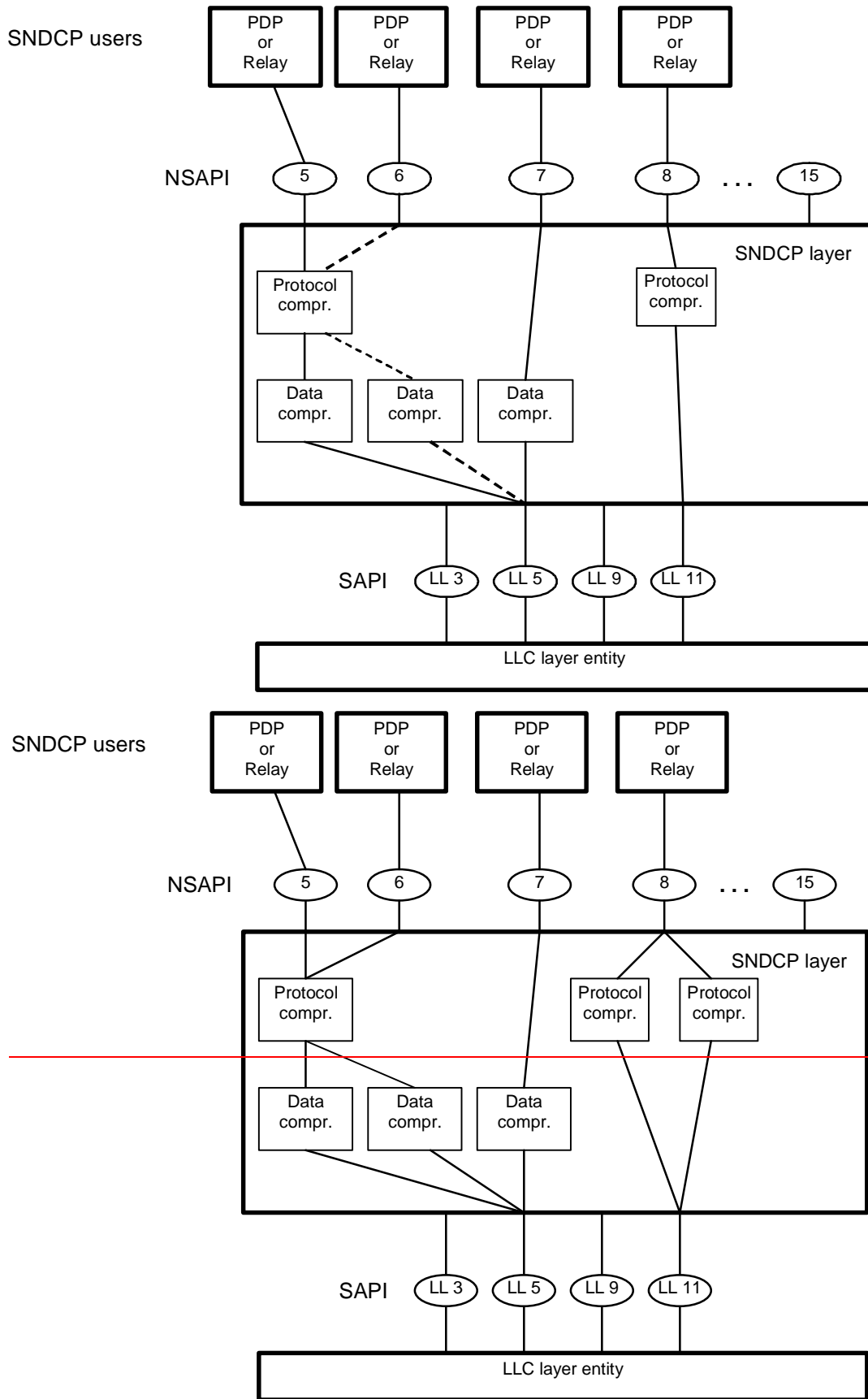


Figure 8: An example for the usage of NSAPIs, SNDCP functions, and SAPIs

6.6.3 Management of V.44 data compression

ITU-T Recommendation V.44 data compression, as described in [11], may be used with SN-DATA primitives and SN-UNITDATA primitives. Annex B of ITU-T Recommendation V.44 describes two methods of implementation and operation of V.44 in packet networks: Packet Method and Multi-Packet Method. Multi-Packet Method is a superset of Packet Method and an MS or SGSN that supports Multi-Packet Method must also support Packet Method.

6.6.3.1 Parameters

Table 7c contains the parameters defined for a compression entity using V.44 data compression. They may be negotiated during SDCP XID negotiation. During V.44 data compression negotiation, unless both the MS and SGSN support Multi-Packet Method, Packet Method is used. Parameter C_0 indicates support of Packet Method (1000000) or both methods (11000000).

NOTE 1: V.44 data compression negotiation is not required. If V.44 is selected and no compression parameters are specified, then Packet Method with defaults as defined in subclauses 6.6.3.1.4 and 6.6.3.1.5 and in [11] annex B, clause B.1.2, is used.

Table 7c: V.44 data compression parameters

Algorithm Name	Algorithm Type	Length	Parameters				
			Parameter Name	Format	Range	Sense of Negotiation	Default Value
V.44	1	0, 2, 3, 4 , 6 , 8 , 10 , or 12 if P bit is 0, 1 , 3 , 4 , 5 , 7 , 9 , 11 , or 13 if P bit is 1, 5 or 6	Applicable NSAPIs	bbbbbbbbb bbb00000	0, 32, 64, ... , 65504	down (each bit separately)	0
			C_0	bb000000	10000000 or 11000000	11000000 down to 10000000	10000000
			P_0	000000bb	0 through 3	down (each direction separately)	3
			P_{1T}	bbbbbbbbb bbbbbbbbb	256 through 65535	down	Refer to subclause 6.6.3.1.4
			P_{1R}	bbbbbbbbb bbbbbbbbb	256 through 65535	down	Refer to subclause 6.6.3.1.5
			P_{3T}	bbbbbbbbb bbbbbbbbb	$\geq (2 \times P_{1T})$	down	$3 \times P_{1T}$
			P_{3R}	bbbbbbbbb bbbbbbbbb	$\geq (2 \times P_{1R})$	down	$3 \times P_{1R}$

NOTE 2: V.44 parameters P_{2T} and P_{2R} are set to 255 and not negotiated in packet networks.

****** NEXT MODIFICATION ******

6.10 Possible combinations of SNDCP protocol functions and their connection to service access points

The following combinations of SNDCP protocol functions are allowed:

- One or several NSAPIs may use one SAPI.
- Only one SAPI shall be used by one NSAPI.
- One or several NSAPIs may use the same protocol control information compression entity.
- One NSAPI may use zero or; one, ~~or several~~ protocol control information compression entities.
- One or several NSAPIs may use the same data compression entity.
- One NSAPI may use zero, or one, ~~or several~~ data compression entities.
- Separate data compression entities shall be used for SN-DATA and SN-UNITDATA PDUs.
- Separate protocol control information compression entities shall be used for SN-DATA and SN-UNITDATA PDUs.
- One data compression entity shall be connected to one SAPI.
- One protocol control information compression entity shall be connected to one SAPI.
- One or several protocol control information compression entities may be connected to the same data compression entity.
- One protocol control information compression entity shall be connected to zero, one, or several data compression entities.

CHANGE REQUEST

⌘ **24.011 CR 031** ⌘ rev - ⌘ Current version: **5.2.0** ⌘

For [HELP](#) on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Unspecified SAPI value in RANAP message for MT SMS (lu interface only)		
Source:	⌘ Orange		
Work item code:	⌘ TEI6	Date:	⌘ 30/07/2003
Category:	⌘ F	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change:	⌘ On the lu interface, SAPI in RANAP DIRECT TRANSFER message can take two values in the downlink direction: 0 or 3 (TS25.413). This RANAP message is used to transfer Mobile Terminated-SMS messages over lu interface . In TS25.331, it is indicated that SAPI 0 corresponds to 'high priority' data transfer on signalling connection whereas SAPI 3 corresponds to the 'low priority'.
	The use of values 0 or 3 leads to different behaviours in the RNC regarding the radio priority of this message and may also have impact on the dimensionning rules used for RNC.
Summary of change:	⌘ It is made mandatory to use SAPI value set to 3 in RANAP message for the downlink transfer of to send MT-SMS messages over lu interface. Reference to RANAP specification is added.
Consequences if not approved:	⌘ Inconsistent behaviours of the Core Network nodes in one network in the case there are CN nodes provided by different suppliers. This also has impact on the dimensionning rules used.

Clauses affected:	⌘ 1.1 , 2.5										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘
Y	N										
	X										
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘										

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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.

***** CHANGE*****

1.1 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- | | |
|------|--|
| [1] | [Void] |
| [1a] | 3GPP TR 21.905: "Vocabulary for 3GPP Specifications". |
| [2] | 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS) Point-to-Point (PP)". |
| [3a] | 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2". |
| [3] | 3GPP TS 44.006: "Mobile Station - Base Station System (MS - BSS) interface; Data Link (DL) layer specification". |
| [4] | 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects". |
| [5] | 3GPP TS 24.008: "Mobile radio interface layer 3 specification". |
| [5a] | 3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification". |
| [5b] | 3GPP TS 33.102: "3G Security; Security Architecture". |
| [5c] | 3GPP TS 42.017: "Subscriber Identity Modules (SIM); Functional characteristics". |
| [6a] | 3GPP TS 44.064: "General Packet Radio Service (GPRS); Logical Link Control (LLC) layer specification". |
| [6] | ISO 7498: "Information processing systems - Open Systems Interconnection - Basic Reference Model". |
| [7] | 3GPP TS 44.018: "Mobile radio interface layer 3 specification; Radio Resource Control Protocol". |
| [8] | 3GPP TS 25.413: "UTRAN Iu interface RANAP signalling" . |

***** NEXT CHANGE*****

2.5 GSMS entity in Iu mode

It shall be possible for a PS-attached MS of any mode of operation to send and receive short messages in Iu mode.

A description of the different mode of operation UMTS MS can be found in 3GPP TS 23.060, and a brief overview is given below:

- CS/PS mode of operation MSs may be able to send and receive short messages using either the MM sublayer or the GMM sublayer;
- PS mode of operation MSs may be able to send and receive short messages using only GMM sublayer.

The GSMS entity for CS/PS mode of operation MS is shown in figure 2.3. The GSMS shall communicate with the MM entity via the GMMSMS-SAP for CS/PS mode of operation MO SMS in Iu mode, in order to ascertain which transport service to use.

The delivery path for MO SMS is selected by the MS.

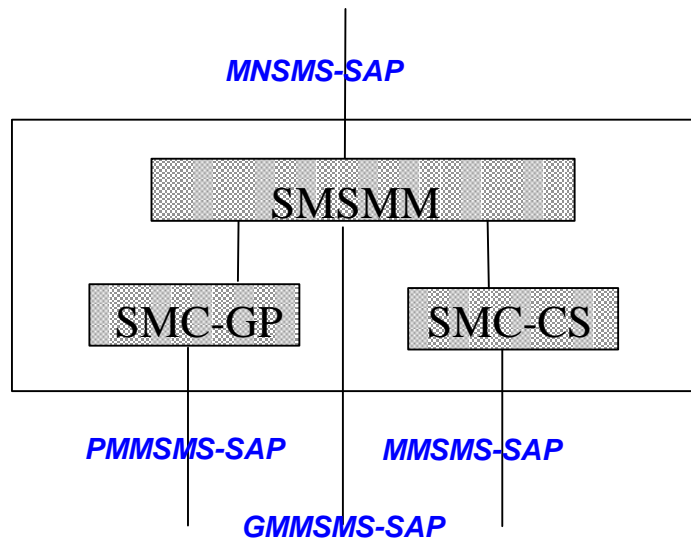


Figure 2.3/3GPP TS 24.011: GSMS entity for CS/PS mode of operation MS in Iu mode

The Radio Resource Management shall use the 'low priority' class for the downlink transfer of SMS signalling messages. This means the core network shall set the SAPI value to 3 in RANAP Direct Transfer messages (see 3GPP TS 25.413) when sending SMS signalling messages over the Iu interface.

*****END OF CHANGE*****

CHANGE REQUEST

⌘ **24.008 CR 798** ⌘ rev - ⌘ Current version: **6.1.0** ⌘

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

Proposed change affects: UICC apps ⌘ ME Radio Access Network Core Network

Title:	⌘ Source of the CS domain specific system information
Source:	⌘ Siemens AG
Work item code:	⌘ TEI6 Date: ⌘ 14/08/2003
Category:	⌘ F Release: ⌘ Rel-6
	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><i>Use <u>one</u> of the following categories:</i></p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </div> <div style="width: 45%;"> <p><i>Use <u>one</u> of the following releases:</i></p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> </div> </div>

Reason for change:	⌘ In lu mode, the CS domain specific system information is read from the broadcast channel if no RRC connection is established (RRC Idle mode), whereas it is provided via dedicated RRC signaling if an RRC connection is established (RRC connected mode). Thus a reference to the "L3-RRC SYSTEM INFORMATION BLOCK 1 message on the BCCH" is not correct in RRC connected mode.
Summary of change:	⌘ The term "L3-RRC SYSTEM INFORMATION BLOCK 1 message on the BCCH" is replaced with the more generic term "CS domain specific system information element" which covers both RRC Idle and Connected mode.
Consequences if not approved:	⌘ Risk that a MS implementation ignores the CS domain specific system information element provided via RRC dedicated signaling.

Clauses affected:	⌘ 4.3.4; 4.4.2; 4.4.3					
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"><input type="checkbox"/></td> <td style="width: 20px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘ Other core specifications ⌘ ⌘ Test specifications ⌘ ⌘ O&M Specifications ⌘
Y	N					
<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Other comments:	⌘					

4.3.4 IMSI detach procedure

The IMSI detach procedure may be invoked by a mobile station if the mobile station is deactivated or if the Subscriber Identity Module (see 3GPP TS 42.017 [7] and 3GPP TS 31.102) is detached from the mobile station.

In GSM, a flag (ATT) broadcast in the L3-RR SYSTEM INFORMATION TYPE 3 message on the BCCH is used by the network to indicate whether the detach procedure is required. The value of the ATT flag to be taken into account shall be the one broadcast when the mobile station was in MM idle.

In UMTS, a flag (ATT) ~~broadcast~~ in the [CS domain specific system information element L3-RR SYSTEM INFORMATION BLOCK 1 message on the BCCH](#) is used by the network to indicate whether the detach procedure is required. The value of the ATT flag to be taken into account shall be the one ~~broadcast~~ [received](#) when the mobile station was in MM idle.

The procedure causes the mobile station to be indicated as inactive in the network.

4.4.2 Periodic updating

Periodic updating may be used to notify periodically the availability of the mobile station to the network. Periodic updating is performed by using the location updating procedure. The location updating type information element in the LOCATION UPDATING REQUEST message shall indicate periodic updating.

The procedure is controlled by the timer T3212 in the mobile station. If the timer is not already started, the timer is started each time the mobile station enters the MM IDLE substate NORMAL SERVICE or ATTEMPTING TO UPDATE. When the MS leaves the MM Idle State the timer T3212 shall continue running until explicitly stopped.

The timer is stopped (shall be set to its initial value for the next start) when:

- a LOCATION UPDATING ACCEPT or LOCATION UPDATING REJECT message is received;
- an AUTHENTICATION REJECT message is received;
- the first MM message is received, or security mode setting is completed in the case of MM connection establishment, except when the most recent service state is LIMITED SERVICE;
- the mobile station has responded to paging and thereafter has received the first correct layer 3 message except RR message;
- the mobile station is deactivated (i.e. equipment powered down or SIM/USIM removed).

When the timer T3212 expires, the location updating procedure is started and the timer shall be set to its initial value for the next start. If the mobile station is in other state than MM Idle when the timer expires the location updating procedure is delayed until the MM Idle State is entered.

The conditions under which the periodic location updating procedure is used by a mobile station in the MM IDLE state are defined for each service state in subclause 4.2.2.

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

In GSM, the (periodic) location updating procedure is not started if the BCCH information at the time the procedure is triggered indicates that periodic location shall not be used. The timeout value is broadcasted in the L3-RR SYSTEM INFORMATION TYPE 3 message on the BCCH, in the Control channel description IE, see 3GPP TS 44.018 [84] subclause 10.5.2.11.

In UMTS, the (periodic) location updating procedure is not started if the information on BCCH or in the last received dedicated system information at the time the procedure is triggered indicates that periodic location shall not be used. The timeout value is [included in the CS domain specific system information element](#) ~~broadcasted in the L3-RR SYSTEM INFORMATION BLOCK 1 message on the BCCH, see 3GPP TS 25.331 [23e].~~

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

When a change of the T3212 timeout value has to be taken into account and the timer is running (at change of the serving cell or, change of the broadcast value of T3212), the MS shall behave as follows:

Let $t1$ be the new T3212 timeout value and let t be the current timer value at the moment of the change to the new T3212 timeout value; then the timer shall be restarted with the value t modulo $t1$.

When the mobile station is activated, or when a change of the T3212 timeout value has to be taken into account and the timer is not running, the mobile station shall behave as follows:

Let $t1$ be the new T3212 timeout value, the new timer shall be started at a value randomly, uniformly drawn between 0 and $t1$.

4.4.3 IMSI attach procedure

The IMSI attach procedure is the complement of the IMSI detach procedure (see subclause 4.3.4). It is used to indicate the IMSI as active in the network.

In GSM, a flag (ATT) is broadcast in the L3-RR SYSTEM INFORMATION TYPE 3 message. It indicates whether the attach and detach procedures are required to be used or not.

In UMTS, a flag (ATT) is [included in the CS domain specific system information element broadcast in the L3 RRC SYSTEM INFORMATION BLOCK 1 message](#). It indicates whether the attach and detach procedures are required to be used or not.

The IMSI attach procedure is invoked if the detach/attach procedures are required by the network and an IMSI is activated in a mobile station (i.e. activation of a mobile station with plug-in SIM/USIM, insertion of a card in a card-operated mobile station etc.) within coverage area from the network or a mobile station with an IMSI activated outside the coverage area enters the coverage area. The IMSI attach procedure is used only if the update status is UPDATED and if the stored Location Area Identification is the same as the one which is actually broadcasted on the BCCH of the current serving cell. Otherwise a normal location updating procedure (see subclause 4.4.1) is invoked independently of the ATT flag indication.

IMSI attach is performed by using the location updating procedure. The location updating type information element in the LOCATION UPDATING REQUEST message shall in this case indicate IMSI attach.

*** Next sections for information only ***

10.5.1.12 Core Network System Information (UMTS only)

The purpose of the *Core Network System Information* is to provide the MS with actual parameter settings of system information parameters controlling MM and GMM functionality. The Core Network system information is included in specific information elements within some RRC messages sent to MS, see 3GPP TS 25.331 [23c].

NOTE: These IEs do not have an IEI or a length indicator, because these IEs are never present in any layer 3 messages, Hence these IEs do not conform to the general IE rules defined in 24.007 [20].

10.5.1.12.1 CN Common GSM-MAP NAS system information

The purpose of the *CN Common GSM-MAP NAS system information* element is to provide the MS with actual parameter settings of parameters relevant for both MM and GMM functionality. The coding of the information element identifier and length information is defined in the 3GPP TS 25.331 [23c]. Only the coding of the content is in the scope of the present document.

The content of the *CN common GSM-MAP NAS system information* element is coded as shown in figure 10.5.1.12.1/3GPP TS 24.008 and table 10.5.1.12.1/3GPP TS 24.008.

The length of this element content is two octets. The MS shall ignore any additional octets received.

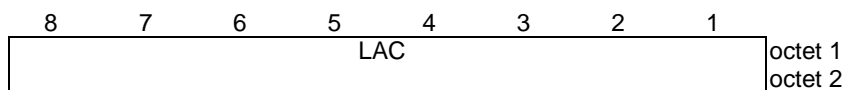


Figure 10.5.1.12.1/3GPP TS 24.008 Common system information element

Table 10.5.1.12.1/3GPP TS 24.008: *Common system information* element

LAC, Location Area Code (2 octet field)
 This field is the binary representation of the Location Area Code, see 3GPP TS 23.003. The LAC field consists of 16 bits. Bit 8 in octet 1 is the most significant bit and bit 1 in octet 2 is the least significant bit.

10.5.1.12.2 CS domain specific system information

The purpose of the *CN domain specific GSM-MAP NAS system information* element, when used for the CS domain, is to provide the MS with actual parameter settings of parameters relevant only for MM functionality. The coding of the information element identifier and length information is defined in the 3GPP TS 25.331 [23c]. Only the coding of the content is in the scope of the present document.

For CS domain, the content of the *CN domain specific GSM-MAP NAS system information* element is coded as shown in figure 10.5.1.12.2/3GPP TS 24.008 and table 10.5.1.12.2/3GPP TS 24.008. The length of this element content is two octets. The MS shall ignore any additional octets received.

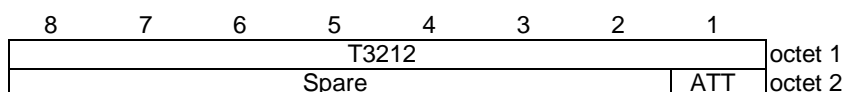


Figure 10.5.1.12.2/3GPP TS 24.008 CS domain specific system information element

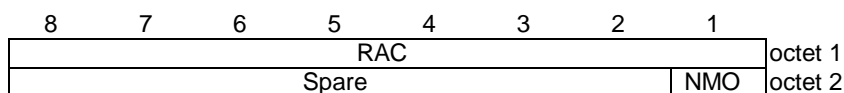
Table 10.5.1.12.2/3GPP TS 24.008: CS domain specific system information element

<p>T3212 timeout value (1 octet field)</p> <p>The T3212 timeout field is coded as the binary representation of the timeout value for periodic updating in decihours. Bit 8 in octet 1 is the most significant bit and bit 1 in octet 1 is the least significant bit.</p> <p>Range: 1 to 255</p> <p>The value 0 is used for infinite timeout value i.e. periodic updating shall not be used</p> <p>ATT, Attach-detach allowed (1 bit field):</p> <p>Bit 1</p> <p>0 MSs shall not apply IMSI attach and detach procedure.</p> <p>1 MSs shall apply IMSI attach and detach procedure</p> <p>The bits 2 – 8 of octet 2 are spare and shall be coded all zeros.</p>
--

10.5.1.12.3 PS domain specific system information

The purpose of the *CN domain specific GSM-MAP NAS system information* element, when used for the PS domain, is to provide the MS with actual parameter settings of parameters relevant only for GMM functionality. The coding of the information element identifier and length information is defined in the 3GPP TS 25.331. Only the coding of the content is in the scope of the present document.

For PS domain, the content of the *CN domain specific GSM-MAP NAS system information* element is coded as shown in figure 10.5.1.12.3/3GPP TS 24.008 and table 10.5.1.12.3/3GPP TS 24.008. The length of this element content is two octets. The MS shall ignore any additional octets received.

**Figure 10.5.1.12.3/3GPP TS 24.008 PS domain specific system information element****Table 10.5.1.12.3/3GPP TS 24.008: PS domain specific system information element**

<p>RAC, Routing Area Code (8 bit field)</p> <p>This field is the binary representation of the Routing Area Code, see 3GPP TS 23.003. Bit 8 in octet 1 is the most significant bit and bit 1 in octet 1 is the least significant bit.</p> <p>NMO, Network Mode of Operation (1 bit field)</p> <p>This field is the binary representation of the Network Mode of Operation, see 3GPP TS 23.060</p> <p>Bit 1</p> <p>0 Network Mode of Operation I</p> <p>1 Network Mode of Operation II</p> <p>The bits 2 – 8 of octet 2 are spare and shall be coded all zeros.</p>

*** Extract from 25.331 ***

8.1.1.6.1 System Information Block type 1

The UE should store all relevant IEs included in this system information block if the "PLMN Type" in the variable SELECTED_PLMN has the value "GSM-MAP" and the IE "PLMN type" in the Master Information Block has the value "GSM-MAP" or "GSM-MAP and ANSI-41". The UE shall also:

- 1> check that the cell, according to information included in IE "CN common GSM-MAP NAS system information", is suitable [4];
- 1> if in connected mode:
 - 2> not forward the content of the IE "CN common GSM-MAP NAS system information" to upper layers.
- 1> if in idle mode:
 - 2> forward the content of the IE "CN common GSM-MAP NAS system information" to upper layers.
- 1> for the IE "CN domain system information list":
 - 2> for each IE "CN domain system information" that is present:
 - 3> check that the cell, according to information included in IE "CN domain specific NAS system information", is suitable [4];
 - 3> if in connected mode:
 - 4> not forward the content of the IE "CN common GSM-MAP NAS system information" to upper layers.
 - 3> if in idle mode:
 - 4> forward the content of the IE "CN domain specific NAS system information" and the IE "CN domain identity" to upper layers;
 - 4> use the IE "CN domain specific DRX cycle length coefficient" to calculate frame number for the Paging Occasions as specified in [4];
 - 4> store the value of the IE "CN domain specific DRX cycle length coefficient" for use in connected mode.
 - 2> if an IE "CN domain system information" is not present for a particular CN domain:
 - 3> indicate to upper layers that no CN system information is available for that CN domain.
- 1> if the UE has not yet entered UTRA RRC connected mode:
 - 2> store the values of the IE "UE Timers and constants in connected mode" in the variable TIMERS_AND_CONSTANTS.
- 1> use the values stored in the variable TIMERS_AND_CONSTANTS for the relevant timers and constants.

8.6 Generic actions on receipt and absence of an information element

8.6.1 CN information elements

8.6.1.1 Void

8.6.1.2 CN information info

If the IE "CN information info" is present in a message, the UE shall:

- 1> if present, forward the content of the IE "PLMN identity" to upper layers;
- 1> if present, forward the content of the IE "CN common GSM-MAP NAS system information" to upper layers;
- 1> if the IE "CN domain related information" is present:
 - 2> forward each occurrence of the IE "CN domain specific GSM-MAP NAS system info" together with the IE "CN domain identity" to upper layers.
 - 2> if an IE "CN domain specific GSM-MAP NAS system info" is not present for a particular CN domain:
 - 3> indicate to upper layers that no CN system information is available for that CN domain.

CR-Form-v7

CHANGE REQUEST

⌘ **24.008 CR 799** ⌘ rev **1** ⌘ Current version: **6.1.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Signaling connection release after GMM procedure		
Source:	⌘ SIEMENS AG		
Work item code:	⌘ TEI6	Date:	⌘ 29/08/2003
Category:	⌘ F	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories: F (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) Rel-6 (Release 6)

Reason for change:	⌘ The condition when to release the signalling connection for the abnormal cases of the Attach and RAU are different. In the attach case it is only released once the attempt counter reaches its limit, while for the RAU this is done after each attempt. (Note that the sending of 1 x Attach Request or RAU Request incl. up to four retransmissions is counted as 1 attempt.) As in case (d) the network has no knowledge about the attempt counter, it will release the signalling connection after each attempt.
Summary of change:	⌘ It is clarified that both for the Attach and the RAU procedure the signalling connection shall be released by the MS after each attempt. Deletion of the requirement for the network to release the PS signalling connection after sending an Attach Reject or RAU Reject, since the section about 'abnormal cases in the MS' is the wrong place to specify such a requirement.
Consequences if not approved:	⌘ Inconsistent definition when to release the signalling connection. The requirement for the network to release the signalling connection only after the fifth attempt cannot be fulfilled at all.

Clauses affected:	⌘ 4.7.3.1.5; 4.7.5.1.5										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications ⌘ Test specifications O&M Specifications	Y	N		X		X		X		
Y	N										
	X										
	X										
	X										

Other comments: ☹

4.7.3.1.5 Abnormal cases in the MS

The following abnormal cases can be identified:

- a) Access barred because of access class control

The GPRS attach procedure shall not be started. The MS stays in the current serving cell and applies normal cell reselection process. The GPRS attach procedure is started as soon as possible, i.e. when access is granted or because of a cell change.

- b) Lower layer failure before the ATTACH ACCEPT or ATTACH REJECT message is received

The procedure shall be aborted. The MS shall proceed as described below.

- c) T3310 time-out

On the first expiry of the timer, the MS shall reset and restart timer T3310 and shall retransmit the ATTACH REQUEST message. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3310, the MS shall abort the GPRS attach procedure and, in UMTS, release the PS signalling connection (see 3GPP TS 25.331 [23c]). ~~shall be aborted and~~ The MS shall proceed as described below.

- d) ATTACH REJECT, other causes than those treated in subclause 4.7.3.1.4

The MS shall proceed as described below.

- e) Change of cell within the same RA (GSM only)

If a cell change occurs within the same RA when the MS is in state GMM-REGISTERED-INITIATED, then the cell update procedure shall be performed before completion of the attach procedure.

- f) Change of cell into a new routing area

If a cell change into a new routing area occurs before an ATTACH ACCEPT or ATTACH REJECT message has been received, the GPRS attach procedure shall be aborted and re-initiated immediately. If a routing area border is crossed when the ATTACH ACCEPT message is received but before an ATTACH COMPLETE message is sent, the GPRS attach procedure shall be aborted and the routing area updating procedure shall be initiated. If a P-TMSI was allocated during the GPRS attach procedure, this P-TMSI shall be used in the routing area updating procedure. If a P-TMSI signature was allocated together with the P-TMSI during the GPRS attach procedure, this P-TMSI signature shall be used in the routing area updating procedure.

- g) Mobile originated detach required

If the MS is in state GMM-REGISTERED-INITIATED, the GPRS attach procedure shall be aborted and the GPRS detach procedure shall be performed (see subclause 4.7.4.1).

- h) Procedure collision

If the MS receives a DETACH REQUEST message from the network in state GMM-REGISTERED-INITIATED with type of detach 're-attach not required', the GPRS detach procedure shall be progressed and the GPRS attach procedure shall be aborted. Otherwise the GPRS attach procedure shall be progressed and the DETACH REQUEST message shall be ignored.

In cases b, c and d the MS shall proceed as follows. Timer T3310 shall be stopped if still running. The GPRS attach attempt counter shall be incremented.

If the GPRS attach attempt counter is less than 5:

- timer T3311 is started and the state is changed to GMM-DEREGISTERED.ATTEMPTING-TO-ATTACH.

If the GPRS attach attempt counter is greater than or equal to 5:

- the MS shall delete any RAI, P-TMSI, P-TMSI signature, list of equivalent PLMNs, and GPRS ciphering key sequence number, shall set the GPRS update status to GU2 NOT UPDATED, shall start timer T3302. The state is changed to GMM-DEREGISTERED. ATTEMPTING-TO-ATTACH or optionally to GMM-DEREGISTERED.PLMN-SEARCH (see subclause 4.2.4.1.2).

~~In UMTS, in case c the MS shall release the PS signaling connection and in case d the network shall release the PS signaling connection for this MS (see 3GPP TS 25.331 [23c]).~~

4.7.5.1.5 Abnormal cases in the MS

The following abnormal cases can be identified:

- a) Access barred because of access class control

The routing area updating procedure shall not be started. The MS stays in the current serving cell and applies the normal cell reselection process. The procedure is started as soon as possible and if still necessary, i.e. when the barred state is removed or because of a cell change.

- b) Lower layer failure before the ROUTING AREA UPDATE ACCEPT or ROUTING AREA UPDATE REJECT message is received

The procedure shall be aborted. The MS shall proceed as described below.

- c) T3330 time-out

The procedure is restarted four times, i.e. on the fifth expiry of timer T3330, the MS shall abort the procedure and, in UMTS, release the PS signalling connection (see 3GPP TS 25.331 [23c]). The MS shall proceed as described below.

- d) ROUTING AREA UPDATE REJECT, other causes than those treated in subclause 4.7.5.1.4

The MS shall proceed as described below.

- e) If a routing area border is crossed, when the MS is in state GMM-ROUTING-AREA-UPDATE-INITIATED, the routing area updating procedure shall be aborted and re-initiated immediately. The MS shall set the GPRS update status to GU2 NOT UPDATED.

- f) In GSM, if a cell change occurs within the same RA, when the MS is in state GMM-ROUTING-AREA-UPDATE-INITIATED, the cell update procedure is performed, before completion of the routing area updating procedure.

- g) Routing area updating and detach procedure collision

GPRS detach containing detach type "re-attach required" or "re-attach not required":

If the MS receives a DETACH REQUEST message before the routing area updating procedure has been completed, the routing area updating procedure shall be aborted and the GPRS detach procedure shall be progressed.

GPRS detach containing detach type "IMSI detach":

If the MS receives a DETACH REQUEST message before the routing area updating procedure has been completed, the routing area updating procedure shall be progressed, i.e. the DETACH REQUEST message shall be ignored.

- h) Routing area updating and P-TMSI reallocation procedure collision

If the MS receives a P-TMSI REALLOCATION REQUEST message before the routing area updating procedure has been completed, the P-TMSI reallocation procedure shall be aborted and the routing area updating procedure shall be progressed.

In cases b, c and d the MS shall proceed as follows:

Timer T3330 shall be stopped if still running. The routing area updating attempt counter shall be incremented.

If the routing area updating attempt counter is less than 5, and the stored RAI is equal to the RAI of the current serving cell and the GMM update status is equal to GU1 UPDATED:

- the MS shall keep the GMM update status to GU1 UPDATED and changes state to GMM-REGISTERED.NORMAL-SERVICE. The MS shall start timer T3311. When timer T3311 expires the routing area updating procedure is triggered again.

If the routing area updating attempt counter is less than 5, and the stored RAI is different to the RAI of the current serving cell or the GMM update status is different to GU1 UPDATED:

- the MS shall start timer T3311, shall set the GPRS update status to GU2 NOT UPDATED and changes state to GMM-REGISTERED.ATTEMPTING-TO-UPDATE.

If the routing area updating attempt counter is greater than or equal to 5:

- the MS shall start timer T3302, shall delete the list of equivalent PLMNs, shall set the GPRS update status to GU2 NOT UPDATED and shall change to state GMM-REGISTERED.ATTEMPTING-TO-UPDATE or optionally to GMM-REGISTERED.PLMN-SEARCH(see subclause 4.2.5.1.8).

~~In UMTS, in case e the MS shall release the PS signaling connection and in case d the network shall release the PS signaling connection for this MS (see 3GPP TS 25.331 [23c]).~~