

CR-Form-v7

CHANGE REQUEST

⌘ **29.018 CR 041** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

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

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

Title:	⌘ Addition of IMEISV to Update Location Procedure for ADD function		
Source:	⌘ Ericsson L.M., Siemens, T-Mobile, Telefonica		
Work item code:	⌘ TEI6	Date:	⌘ 10/03/2004
Category:	⌘ B	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:	⌘ This CR is concerned with ensuring that the ADD feature is fully supported in the network when the Gs interface is used. ADD function requires that the HLR will always be updated with the IMEISV at Location Update procedure and if the subscriber later changes Ue. It is necessary to pass the IMEISV from the SGSN to the MSC/VLR at the earliest opportunity, e.g. at location update.
Summary of change:	⌘ IMEISV added to the Gs interface in the BSSAP+ Location Update Request message. The location update for non-GPRS service procedure is updated to mandate the SGSN to include the IMEISV information element in the BSSAP+-LOCATION-UPDATE-REQUEST message when the ADD feature is supported. Additionally, a reference to 22.101 has been added.
Consequences if not approved:	⌘ ADD function will not be complete. The ADD function will not be fully supported in the network when the Gs i/f is used.

Clauses affected:	⌘ 2.1, 6.2.1, 17.1.11.6										
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ 23.012 CR 015, 23.060 CR 488, 23.008 CR 130, 29.060 CR 488, 29.002 CR 718
Y	N										
X											
	X										
	X										
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 modification

2.1 Normative references

- [1] [Void]
- [1a] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] [Void]
- [3] [Void]
- [4] 3GPP TS 22.060: "General Packet Radio Service (GPRS); Service description; Stage 1".
- [5] 3GPP TS 23.003: "Numbering, addressing and identification".
- [6] 3GPP TS 23.007: "Restoration procedures".
- [6a] 3GPP TS 23.018: "Basic Call Handling; Technical realization".
- [7] 3GPP TS 23.122: "Non-Access-Stratum functions related to Mobile Station (MS) in idle mode".
- [8] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".
- [9] 3GPP TS 43.064: "Overall description of the GPRS radio interface; Stage 2".
- [10] 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects".
- [11] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".
- [11a] 3GPP TS 44.018: "Mobile radio interface layer 3 specification; Radio Resource Control Protocol".
- [12] 3GPP TS 44.064: "Mobile Station - Serving GPRS Support Node (MS-SGSN) Logical Link Control (LLC) layer specification".
- [13] 3GPP TS 44.065: "Mobile Station (MS) - Serving GPRS Support Node (SGSN); Subnetwork Dependent Convergence Protocol (SNDCCP)".
- [14] 3GPP TS 48.008: "Mobile-services Switching Centre - Base Station System (MSC-BSS) interface; Layer 3 specification".
- [15] 3GPP TS 48.018: "Base Station System (BSS) - Serving GPRS Support Node (SGSN); BSS GPRS Protocol (BSSGP)".
- [16] 3GPP TS 48.060: "Inband control of remote transcoders and rate adaptors for Enhanced Full Rate (EFR) and full rate traffic channels."
- [17] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".
- [18] 3GPP TS 49.008: "Application of the Base Station System Application Part (BSSAP) on the E-interface".
- [19] 3GPP TS 29.010: "Information Element Mapping between Mobile Station - Base Station System (MS-BSS) and Base Station System - Mobile-services Switching Centre (BSS-MSC) Signalling Procedures and the Mobile Application Part (MAP)".
- [20] 3GPP TS 29.016: "General Packet Radio Service (GPRS); Serving GPRS Support Node (SGSN) - Visitors Location Register (VLR); Gs interface network service specification".
- [21] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".
- [22] 3GPP TS 25.413: "UTRAN Iu interface RANAP signalling".
- [23] 3GPP TS 23.195: "Provision of UE Specific Behaviour Information to Network Entities".

[xx] [3GPP TS 22.101: "Service Principles"](#).

Next modification

6.2.1 Location Update Initiation

If timer T6-1 is not running, the SGSN shall start the Location Update for non-GPRS service procedure when it receives from the MS:

- an Attach request indicating combined IMSI and GPRS attach;
- an Attach request indicating GPRS attach while IMSI attached;
- a Combined Routing and Location Area Update request indicating IMSI attach;
- a Combined Routing and Location Area Update request indicating that the Location Area has changed;
- a Combined Routing and Location Area Update request, if the state of the association is Gs-NULL; or
- a Combined Routing and Location Area Update request when the SGSN serving the MS has changed.

For networks not supporting the feature 'Intra Domain Connection of RAN Nodes to Multiple CN Nodes' the number of the VLR is derived from the RAI where the MS is camping. For networks supporting the feature 'Intra Domain Connection of RAN Nodes to Multiple CN Nodes', the VLR number is derived as described in 3GPP TS 23.236 [23]. The SGSN starts Timer T6-1. The BSSAP+-LOCATION-UPDATE-REQUEST message includes the old Location Area Identifier received from the MS. The SGSN shall also include the new Location Area Identifier where the MS is currently camping. The new LAI is derived from the RAI.

The BSSAP+-LOCATION-UPDATE-REQUEST message includes the type of location update performed by the MS in the GPRS location update type IE. If the MS has performed a combined attach request or a combined routing and location area update request with IMSI attach, the SGSN indicates 'IMSI attach', otherwise the SGSN indicates 'Normal location update'.

The BSSAP+-LOCATION-UPDATE-REQUEST message shall include the TMSI status if received from the MS.

If the SGSN supports the "Provision of UE Specific Behaviour Information to Network Entities" (see 3GPP TS 23.195 [23]) [or the "Automatic Device Detection" \(see 3GPP TS 22.101 \[xx\]\)](#), the BSSAP+-LOCATION-UPDATE-REQUEST message shall include the IMEISV.

If timer T6-1 is running:

If the SGSN receives from the MS:

- an Attach request indicating combined IMSI and GPRS attach;
- an Attach request indicating GPRS attach while IMSI attached; or
- a Combined Routing and Location Area Update request with or without IMSI attach.

Then:

- if the new LAI is the same as in the outstanding request, the SGSN shall not process this new request and shall wait for the VLR's response to the ongoing procedure; or
- if the new LAI is different but is in the same VLR as the outstanding request:
 - any response from the VLR to the outstanding request is ignored;
 - Timer T6-1 shall be stopped and reset; and
 - The SGSN shall start the Location Update for non-GPRS service procedure; or

- if the new LAI is different, and is in a different VLR to the outstanding request:
 - any response from the previously addressed VLR to the outstanding request is ignored;
 - Timer T6-1 shall be stopped and reset; and
 - the SGSN shall start the Location Update for non-GPRS service procedure.

When the SGSN receives from the MS a Routing Area Update request and the SGSN serving the MS has changed, the SGSN shall stop and reset timer T6-1.

Next modification

17.1.11 BSSAP+-LOCATION-UPDATE-REQUEST message

This message is sent by the SGSN to the VLR either to request update of its location file (normal update) or to request IMSI attach.

Table 17.1.11/3GPP TS 29.018: BSSAP+-LOCATION-UPDATE-REQUEST message content

Information Element	Type/Reference	Presence	Format	Length
Message type	Message type 18.2	M	V	1
IMSI	IMSI 18.4.10	M	TLV	6-10
SGSN number	SGSN number 18.4.22	M	TLV	5-11
Update type	GPRS location update type 18.4.6	M	TLV	3
New Cell global identity	Cell global identity 18.4.1	M	TLV	10
Mobile station classmark	Mobile station classmark 1 18.4.18	M	TLV	3
Old location area identifier	Location area identifier 18.4.14	O	TLV	7
TMSI status	TMSI status 18.4.24	O	TLV	3
New service area identification	Service area identification 18.4.21b	O	TLV	9
IMEISV	IMEISV 18.4.9	O	TLV	10

17.1.11.1 Old location area identifier

This information element should be included. It is derived from the old routing area identification received in the ROUTING AREA UPDATING REQUEST message defined in 3GPP TS 24.008.

17.1.11.2 New cell global identity

In A/Gb mode, the cell global identity which shall be included is the one where the MS is in the current radio contact.

In Iu mode, the cell global identity which shall be included indicates where the MS is in the current location area. The cell identity part of this information shall be ignored by the VLR.

17.1.11.3 TMSI status

This information element shall be included if the TMSI status received in the ATTACH REQUEST or ROUTING AREA UPDATING REQUEST message from the MS indicates, that no valid TMSI is available in the MS.

17.1.11.4 Mobile station classmark

This information element does not serve any useful purpose, but shall be included for reasons of compatibility with earlier versions of the protocol. To ease interworking with old VLR equipment, the SGSN shall encode the contents of this information element as: revision level 'GSM phase 2', 'early classmark sending supported', 'encryption algorithm A5/1 supported', and RF power capability 'class 1'.

17.1.11.5 New service area identification

In Iu mode, the service area identification which should be included is the one where the MS is in the current radio contact.

17.1.11.6 IMEISV

This information element shall be included, if the SGSN supports the "Provision of UE Specific Behaviour Information to Network Entities" [or the "Automatic Device Detection"](#).

Modification end