

**Source:** TSG CN WG 1  
**Title:** CRs to R99 (with mirror CRs) on Work Item TEI towards 23.122  
**Agenda item:** 7.11  
**Document for:** APPROVAL

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**Introduction:**

This document contains 3 CRs on **R99 including mirror CRs to Work Item "TEI"**, that have been agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #17 for approval.

<b>Spec</b>	<b>CR #</b>	<b>Rev</b>	<b>CAT</b>	<b>Rel</b>	<b>Tdoc Title</b>	<b>Meeting</b>	<b>TDoc #</b>	<b>C Version</b>
23.122	053		F	R99	Routing Area Update at network change	N1-25	N1-021715	3.7.0
23.122	054		A	Rel-4	Routing Area Update at network change	N1-25	N1-021717	4.1.0
23.122	055		A	Rel-5	Routing Area Update at network change	N1-25	N1-021719	5.0.0

CR-Form-v7

## CHANGE REQUEST

⌘ **23.122 CR 053** ⌘ rev **-** ⌘ Current version: **3.7.0** ⌘

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

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

<b>Title:</b>	⌘ Routing Area Update at network change		
<b>Source:</b>	⌘ Orange France, Siemens AG		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 22/07/2002
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	2	(GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)	R96	(Release 1996)
	<b>B</b> (addition of feature),	R97	(Release 1997)
	<b>C</b> (functional modification of feature)	R98	(Release 1998)
	<b>D</b> (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)

<b>Reason for change:</b>	⌘ Currently, in TS23.122 the behaviour of an MS attached to the packet domain is not clear when entering a new PLMN. CR 275rev2 on TS23.060 (included in SP-010706 – SA#14) clarified that Routing Area Update procedure shall be performed in such a case (and not Attach procedure).
<b>Summary of change:</b>	⌘ It is indicated that Routing Area Update procedure is triggered when an MS enters a new PLMN.
<b>Consequences if not approved:</b>	⌘ Misalignment between R99 specifications and different MS behaviours.

<b>Clauses affected:</b>	⌘ §4.5.2								
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> </table>	Y	N	X				Other core specifications	⌘ 24.008
	Y	N							
	X								
Test specifications									
O&M Specifications									
<b>Other comments:</b>	⌘								

### How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under <ftp://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.

## 4.5.2 Initiation of Location Registration

An LR request indicating Normal Updating is made when, in idle mode,

- the MS changes cell while being in the update state NOT UPDATED; (for MS capable of GPRS and non-GPRS services when at least one of both update states is NOT UPDATED)
- the MS detects that it has entered a new registration area, i.e., when the received registration area identity differs from the one stored in the MS, and the LAI or the PLMN identity is not contained in any of the lists “forbidden LAs for roaming”, “forbidden LAs for regional provision of service”, “forbidden PLMNs for GPRS service” or “forbidden PLMNs” respectively, while being in one of the following update states:
  - UPDATED;
  - NOT UPDATED;
  - ROAMING NOT ALLOWED.
- the Periodic Location Updating Timer expires while being in the non-GPRS update state NOT UPDATED (triggers Location Updating);
- the Periodic Routing Area Update timer expires while being in the GPRS update state NOT UPDATED (triggers Routing Area Update);
- a manual network reselection has been performed, an acceptable cell of the selected PLMN is present, and the MS is not in the UPDATED state on the selected PLMN.

If a new PLMN is entered, a MS which is attached for PS services shall perform a routing area update if the LAI or the PLMN identity is not contained in any of the lists “forbidden LAs for roaming”, “forbidden LAs for regional provision of service”, “forbidden PLMNs for GPRS service” or “forbidden PLMNs” and if the current update status is different from "IDLE, NO IMSI".

An LR request indicating Periodic Location Updating is made when, in idle mode, the Periodic Location Updating timer expires while being in the non-GPRS update state UPDATED.

An LR request indicating Periodic Routing Area Update is made when the Periodic Routing Area Update timer expires while being in the GPRS update state UPDATED.

An LR request indicating IMSI attach is made when the MS is activated in the same location area in which it was deactivated while being in the non-GPRS update state UPDATED, and the system information indicates that IMSI attach/detach shall be used.

A GPRS attach is made by a GPRS MS when activated and capable of services which require registration. A GPRS attach may only be performed if the selected PLMN is not contained in the list of “forbidden PLMNs for GPRS service”. Depending on system information about GPRS network operation mode MSs operating in MS operation mode A or B perform combined or non-combined location registration procedures. When the combined routing area update or GPRS attach is accepted with indication “MSC not reachable” or is not answered the MS performs also the corresponding location updating procedure or falls back to a GPRS only MS. When the combined routing area update or GPRS attach is rejected with cause “GPRS not allowed” the GPRS update state is “IDLE, NO IMSI” and the MS performs the corresponding location updating procedure.

Furthermore, an LR request indicating Normal Location Updating is also made when the response to an outgoing request shows that the MS is unknown in the VLR or SGSN, respectively.

Table 2 in clause 5 summarizes the events in each state that trigger a new LR request. The actions that may be taken while being in the various states are also outlined in table 2.

A GPRS MS which is both IMSI attached for GPRS and non-GPRS services and which is capable of simultaneous operation of GPRS and non-GPRS services shall perform Routing Area Update in connected mode when it has entered a new routing area which is not part of a LA contained in the list of “forbidden LAs for roaming” or “forbidden LAs for regional provision of service”.

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## CHANGE REQUEST

⌘ **23.122 CR 054** ⌘ rev **-** ⌘ Current version: **4.1.0** ⌘

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

<b>Title:</b>	⌘ Routing Area Update at network change		
<b>Source:</b>	⌘ Orange France, Siemens AG		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 22/07/2002
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ Rel-4
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ Currently, in TS23.122 the behaviour of an MS attached to the packet domain is not clear when entering a new PLMN. CR 275rev2 on TS23.060 (included in SP-010706 – SA#14) clarified that Routing Area Update procedure shall be performed in such a case (and not Attach procedure).
<b>Summary of change:</b>	⌘ It is indicated that Routing Area Update procedure is triggered when an MS enters a new PLMN.
<b>Consequences if not approved:</b>	⌘ Misalignment between Rel-4 specifications and different MS behaviours.

<b>Clauses affected:</b>	⌘ §4.5.2								
<b>Other specs affected:</b>	<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;">X</td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X				⌘ TS24.008	
Y	N								
X									
<b>Other comments:</b>	⌘								

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## 4.5.2 Initiation of Location Registration

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- the MS detects that it has entered a new registration area, i.e., when the received registration area identity differs from the one stored in the MS, and the LAI or the PLMN identity is not contained in any of the lists of "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" respectively, while being in one of the following update states:
  - UPDATED;
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  - ROAMING NOT ALLOWED.
- the Periodic Location Updating Timer expires while being in the non-GPRS update state NOT UPDATED (triggers Location Updating);
- the Periodic Routing Area Update timer expires while being in the GPRS update state NOT UPDATED (triggers Routing Area Update);
- a manual network reselection has been performed, an acceptable cell of the selected PLMN is present, and the MS is not in the UPDATED state on the selected PLMN.

If a new PLMN is entered, a MS which is attached for PS services shall perform a routing area update if the LAI or the PLMN identity is not contained in any of the lists "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" and if the current update status is different from "IDLE, NO IMSI".

An LR request indicating Periodic Location Updating is made when, in idle mode, the Periodic Location Updating timer expires while being in the non-GPRS update state UPDATED.

An LR request indicating Periodic Routing Area Update is made when the Periodic Routing Area Update timer expires while being in the GPRS update state UPDATED.

An LR request indicating IMSI attach is made when the MS is activated in the same location area in which it was deactivated while being in the non-GPRS update state UPDATED, and the system information indicates that IMSI attach/detach shall be used.

A GPRS attach is made by a GPRS MS when activated and capable of services which require registration. A GPRS attach may only be performed if the selected PLMN is not contained in the list of "forbidden PLMNs for GPRS service". Depending on system information about GPRS network operation mode MSs operating in MS operation mode A or B perform combined or non-combined location registration procedures. When the combined routing area update or GPRS attach is accepted with indication "MSC not reachable" or is not answered the MS performs also the corresponding location updating procedure or falls back to a GPRS only MS. When the combined routing area update or GPRS attach is rejected with cause "GPRS not allowed" the GPRS update state is "IDLE, NO IMSI" and the MS performs the corresponding location updating procedure.

Furthermore, an LR request indicating Normal Location Updating is also made when the response to an outgoing request shows that the MS is unknown in the VLR or SGSN, respectively.

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CR-Form-v7

## CHANGE REQUEST

⌘ **23.122 CR 055** ⌘ rev **-** ⌘ Current version: **5.0.0** ⌘

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<b>Source:</b>	⌘ Orange France, Siemens AG		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 22/07/2002
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
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	<b>A</b> (corresponds to a correction in an earlier release)	R96	(Release 1996)
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<b>Reason for change:</b>	⌘ Currently, in TS23.122 the behaviour of an MS attached to the packet domain is not clear when entering a new PLMN. CR 275rev2 on TS23.060 (included in SP-010706 – SA#14) clarified that Routing Area Update procedure shall be performed in such a case (and not Attach procedure).
<b>Summary of change:</b>	⌘ It is indicated that Routing Area Update procedure is triggered when an MS enters a new PLMN.
<b>Consequences if not approved:</b>	⌘ Misalignment between Rel-5 specifications and different MS behaviours.

<b>Clauses affected:</b>	⌘ §4.5.2										
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Y	N										
X											
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