3GPP TSG-CN Meeting #23
10th - 12th March 2004. Phoenix, USA.

NP-040038

Source: **TSG CN WG 1**

Title: **CRs to Rel-6 on Work Item TEI6 towards 24.008**

Agenda item: **9.22**

Document for: **APPROVAL**

<u>**Introduction:**</u>

This document contains **8** CRs, **Rel-6** on Work Item **"TEI6"**, that have been agreed by **TSG CN WG1 in CN1#33 meeting**, and are forwarded to TSG CN Plenary meeting #23 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Meeting-2nd-Level
24.008	831	2	Rel-6	Use of TMSI/IMSI in CM SERVICE REQUEST message in case of ergency call redirection and change of LAI	C	6.3.0	6.4.0	N1-040456	N1-33
24.008	832		Rel-6	Clarification on the meaning of MS network capability indicator bits	F	6.3.0	6.4.0	N1-040229	N1-33
24.008	841	2	Rel-6	Added Session Management (SM) Cause Value for APN Type Conflict	B	6.3.0	6.4.0	N1-040461	N1-33
24.008	842		Rel-6	Correction of the condition for the tear down of PDP contexts	F	6.3.0	6.4.0	N1-040208	N1-33
24.008	844		Rel-6	Status of PFI value after PDP context modification	F	6.3.0	6.4.0	N1-040309	N1-33
24.008	845	1	Rel-6	MS reaction upon RRC connection release with cause "Directed signalling connection re-establishment"	F	6.3.0	6.4.0	N1-040453	N1-33
24.008	849	2	Rel-6	Clarification of UE behaviour at network initiated GPRS Detach	F	6.3.0	6.4.0	N1-040496	N1-33
24.008	851		Rel-6	MS class behaviour in case of a network inititated detach with detach type "IMSI detach"	F	6.3.0	6.4.0	N1-040362	N1-33

CR-Form-v7

CHANGE REQUEST

⌘   **TS 24.008 CR 831**   ⌘**rev 2** ⌘   Current version: **6.3.0** ⌘

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

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

Title: ⌘	Use of TMSI/IMSI in CM SERVICE REQUEST message in case of emergency call redirection and change of LAI	
Source: ⌘	Motorola	
Work item code: ⌘	TEI6	***Date:*** ⌘ 04/02/2004
Category: ⌘	**C**	***Release:*** ⌘ Rel-6

Use one 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 one 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: ⌘	If the mobile uses the TMSI, for an emergency call while it is not registered in that Location area, then the network (MSC) may have difficulties in identifying the mobile which could result in emergency call set up failures.
	To overcome this problem the UE could perform a LU when moving to a new cell in a different LAI but, especially in the case of emergency calls where speed is of the essence, this would seem to introduce an unnecessary delay.
	Within the RRC protocol there is the possibility for the network to send a RRC Connection Reject message, to a UE, directing it to use a different WCDMA frequency or to use the GSM RAT. If this occurs it is possible that the cell that the UE chooses on the new frequency or in the new RAT could be in a different LAI, which implies that the UE has to perform a LAU before continuing with the establishment of the RRC connection. Again, this would seem to introduce an unnecessary delay in setting up any ongoing emergency call.
Summary of change: ⌘	A clarification is added to the Location Updating Procedure to specify that the mobile station delays the location updating procedure in the case it is in the process of establishing an emergency call when a change of location area occures.
	The definition of when to use TMSI or IMSI is modified to clarify which identity should be used by the mobile station when moving between location areas.

Consequences if not approved:	⌘	There may be problems, or unnecessary delays, in setting up emergency calls in the case that the mobile station changes location area during the initiation of the call. This could endanger life.

Clauses affected:	⌘	4.4.1, 10.5.1.4

		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	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/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.

*********************************** FIRST MODIFIED SECTION ***********************************

4.4.1   Location updating procedure

The location updating procedure is a general procedure which is used for the following purposes:

-    normal location updating (described in this subclause);

-    periodic updating (see subclause 4.4.2);

-    IMSI attach (see subclause 4.4.3).

The normal location updating procedure is used to update the registration of the actual Location Area of a mobile station in the network. The location updating type information element in the LOCATION UPDATING REQUEST message shall indicate normal location updating. The conditions under which the normal 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.

Only applicable for mobile stations supporting VGCS listening or VBS listening: A mobile station in RR group receive mode is in the MM IDLE state, substate RECEIVING GROUP CALL (NORMAL SERVICE) or RECEIVING GROUP CALL (LIMITED SERVICE). To perform a location updating, the MS in RR group receive mode shall leave the group receive mode, establish an independent dedicated RR connection to perform the location updating as described above and return to the RR group receive mode afterwards.

The normal location updating procedure shall also be started if the network indicates that the mobile station is unknown in the VLR as a response to MM connection establishment request.

To limit the number of location updating attempts made, where location updating is unsuccessful, an attempt counter is used. The attempt counter is reset when a mobile station is switched on or a SIM/USIM card is inserted.

Upon successful location updating the mobile station sets the update status to UPDATED in the SIM/USIM, and stores the received Location Area Identification in the SIM/USIM. The attempt counter shall be reset.

The detailed handling of the attempt counter is described in subclauses 4.4.4.6 to 4.4.4.9.

The Mobile Equipment shall contain a list of "forbidden location areas for roaming", as well as a list of "forbidden location areas for regional provision of service". These lists shall be erased when the MS is switched off or when the SIM/USIM is removed, and periodically (with period in the range 12 to 24 hours). The location area identification received on the BCCH that triggered the location updating request shall be added to the suitable list whenever a location update reject message is received with the cause "Roaming not allowed in this location area" or with the cause "Location Area not allowed". The lists shall accommodate each 10 or more location area identifications. When the list is full and a new entry has to be inserted, the oldest entry shall be deleted.

The Mobile Equipment shall store a list of "equivalent PLMNs". This list is replaced or deleted at the end of each location update procedure, routing area update procedure and GPRS attach procedure. The stored list consists of a list of equivalent PLMNs as downloaded by the network plus the PLMN code of the network that downloaded the list. The stored list shall not be deleted when the MS is switched off. The stored list shall be deleted if the SIM/USIM is removed. The maximum number of possible entries in the stored list is 16.

The cell selection processes in the different states are described in 3GPP TS 43.022 [82] and 3GPP TS 45.008 [34].

The location updating procedure is always initiated by the mobile station.

In the case that the mobile station is initiating an emergency call but, due to cell re-selection or redirection by the network, it moves to a different LAI then the mobile station may delay the location updating procedure in the new LA until after the emergency call is completed.

*********************************** SECOND MODIFIED SECTION ***********************************

10.5.1.4   Mobile Identity

The purpose of the *Mobile Identity* information element is to provide either the international mobile subscriber identity, IMSI, the temporary mobile subscriber identity, TMSI/P-TMSI, the international mobile equipment identity, IMEI or the international mobile equipment identity together with the software version number, IMEISV.

The IMSI shall not exceed 15 digits, the TMSI/P-TMSI is 4 octets long, and the IMEI is composed of 15 digits, the IMEISV is 16 digits (see 3GPP TS 23.003 [10]).

For packet paging the network shall select the mobile identity type with the following priority:

1- P-TMSI: The P-TMSI shall be used if it is available.

2- IMSI: The IMSI shall be used in cases where no P-TMSI is available.

For all other transactions except emergency call establishment, emergency call re-establishment, mobile terminated call establishment, the identification procedure, the GMM identification procedure, the GMM authentication and ciphering procedure and the ciphering mode setting procedure, the mobile station and the network shall select the mobile identity type with the following priority:

1- TMSI: The TMSI shall be used if it is available.

2- IMSI: The IMSI shall be used in cases where no TMSI is available.

For mobile terminated call establishment the mobile station shall select the same mobile identity type as received from the network in the PAGING REQUEST message.

For emergency call establishment and re-establishment the mobile station shall select the mobile identity type with the following priority:

1- TMSI: The TMSI shall be used if it is available and if the location update status is UPDATED, and the stored LAI is equal to the one received on the BCCH from the current serving cell.

2- IMSI: The IMSI shall be used in cases where no TMSI is available or TMSI is available but either the update status is different from UPDATED, or the stored LAI is different from the one received on the BCCH from the current serving cell.

3- IMEI: The IMEI shall be used in cases where no SIM/USIM is available or the SIM/USIM is considered as not valid by the mobile station or no IMSI or TMSI is available.

In the identification procedure and in the GMM identification procedure the mobile station shall select the mobile identity type which was requested by the network.

In the ciphering mode setting procedure and in the GMM authentication and ciphering procedure the mobile shall select the IMEISV.

The *Mobile Identity* information element is coded as shown in figure 10.5.4/3GPP TS 24.008 and table 10.5.4/3GPP TS 24.008.

The *Mobile Identity* is a type 4 information element with a minimum length of 3 octet and 11 octets length maximal. Further restriction on the length may be applied, e.g. number plans.
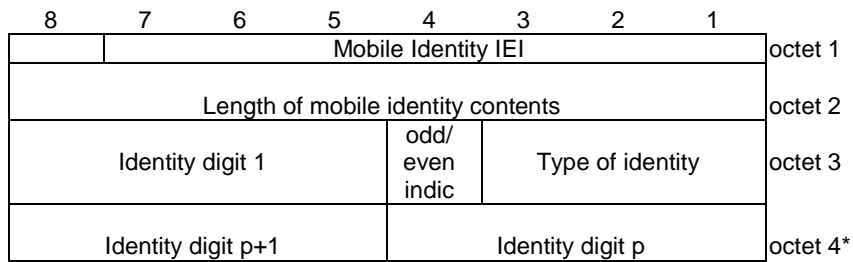
8	7	6	5	4	3	2	1	
		Mobile Identity IEI						octet 1
		Length of mobile identity contents						octet 2
	Identity digit 1			odd/ even indic		Type of identity		octet 3
	Identity digit p+1				Identity digit p			octet 4*

Figure 10.5.4/3GPP TS 24.008 *Mobile Identity* information element

Table 10.5.4/3GPP TS 24.008: *Mobile Identity* information element

```
Type of identity (octet 3)
Bits
3  2  1
0  0  1   IMSI
0  1  0   IMEI
0  1  1   IMEISV
1  0  0   TMSI/P-TMSI
0  0  0   No Identity note 1)

All other values are reserved.

Odd/even indication (octet 3)
Bit
4
0          even number of identity digits and also when the TMSI/P-TMSI is used
1          odd number of identity digits

Identity digits (octet 3 etc)

For the IMSI, IMEI and IMEISV this field is coded using BCD coding. If the number
of identity digits is even then bits 5 to 8 of the last octet shall be filled with an end
mark coded as "1111".

If the mobile identity is the TMSI/P-TMSI then bits 5 to 8 of octet 3 are coded as
"1111" and bit 8 of octet4 is the most significant bit and bit 1 of the last octet the
least significant bit. The coding of the TMSI/P-TMSI is left open for each
administration.
```

NOTE: This can be used in the case when a fill paging message without any valid identity has to be sent on the
paging subchannel.

CR-Form-v7

CHANGE REQUEST

⌘   **24.008** CR **832**   ⌘**rev** **-** ⌘   Current version: **6.3.0** ⌘

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

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

Title: ⌘	Clarification of the meaning of MS network capability indicator bits
Source: ⌘	NTT DoCoMo, Siemens

Work item code:⌘	TEI6	**Date:** ⌘	03/02/2004

Category: ⌘ **F**	**Release:** ⌘ Rel-6

Use one 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 one 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 MS network capability indicator bits for SM capabilities via dedicated channels and SM capabilities via GPRS channels use GSM access specific terminologies as "dedicated signalling channels" and "GPRS packet data channels". These terms need to be changed to indicate CS domain and PS domain respectively, since UMTS no longer depends on access channels. By changing the wording to talk specifically about domains rather than channels, it helps to clarify the meaning of these indicator bits which shall be used to indicate any combination of SM capabilities support in either or both domains.
Summary of change:⌘	"dedicated signalling channels" and "GRPS packet data channels" are changed to CS domain and PS domain respectively.
Consequences if not approved: ⌘	Inappropriate use of terminologies causes confusion in the development of SMS UMTS.

Clauses affected: ⌘	10.5.5.12

	Y	N		
Other specs affected: ⌘		X	Other core specifications ⌘	
		X	Test specifications	
		X	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/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.

10.5.5.12   MS network capability

The purpose of the *MS network capability* information element is to provide the network with information concerning aspects of the mobile station related to GPRS. The contents might affect the manner in which the network handles the operation of the mobile station. The *MS network capability* information indicates general mobile station characteristics and it shall therefore, except for fields explicitly indicated, be independent of the frequency band of the channel it is sent on.

The *MS network capability* is a type 4 information element with a maximum of 10 octets length.

The value part of a *MS network capability* information element is coded as shown in figure 10.5.128/3GPP TS 24.008 and table 10.5.145/3GPP TS 24.008.
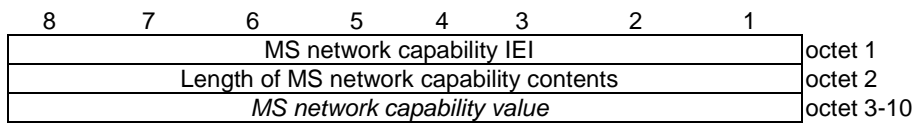
8	7	6	5	4	3	2	1	
MS network capability IEI								octet 1
Length of MS network capability contents								octet 2
MS network capability value								octet 3-10

Figure 10.5.128/3GPP TS 24.008 MS network capability information element

Table 10.5.145/3GPP TS 24.008 *MS network capability* information element

<MS network capability value part> ::=

      <**GEA1 bits**>
      <**SM capabilities via dedicated channels**: bit>
      <**SM capabilities via GPRS channels**: bit>
      <**UCS2 support**: bit>
      <**SS Screening Indicator**: bit string(2)>
      <SoLSA Capability : bit>
      <Revision level indicator: bit>
      <PFC feature mode: bit>
      <Extended GEA bits>
      < LCS VA capability: bit >
      <Spare bits>;

<**GEA1 bits**> ::= < **GEA/1** :bit>;

<Extended GEA bits> ::= <GEA/2:bit><GEA/3:bit>< GEA/4:bit >< GEA/5:bit >< GEA/6:bit ><GEA/7:bit>;

<**Spare bits**> ::= null | {<spare bit> < **Spare bits** >};

SS Screening Indicator
   0 0 defined in 3GPP TS 24.080

   0 1 defined in 3GPP TS 24.080
   1 0 defined in 3GPP TS 24.080
   1 1 defined in 3GPP TS 24.080

SM capabilities via dedicated channels
   0 Mobile station does not support mobile terminated point to point SMS via ~~dedicated signalling channels~~CS domain
   1 Mobile station supports mobile terminated point to point SMS via ~~dedicated signalling channels~~CS domain

SM capabilities via GPRS channels
   0 Mobile station does not support mobile terminated point to point SMS via ~~GPRS packet data channels~~PS domain
   1 Mobile station supports mobile terminated point to point SMS via ~~GPRS packet data channels~~PS domain

UCS2 support
This information field indicates the likely treatment by the mobile station of UCS2 encoded character strings.
   0 the ME has a preference for the default alphabet (defined in 3GPP TS 23.038 [8b]) over UCS2.
   1 the ME has no preference between the use of the default alphabet and the use of UCS2.

GPRS Encryption Algorithm GEA/1
0 encryption algorithm **GEA/1**not available
1 encryption algorithm **GEA/1** available

SoLSA Capability
   0 The ME does not support SoLSA.
   1 The ME supports SoLSA.

Revision level indicator
   0 used by a mobile station not supporting R99 or later versions of the protocol
   1 used by a mobile station supporting R99 or later versions of the protocol

PFC feature mode
   0   Mobile station does not support BSS packet flow procedures
   1   Mobile station does support BSS packet flow procedures

GEA/2

    0   encryption algorithm GEA/2 not available
    1   encryption algorithm GEA/2 available

GEA/3

    0   encryption algorithm GEA/3 not available
    1   encryption algorithm GEA/3 available

GEA/4

    0   encryption algorithm GEA/4 not available
    1   encryption algorithm GEA/4 available

GEA/5

    0   encryption algorithm GEA/5 not available
    1   encryption algorithm GEA/5 available

GEA/6

    0   encryption algorithm GEA/6 not available
    1   encryption algorithm GEA/6 available

GEA/7

0   encryption algorithm GEA/7 not available
1   encryption algorithm GEA/7 available

LCS VA capability (LCS value added location request notification capability)

    0 LCS value added location request notification capability not supported
    1 LCS value added location request notification capability supported

CR-Form-v7

CHANGE REQUEST

⌘   **24.008 CR 841**   ⌘**rev** **-2** ⌘   Current version: **6.3.0** ⌘

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

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

Title: ⌘	Added Session Management (SM) Cause Value for APN Type Conflict	
Source: ⌘	Vodafone	
Work item code: ⌘	TEI6	***Date:*** ⌘ 03/02/2004

Category: ⌘ **B**	***Release:*** ⌘ Rel-6

Use one 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 one 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: ⌘	3GPP TSG SA WG2 has introduced a new cause value for the Create PDP Context response. This cause value indicates that it was not possible to create a new primary PDP context because it conflicted with existing PDP context(s). Some combinations of PDP context are not allowed, as described in 23.060, subclause 15.4.
Summary of change: ⌘	A new cause value has been added to the Session Management Cause table in section 10.5.6.6. The new cause value has been added to Annex I.
Consequences if not approved: ⌘	If a new primary PDP context is refused because of its restriction type, a network will not be able to inform the UE, and therefore a subscriber, of the reason that the context was refused.

Clauses affected: ⌘	6.1.3.1.3, 10.5.6.6, I.1

		Y	N		
Other specs affected:	⌘	X		Other core specifications	⌘ 29.060
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘	Example: The corresponding changes proposed in TSG CN WG4 can be found in document C4-040012.

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.

6.1.3.1.3 Unsuccessful PDP context activation initiated by the MS

Upon receipt of an ACTIVATE PDP CONTEXT REQUEST message the network may reject the MS initiated PDP context activation by sending an ACTIVATE PDP CONTEXT REJECT message to the MS. The message shall contain a cause code that typically indicates one of the following causes:

8:   Operator Determined Barring;

26: insufficient resources;

27: missing or unknown APN;

28: unknown PDP address or PDP type;

29: user authentication failed;

30: activation rejected by GGSN;

31: activation rejected, unspecified;

32: service option not supported;

33: requested service option not subscribed;

34: service option temporarily out of order;

35: NSAPI already used. The network shall not send this cause code (see note 1); or

95 - 111:   protocol errors.

#112: APN restriction value incompatible with active PDP context.

NOTE 1:   Pre-R99 network may send this cause code.

Upon receipt of an ACTIVATE PDP CONTEXT REJECT message, the MS shall stop timer T3380 and enter/remain in state PDP-INACTIVE.

10.5.6.6 SM cause

The purpose of the *SM cause* information element is to indicate the reason why a session management request is rejected.

The *SM cause* is a type 3 information element with 2 octets length.

The *SM cause* information element is coded as shown in figure 10.5.139/3GPP TS 24.008 and table 10.5.157/3GPP TS 24.008.
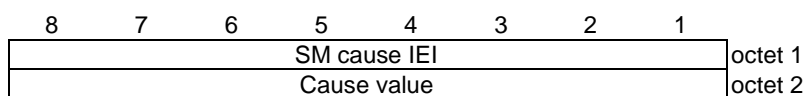
8	7	6	5	4	3	2	1	
SM cause IEI								octet 1
Cause value								octet 2

Figure 10.5.139/3GPP TS 24.008: *SM cause* information element

Table 10.5.157/3GPP TS 24.008: *SM cause* information element

```
Cause value (octet 2)
Bits
8 7 6 5 4 3 2 1
0 0 0 0 1 0 0 0    Operator Determined Barring
0 0 0 1 1 0 0 1    LLC or SNDCP failure(GSM only)
0 0 0 1 1 0 1 0    Insufficient resources
0 0 0 1 1 0 1 1    Missing or unknown APN
0 0 0 1 1 1 0 0    Unknown PDP address or PDP type
0 0 0 1 1 1 0 1    User Aauthentication failed
0 0 0 1 1 1 1 0    Activation rejected by GGSN
0 0 0 1 1 1 1 1    Activation rejected, unspecified
0 0 1 0 0 0 0 0    Service option not supported
0 0 1 0 0 0 0 1    Requested service option not subscribed
0 0 1 0 0 0 1 0    Service option temporarily out of order
0 0 1 0 0 0 1 1    NSAPI already used (not sent)
0 0 1 0 0 1 0 0    Regular deactivation
0 0 1 0 0 1 0 1    QoS not accepted
0 0 1 0 0 1 1 0    Network failure
0 0 1 0 0 1 1 1    Reactivation required
0 0 1 0 1 0 0 0    Feature not supported
0 0 1 0 1 0 0 1    Semantic error in the TFT operation
0 0 1 0 1 0 1 0    Syntactical error in the TFT operation
0 0 1 0 1 0 1 1    Unknown PDP context
0 0 1 0 1 1 1 0    PDP context without TFT already activated
0 0 1 0 1 1 0 0    Semantic errors in packet filter(s)
0 0 1 0 1 1 0 1    Syntactical errors in packet filter(s)
0 1 0 1 0 0 0 1    Invalid transaction identifier value
0 1 0 1 1 1 1 1    Semantically incorrect message
0 1 1 0 0 0 0 0    Invalid mandatory information
0 1 1 0 0 0 0 1    Message type non-existent or not implemented
0 1 1 0 0 0 1 0    Message type not compatible with the protocol state
0 1 1 0 0 0 1 1    Information element non-existent or not implemented
0 1 1 0 0 1 0 0    Conditional IE error
0 1 1 0 0 1 0 1    Message not compatible with the protocol state
0 1 1 0 1 1 1 1    Protocol error, unspecified
0 1 1 1 0 0 0 0    APN restriction value incompatible with active PDP context
```

Any other value received by the mobile station shall be treated as 0010 0010, "Service option temporarily out of order". Any other value received by the network shall be treated as 0110 1111, "Protocol error, unspecified".

NOTE: The listed cause values are defined in annex I

****** Third Modified Sub-clause ******

Annex I (informative):
GPRS specific cause values for session management

I.1 Causes related to nature of request

Cause value = 8 Operator Determined Barring

   This cause code is used by the network to indicate that the requested service was rejected by the SGSN due to Operator Determined Barring.

Cause value = 25 LLC or SNDCP failure (GSM only)
   This cause code is used by the MS indicate that a PDP context is deactivated because of a LLC or SNDCP failure (e.g. if the SM receives a *SNSM-STATUS.request* message with cause "*DM received* " or " *invalid XID response* ", see 3GPP TS 44.065 [78])

Cause value = 26 Insufficient resources
   This cause code is used by the MS or by the network to indicate that a PDP context activation request, secondary PDP context activation request or PDP context modification request cannot be accepted due to insufficient resources.

Cause value = 27 Unknown or missing access point name

   This cause code is used by the network to indicate that the requested service was rejected by the external packet data network because the access point name was not included although required or if the access point name could not be resolved.

Cause value = 28 Unknown PDP address or PDP type

   This cause code is used by the network to indicate that the requested service was rejected by the external packet data network because the PDP address or type could not be recognised.

Cause value = 29 User authentication failed

   This cause code is used by the network to indicate that the requested service was rejected by the external packet data network due to a failed user authentication.

Cause value = 30 Activation rejected by GGSN

   This cause code is used by the network to indicate that the requested service was rejected by the GGSN.

Cause value = 31 Activation rejected, unspecified

   This cause code is used by the network to indicate that the requested service was rejected due to unspecified reasons.

Cause value = 32 Service option not supported

   This cause code is used by the network when the MS requests a service which is not supported by the PLMN.

Cause value = 33 Requested service option not subscribed

   See Annex G, clause 4.

Cause value = 34 Service option temporarily out of order

   See Annex G, clause 4.

Cause value = 35 NSAPI already used

   This cause code may be used by a network to indicate that the NSAPI requested by the MS in the PDP context activation request is already used by another active PDP context of this MS.

Never to be sent, but can be received from a R97/R98 network at PDP context activation

Cause value = 36 Regular PDP context deactivation

This cause code is used to indicate a regular MS or network initiated PDP context deactivation.

Cause value = 37 QoS not accepted

This cause code is used by the MS if the new QoS cannot be accepted that were indicated by the network in the PDP Context Modification procedure.

Cause value = 38 Network failure

This cause code is used by the network to indicate that the PDP context deactivation is caused by an error situation in the network.

Cause value = 39 Reactivation requested

This cause code is used by the network to request a PDP context reactivation after a GGSN restart.

Cause value = 40 Feature not supported

This cause code is used by the MS to indicate that the PDP context activation initiated by the network is not supported by the MS.

Cause value = 41 semantic error in the TFT operation.

This cause code is used by the network to indicate that the there is a semantic error in the TFT operation included in a secondary PDP context activation request or an MS-initiated PDP context modification.

Cause value = 42 syntactical error in the TFT operation.

This cause code is used by the network to indicate that there is a syntactical error in the TFT operation included in a secondary PDP context activation request or an MS-initiated PDP context modification.

Cause value = 43 unknown PDP context

This cause code is used by the network to indicate that the PDP context identified by the Linked TI IE the secondary PDP context activation request is not active.

Cause value = 44 semantic errors in packet filter(s)

This cause code is used by the network to indicate that there is one or more semantic errors in packet filter(s) of the TFT included in a secondary PDP context activation request or an MS-initiated PDP context modification.

Cause value = 45 syntactical error in packet filter(s)

This cause code is used by the network to indicate that there is one or more syntactical errors in packet filter(s) of the TFT included in a secondary PDP context activation request or an MS-initiated PDP context modification.

Cause value = 46 PDP context without TFT already activated

This cause code is used by the network to indicate that the network has already activated a PDP context without TFT.

Cause value = 112 APN restriction value incompatible with active PDP context.

This cause code is used by the network to indicate that a requested primary PDP context has an APN restriction value that is not allowed in combination with a currently active PDP context. Restriction values are defined in 3GPP TS 23.060 [74], subclause 15.4.

CR-Form-v7

CHANGE REQUEST

⌘	**24.008** CR **842**	⌘**rev**	**-**	⌘	Current version:	**6.3.0**	⌘

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

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

Title:	⌘	Correction of the condition for the tear down of PDP contexts

Source:	⌘	Siemens AG

Work item code:	⌘	TEI6		**Date:**	⌘	09/02/2004

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:	⌘	With CR 24.008-818r1 (N1-031649) it was clarified in clause 6 that the tear down of PDP contexts affects only PDP contexts sharing the same PDP address **and APN**. In subclauses 9.5.14.1 and 10.5.6.10, the clarification that the contexts need to share also the APN is still missing.

Summary of change:	⌘	A clarification is added to subclauses 9.5.14.1 and 10.5.6.10 that the tear down affects only PDP contexts sharing the same PDP address and APN.

Consequences if not approved:	⌘	Inconsistent specification

Clauses affected:	⌘	9.5.14.1, 10.5.6.10

		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	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/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.

9.5.14   Deactivate PDP context request

This message is sent to request deactivation of an active PDP context. See table 9.5.8/3GPP TS 24.008.

Message type: DEACTIVATE PDP CONTEXT REQUEST

Significance: global

Direction: both

Table 9.5.14/3GPP TS 24.008: DEACTIVATE PDP CONTEXT REQUEST message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2– 3/2
	Deactivate PDP context request message identity	Message type 10.4	M	V	1
	SM cause	SM cause 10.5.6.6	M	V	1
9-	Tear down indicator	Tear down indicator 10.5.6.10	O	TV	1
27	Protocol configuration options	Protocol configuration options 10.5.6.3	O	TLV	3 – 253

9.5.14.1   Tear down indicator

This IE is included in the message in order to indicate whether only the PDP context associated with this specific TI or all active PDP contexts sharing the same PDP address and APN as the PDP context associated with this specific TI shall be deactivated.

9.5.14.2   Protocol configuration options

This IE is included in the message when the MS or the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the peer entity.

******************* NEXT MODIFIED SECTION *******************

10.5.6.10   Tear down indicator

The purpose of the *tear down indicator* information element is to indicate whether only the PDP context associated with this specific TI or all active PDP contexts sharing the same PDP address and APN as the PDP context associated with this specific TI shall be deactivated.

The *tear down indicator* is a type 1 information element.

The *tear down indicator* information element is coded as shown in figure 10.5.142/3GPP TS 24.008 and table 10.5.160/3GPP TS 24.008.
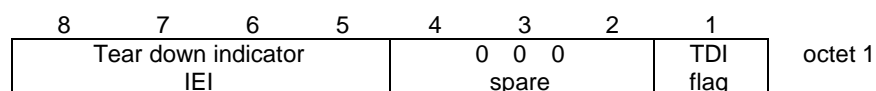
8	7	6	5	4	3	2	1	
Tear down indicator IEI				0 0 0 spare			TDI flag	octet 1

Figure 10.5.142/3GPP TS 24.008: *Tear down indicator* information element

Table 10.5.160/3GPP TS 24.008: *Tear down indicator* **information element**

```
Tear down indicator(TDI) flag (octet 1)

Bit
1
0       tear down not requested
1       tear down requested
```

CR-Form-v7

CHANGE REQUEST

⌘   **24.008** CR **844**   ⌘**rev**   **-**   ⌘ Current version: **6.3.0** ⌘

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

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

Title: ⌘	Status of PFI value after PDP context modification

Source: ⌘	Infineon AG		
Work item code:⌘	TEI6	***Date:*** ⌘	10/02/2004

Category: ⌘ **F**   ***Release:*** ⌘ Rel-6

Use one 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 one 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: ⌘	It is unclear whether the PFI values explicitly assigned during the PDP context activation shall be kept or deleted upon a PDP context modification without an explicit PFI IE included.
Summary of change:⌘	It is clarified that the assigned PFI values shall be kept if in the PDP context modification no PFI IE is included.
Consequences if not approved: ⌘	The status of the PFI value after a PDP context modification with omitted PFI IE is ambiguous, which will lead to the risk of different MS implementations.

Clauses affected: ⌘	9.5.9.2; 9.5.12.4

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

Other comments: ⌘	

9.5.9 Modify PDP context request (Network to MS direction)

This message is sent by the network to the MS to request modification of an active PDP context. See table 9.5.9/3GPP TS 24.008.

Message type: MODIFY PDP CONTEXT REQUEST (NETWORK TO MS DIRECTION)

Significance: global

Direction: network to MS

Table 9.5.9/3GPP TS 24.008: MODIFY PDP CONTEXT REQUEST (NETWORK TO MS DIRECTION) message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2– 3/2
	Modify PDP context request message identity	Message type 10.4	M	V	1
	Radio priority	Radio priority 10.5.7.2	M	V	1/2
	Spare half octet	Spare half octet 10.5.1.8	M	V	1/2
	Requested LLC SAPI	LLC service access point identifier 10.5.6.9	M	V	1
	New QoS	Quality of service 10.5.6.5	M	LV	13-15
2B	PDP address	Packet data protocol address 10.5.6.4	O	TLV	4-20
34	Packet Flow Identifier	Packet Flow Identifier 10.5.6.11	O	TLV	3
27	Protocol configuration options	Protocol configuration options 10.5.6.3	O	TLV	3 – 253

9.5.9.1 PDP address

If the MS requested external PDN address allocation at PDP context activation via an APN and this was confirmed by the network in the ACTIVATE PDP CONTEXT ACCEPT message, then the network shall include the PDP address IE in the MODIFY PDP CONTEXT REQUEST message once the address has been actually allocated, in order to update the PDP context in the MS.

9.5.9.2 Packet Flow Identifier

This IE may be included if the network wants to indicate the Packet Flow Identifier associated to the PDP context. If this IE is not included, the MS shall keep the old Packet Flow Identifier value.

9.5.9.3 Protocol configuration options

This IE is included in the message when the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MS.

9.5.12 Modify PDP context accept (Network to MS direction)

This message is sent by the network to the MS to acknowledge the modification of an active PDP context. See table 9.5.12/3GPP TS 24.008.

Message type: MODIFY PDP CONTEXT ACCEPT (NETWORK TO MS DIRECTION)

Significance: global

Direction: Network to MS

Table 9.5.12/3GPP TS 24.008: MODIFY PDP CONTEXT ACCEPT (NETWORK to MS direction) message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	½
	Transaction identifier	Transaction identifier 10.3.2	M	V	½– 3/2
	Modify PDP context accept message identity	Message type 10.4	M	V	1
30	Negotiated QoS	Quality of service 10.5.6.5	O	TLV	14-16
32	Negotiated LLC SAPI	LLC service access point identifier 10.5.6.9	O	TV	2
8	New radio priority	Radio priority 10.5.7.2	O	TV	1
34	Packet Flow Identifier	Packet Flow Identifier 10.5.6.11	O	TLV	3
27	Protocol configuration options	Protocol configuration options 10.5.6.3	O	TLV	3 – 253

9.5.12.1 Negotiated QoS

This IE is included in the message if the network assigns a new QoS.

9.5.12.2 Negotiated LLC SAPI

This IE is included in the message if the network assigns a new LLC SAPI.

9.5.12.3 New radio priority

This IE is included in the message only if the network modifies the radio priority.

9.5.12.4 Packet Flow Identifier

This IE may be included if the network wants to indicate the Packet Flow Identifier associated to the PDP context. If this IE is not included, the MS shall keep the old Packet Flow Identifier value.

9.5.12.5 Protocol configuration options

This IE is included in the message when the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MS.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **24.008** CR **845** | ⌘ **rev** | **1** | ⌘ | Current version: | **6.3.0** | ⌘ |

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

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

Title:	⌘	MS reaction upon RRC connection release with cause "Directed signalling connection re-establishment"
Source:	⌘	Infineon AG
Work item code: ⌘	TEI6	***Date:*** ⌘ 10/02/2004

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:	⌘	If the MS changes the URA and the new RNC has no Iur connection to the old RNC, the RRC connection will be released by the network with cause "Directed signalling connection re-establishment". The MS shall, upon reception of this release, perform a RAU in order to ensure that the old Iu connection between the SGSN and the old RNC is released. If the MS changes to a GSM cell before or while the RAU is performed it is unclear whether this RAU shall be performed/continued. But even if the MS has change to GSM, the RAU is essentially needed in order to release the old Iu connection and thus to ensure that the MS is reachable on the new cell for PS DL traffic.
Summary of change: ⌘		It is clarified that this RAU shall also be performed or continued if the MS has performed a intersystem change towards GSM, irrespective whether the READY timer is running or the MS is in PMM-IDLE or PMM-CONNECTED mode.
Consequences if not approved:	⌘	If the RAU is not performed or continued if the MS changes to GSM, the MS will not be reachable for PS DL traffic.

Clauses affected:	⌘	4.7.2.5

	Y	N	
Other specs affected: ⌘		**X**	Other core specifications ⌘
		X	Test specifications
		X	O&M Specifications

Other comments:	⌘	

4.7.2.5 RA Update procedure for Signalling Connection Re-establishment (UMTS only)

When the MS receives an indication from the lower layers that the RRC connection has been released with cause "Directed signalling connection re-establishment", see 3GPP TS 25.331 [23c], then the MS shall enter PMM-IDLE mode and initiate immediately a normal routing area update procedure (the use of normal or combined procedure depends on the network operation mode in the current serving cell) regardless whether the routing area has been changed since the last update or not. This routing area update procedure shall also be performed or continued if the MS has performed a intersystem change towards GSM, irrespective whether the READY timer is running or the MS is in PMM-IDLE or PMM-CONNECTED mode.

4.7.1.7   Intersystem change between GSM and UMTS

For the UMTS to GSM and GSM to UMTS intersystem change the following cases can be distinguished:

a) Intersystem change between cells belonging to different RA's:

The procedures executed by the MS depends on the network mode of operation in the old and new RA. If a change of the network operation mode has occurred in the new RA, then the MS shall behave as specified in subclause 4.7.1.6. If no change of the network operation mode has occurred in the new RA, then the MS shall initiate the normal or combined RA update procedure depending on the network operation mode in the current RA.

b) Intersystem change between cells belonging to the same RA:

If the READY timer is running in the MS in GSM or the MS is in PMM-CONNECTED mode in UMTS, then the MS shall perform a normal or combined RA update procedure depending on the network mode of operation in the current RA.

If the READY timer is not running in the MS in GSM or the MS is in PMM-IDLE mode in UMTS, then the MS shall not perform a RA update procedure (as long as the MS stays within the same RA) until up-link user data or signalling information needs to be sent from the MS to the network, except case c) is applicable.

-   If the MS is in the same access network, GSM or UMTS, as when it last sent user data or signalling messages, the procedures defined for that access system shall be followed. This shall be sending of an LLC PDU in a GSM cell or initiating the SERVICE REQUEST procedure in a UMTS cell.

-   If the MS is in a different access network, GSM or UMTS, as when it last sent user data or signalling messages, the normal or combined RA update procedure shall be performed depending on the network operation mode in the current RA, before the sending of user data or signalling messages. If the signalling message is a DETACH REQUEST containing cause "power off", the RA update procedure need not to be performed.

-   If the periodic routing area update timer expires the MS shall initiate the periodic RA update procedure.

If the READY timer is not running in the network in GSM or the network is in PMM-IDLE mode in UMTS, then the network shall page the MS if down-link user data or signalling information needs to be sent from the network to the MS. This shall include both GSM and UMTS cells.

-   If the MS receives the paging indication in the same access network, GSM or UMTS, as when it last sent user data or signalling information, the MS shall send any LLC PDU in a GSM cell or shall initiate the SERVICE REQUEST procedure indicating service type "paging response" in a UMTS cell.

-   If the MS receives the paging indication in a different access network, GSM or UMTS, as when it last sent user data or signalling information, the normal or combined RA update procedure shall be performed depending on the network operation mode in the current RA.

c) Intersystem handover from GSM to UMTS during a CS connection:

After the successful completion of the handover from an GSM cell to an UMTS cell, an MS which has performed the GPRS suspension procedure in Gb mode (see 3GPP TS 44.018 [84]) (i.e. an MS in MS operation mode B or an DTM MS in a GSM cell that does not support DTM) shall perform a normal RA update procedure in the UMTS cell in order to resume the GPRS services in the network, before sending any other signalling messages or user data.

CR-Form-v7

CHANGE REQUEST

⌘ **TS 24.008 CR 849** ⌘ **rev 2** ⌘ Current version: **6.3.0** ⌘

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

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

Title: ⌘	Clarification of UE behaviour at Network initiated GPRS Detach	
Source: ⌘	Ericsson LM	
Work item code:⌘	TEI6	*Date:* ⌘ 06/02/2004
Category: ⌘ **F**		*Release:* ⌘ Rel-6

Use one 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 one 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: ⌘	Currently it's not explicitly stated what the UE should do with parameters such as P-TMSI, P-TMSI signature, etc, in case of network initiated GPRS Detach where the detach type IE indicates "re-attach". This could lead to extra signalling due to P-TMSI reallocation and authentication procedures. This CR aims to clarify this situation.
Summary of change:⌘	It is proposed to explicitly state in section 4.7.1.3 that the UE shall not delete its current P-TMSI signature in case of network initiated GPRS Detach, where the detach type IE indicates "re-attach".
Consequences if not approved: ⌘	The specification will still be unclear for the above described case and the UE behaviour is unpredictable for the SGSN. Unnecessary extra signalling due to P-TMSI reallocation and authentication procedures.

Clauses affected: ⌘	4.7.1.3		

		Y	N	
Other specs affected:	⌘		X	Other core specifications ⌘
			X	Test specifications
			X	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/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.

4.7.1.3 P-TMSI signature

The network may assign a P-TMSI signature to an MS in an attach, routing area update, or P-TMSI reallocation procedure. Only in combination with a valid P-TMSI, this P-TMSI signature is used by the MS for authentication and identification purposes in the subsequent attach, routing area update or detach procedure. If the MS has no valid P-TMSI it shall not use the P-TMSI signature in the subsequent attach, routing area update or detach procedure. Upon successful completion of the subsequent attach or routing area update procedure, the used P-TMSI signature shall be deleted. Upon completion of ~~the~~ an MS initiated detach procedure, the used P-TMSI signature shall be deleted. Upon completion of a network initiated detach procedure the P-TMSI signature shall be kept, unless explicitly specified otherwise in subclause 4.7.4.2.2.

CR-Form-v7

CHANGE REQUEST

⌘   **24.008 CR 851**   ⌘**rev**   **-**   ⌘   Current version: **6.3.0** ⌘

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

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

Title: ⌘	MS class behaviour in case of a network inititated detach with detach type "IMSI detach"
Source: ⌘	Infineon AG
Work item code: ⌘ TEI6	***Date:*** ⌘ 10/02/2004

Category: ⌘ **F**   ***Release:*** ⌘   Rel-6

Use one of the following categories: *Use one 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   *Rel-4   (Release 4)*
be found in 3GPP TR 21.900.   *Rel-5   (Release 5)*
*   Rel-6   (Release 6)*

Reason for change: ⌘	According to 23.060-6.3.1 a MS in class A mode of operation shall not perform a combined RA/LA update during a CS connection and a class B mode of operation cannot make any RA updates during a CS connection. The combined update must be performed once the CS connection is released.
Summary of change: ⌘	It is clarified that a MS in operation mode A that is in an ongoing circuit-switched transaction shall initiate the combined routing area updating after the circuit-switched transaction has been released if it receives a network inititated detach with detach type "IMSI detach".
Consequences if not approved: ⌘	The MS will not perform the combined RAU and thus will not ensure that the Gs association is re-established once the CS call is released.

Clauses affected: ⌘	4.7.4.2.2

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	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 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. 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.

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 subclause 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 A that is in an ongoing circuit-switched transaction shall initiate the combined routing area updating after the circuit-switched transaction has been released. 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.

When receiving the DETACH REQUEST message and the detach type IE indicates "re-attach not required" and the cause code is not "#2 (IMSI unknown in HLR)", 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.

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/USIM shall be considered as invalid for non-GPRS services until switching off or the SIM/USIM 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);

6 (Illegal ME);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 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/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM 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. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid also for non-GPRS services until switching off or the SIM/USIM 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 subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed. The new state is GMM-DEREGISTERED.

A GPRS MS operating in MS operation mode A or B in network operation mode I shall set the timer T3212 to its initial value and restart it, if it is not already running.

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 shall store it according to subclause 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 MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid for GPRS and non-GPRS services until switching off or the SIM/USIM is removed.

11   (PLMN not allowed);

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 subclause 4.1.3.2). The new GMM state is GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMN list".

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

-    A GPRS MS operating in MS operation mode A or B 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 MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

12   (Location area not allowed);

The MS shall delete any RAI, P-TMSI, P-TMSI signature GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED(and shall store it according to clause 4.1.3.2) and shall reset the attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

The MS shall store the LAI in the list of "forbidden location areas for regional provision of service".

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a cell selection according to 3GPP TS 43.022 [82] and 3GPP TS 25.304.

13   (Roaming not allowed in this location area);

The MS shall delete any RAI, 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 clause 4.1.3.2) and shall reset the attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE or optionally to GMM-DEREGISTERED.PLMN-SEARCH.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

14   (GPRS services not allowed in this PLMN);

The MS shall delete any RAI, P-TMSI, P-TMSI signature, and GPRS ciphering key sequence number stored, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall change to state GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMNs for GPRS service" list.

A GPRS MS operating in MS operation mode A or B in network operation mode I shall set the timer T3212 to its initial value and restart it, if it is not already running.

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

15   (No Suitable Cells In Location Area);

The MS shall delete any RAI, 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 clause 4.1.3.2) and shall reset the attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall search for a suitable cell in another location area in the same PLMN according to 3GPP TS 43.022 [82] and 3GPP TS 25.304.

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