

**3GPP TSG CN Plenary Meeting #25**  
**8<sup>th</sup> – 10<sup>th</sup> August 2004 Palm Springs, US.**

**NP-040409**

**Source:** TSG CN WG4  
**Title:** Corrections on TEI6 cause code mapping  
**Agenda item:** 9.21  
**Document for:** APPROVAL

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<b>Spec</b>	<b>CR</b>	<b>Rev</b>	<b>Doc-2nd-Level N4-04</b>	<b>Phase</b>	<b>Subject</b>	<b>Cat</b>	<b>Ver_C</b>
29.010	108	2	1127	Rel-5	Addition of cause code mapping to the routing area update procedure	F	6.3.0

Sophia Antipolis, France, 16<sup>th</sup> – 20<sup>th</sup> August 2004.

CR-Form-v7.1

**CHANGE REQUEST**⌘ **TS 29.010 CR 108** ⌘ 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  Radio Access Network  Core Network 

<b>Title:</b>	⌘ Addition of cause code mapping to the routing area update procedure		
<b>Source:</b>	⌘ CN4		
<b>Work item code:</b>	⌘ TEI6	<b>Date:</b>	⌘ 13/07/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	<b>Ph2</b> (GSM Phase 2)	
	<b>A</b> (corresponds to a correction in an earlier release)	<b>R96</b> (Release 1996)	
	<b>B</b> (addition of feature),	<b>R97</b> (Release 1997)	
	<b>C</b> (functional modification of feature)	<b>R98</b> (Release 1998)	
	<b>D</b> (editorial modification)	<b>R99</b> (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<b>Rel-4</b> (Release 4)
			<b>Rel-5</b> (Release 5)
			<b>Rel-6</b> (Release 6)
			<b>Rel-7</b> (Release 7)

<b>Reason for change:</b>	⌘ Mapping of cause code during Routing area update for roaming restrictions is currently unspecified.
<b>Summary of change:</b>	⌘ In section 3.2 a cause code mapping from "Roaming Restricted in SGSN due to unsupported feature" to "GPRS service not allowed in this PLMN" is added to the table
<b>Consequences if not approved:</b>	⌘ Unpredictable behaviour of the UE, possibly ending up with a denial of service for a subscriber in the PS domain and possibly also in the CS domain.

<b>Clauses affected:</b>	⌘ 3.2																
<b>Other specs affected:</b>	<table border="1"> <tr> <td></td> <td><b>Y</b></td> <td><b>N</b></td> <td></td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>Other core specifications</td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>Test specifications</td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>O&amp;M Specifications</td> </tr> </table>		<b>Y</b>	<b>N</b>			<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Test specifications		<input type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications
	<b>Y</b>	<b>N</b>															
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications														
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Test specifications														
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications														
<b>Other comments:</b>	⌘																

**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.

### 3.2 Routing area updating

	24.008	29.002	Notes
Forward message	GMM (ROUTEING AREA UPDATE REQUEST) MS classmark 1 MS classmark 4 GPRS Ciphering key seq number Mobile station identity Old routeing area identification	MAP_UPDATE_GPRS LOCATION request - - - IMSI -	-
Positive results	GMM (ROUTEING AREA UPDATE ACCEPT) Routeing area identification Mobile station identity C Mobile station C Reject: IMSI unknown in HLR C Reject: MSC temporarily not reachable C Reject: GPRS services not allowed in this PLMN	MAP_UPDATE_GPRS LOCATION response - - - - - -	1 2 3 4 412
Negative results	GMM (ROUTEING AREA UPDATE REJECT) Network failure GPRS services not allowed in this PLMN GPRS services not allowed GPRS services and non GPRS services not allowed C GPRS services not allowed C GPRS services and non-GPRS services not allowed MS identity cannot be derived by the network GPRS services not allowed in this PLMN LA not allowed Roaming not allowed in this LA No Suitable cells in location area GPRS services not allowed in this PLMN Illegal MS Illegal ME Network failure Network failure Network failure Network failure Network failure	MAP_UPDATE_GPRS LOCATION response - Unknown HLR Unknown subscriber (no GPRS subscription) Unknown subscriber (IMSI unknown) Unknown subscriber (no GPRS subscription) Unknown subscriber (IMSI unknown) - Roaming not allowed: PLMN not allowed - - - Operator determined barring - - System Failure Unexpected data value MAP_U/P_ABORT MAP_NOTICE MAP_CLOSE	5 6 7 8 9 10 11

- NOTE 1: The mobile station identity is inserted by the SGSN if the SGSN wants to deallocate or re-allocate a P-TMSI. If the SGSN wants to deallocate the P-TMSI it shall include the IMSI. If the SGSN wants to re-allocate the P-TMSI it shall include the new P-TMSI. If a P-TMSI is included, the MS shall respond with a ROUTEING AREA UPDATE COMPLETE message.
- NOTE 2: The mobile station identity is inserted by the SGSN if it is received in a BSSAP+ LOCATION UPDATE ACCEPT message from the VLR. If a TMSI is included, the MS shall respond with a ROUTEING AREA UPDATE COMPLETE message. Only used in the Combined Routeing and Location Area procedure.
- NOTE 3: This reject cause is inserted on the positive response by the SGSN if the SGSN receives a BSSAP+ LOCATION UPDATE REJECT message from the VLR indicating in the reject cause IMSI unknown in HLR. Only used in the Combined Routeing and Location Area procedure.
- NOTE 4: This reject cause is inserted on the positive response by the SGSN if the SGSN does not receive any response from the VLR to a previous BSSAP+ LOCATION UPDATE REQUEST message. Only used in the Combined Routeing and Location Area procedure.
- NOTE 5: The Unknown RA error is only generated as a result of incorrect information being inserted by the BSS.
- NOTE 6: The HLR shall send Unknown subscriber with diagnostic value No GPRS subscription if the HLR indicates that there is an error in the type of subscription (i.e. SGSN requests service for a non-GPRS only subscriber). The HLR may also send this error in the MAP SEND AUTHENTICATION INFO RESPONSE message.
- NOTE 7: The HLR shall send Unknown subscriber with diagnostic value IMSI unknown if the HLR indicates that the IMSI provided by the SGSN is unknown.
- NOTE 8: The HLR shall send Unknown subscriber with diagnostic value No GPRS subscription if the HLR indicates that there is an error in the type of subscription (i.e. SGSN requests service for a non-GPRS only subscriber). Used in the Combined Routeing and Location Area procedure. The HLR may also send this error in the MAP SEND AUTHENTICATION INFO RESPONSE message.
- NOTE 9: This reject cause is inserted if the SGSN receives a MAP GPRS UPDATE LOCATION negative response message indicating IMSI unknown. Used in the Combined Routeing and Location Area procedure.
- NOTE 10: This reject cause is inserted if the SGSN does not receive any response from the old SGSN to a previous SGSN CONTEXT REQUEST message.
- NOTE 11: The 'No Suitable cells in location area' error is generated when the MS has access to only part of the PLMN e.g. due to Administrative Restriction of Subscribers' Access, but where there may also be suitable location areas available. The MS retries on another location area. The recommended cause due to Administrative Restriction of Subscriber's Access is "No Suitable Cells in Location Area", but also cause "LA not allowed", or "Roaming Not Allowed in this LA" may also be used, based on operator configuration.
- [NOTE 12: This reject cause is inserted if the SGSN receives in MAP INSERT SUBSCRIBER DATA message an indication of Roaming restricted in SGSN due to unsupported feature.](#)