

TSG RAN Meeting #18
New Orleans, Louisiana, USA, 3 - 6 December, 2002

RP-020748

Title RAN3 Early UE CR 4 (R99 only) on Inclusion of UE Specific Behaviour Information in RANAP containers for usage by GSM-BSS
Source TSG RAN WG3
Agenda Item 8.7.11

The following CR is one of 5 CRs (provided in different RAN Tdocs) which:

- address the topic 'Early UE Handling in UTRAN' which is currently a Study Item in TSG RAN,
- have the status 'technically correct' at RAN WG3 instead of 'agreed' by RAN WG3,
- are provided to TSG RAN to give TSG RAN a base for agreeing about a solution,
- will need mirror CRs (REL-4, REL5) as soon as a solution is agreed at TSG RAN.

Note: 'technically correct' means 'correct' from a RAN WG3 point of view without making statements about the status of completeness of the solution regarding other RAN WGs (like RAN2) or TSGs (like CN1, CN4, GERAN).

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	REL	CR	Rev	Cat	Title	Work item
R3-022549	25.413	3.11.1	3.12.0	R99	539	-	F	Inclusion of UE Specific Behaviour Information in RANAP containers for usage in GSM-BSS	RANimp-FSEarlyUE

3GPP TSG-RAN3 Meeting #33
 Sophia Antipolis, France, November 11th – 15th 2002

Tdoc # R3-022549

CR-Form-v7	
CHANGE REQUEST	
# 25.413 CR 539 # rev - #	Current version: 3.11.1 #

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:	#	Inclusion of UE Specific Behaviour Information in RANAP containers for usage by GSM-BSS	
Source:	#	RAN WG3	
Work item code:	#	RANimp-FSEarlyUE	Date: # 12/11/2002
Category:	#	F	Release: # R99
		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 treats the case where RAN WG2 has standardised the use of RRC transparent container to convey the UE Specific Behaviour Information in intra-system and inter-system relocation/handover cases. It is not required if the GSM BSS does not need to use the UE Specific Behaviour Information for its own.
		UE Specific Behaviour Information sent by the UE and received by the RNC during RRC connection establishment needs to be forwarded via RANAP container(s) to target node during relocation in the UMTS-to-GSM handovers if the GSM BSS needs to use it for a possible specific behaviour such as e.g. subsequent GSM-to-UMTS handover procedure (there is no such BSS requirement today in GERAN) .
Summary of change:	#	UE Specific Behaviour Information (bitmap information) is added to "Old BSS To New BSS Information IE" for the case UMTS-to-GSM handovers.
		<u>Impact assessment towards the previous version of the specification (same release):</u>
		This CR has isolated impact towards the previous version of the specification (same release).
		This CR has an impact under protocol point of view.
		The impact can be considered isolated because it does not affect any existing functionality.

Consequences if not approved:	⌘	The UE Specific Behaviour Information will not be available to UTRAN after a relocation.									
Clauses affected:	⌘	8.6.2									
Other specs affected:	⌘	<table border="1"> <thead> <tr> <th>Y</th> <th>N</th> </tr> </thead> <tbody> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </tbody> </table>	Y	N	X			X		X	Other core specifications ⌘ TS 25.413 REL-4, CRnum TS 25.413 REL-5, CRnum 25.331 and 08.08 Test specifications O&M Specifications
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.

8.6 Relocation Preparation

8.6.1 General

The purpose of the Relocation Preparation procedure is to prepare relocation of SRNS either with involving UE or without involving UE. The relocation procedure shall be co-ordinated in all Iu signalling connections existing for the UE in order to allow Relocation co-ordination in the target RNC. The procedure uses connection oriented signalling.

The source RNC shall not initiate the Relocation Preparation procedure for an Iu signalling connection if a Prepared Relocation exists in the RNC for that Iu signalling connection or if a Relocation Preparation procedure is ongoing for that Iu signalling connection.

8.6.2 Successful Operation

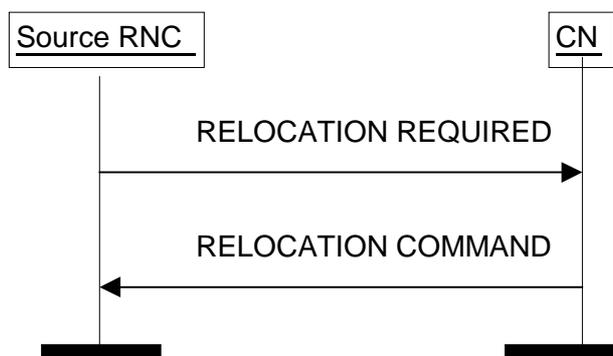


Figure 5: Relocation Preparation procedure. Successful operation.

The source RNC shall initiate the procedure by generating RELOCATION REQUIRED message. The source RNC shall decide whether to initiate the intra-system Relocation or the inter-system handover. In case of intra-system Relocation the source RNC shall indicate in the *Source ID* IE the RNC-ID of the source RNC and in the *Target ID* IE the RNC-ID of the target RNC. In case of inter-system handover the source RNC shall indicate in the *Source ID* IE the Service Area Identifier and in the *Target ID* IE the cell global identity of the cell in the target system. The source RNC shall indicate the appropriate cause value for the Relocation in the *Cause* IE. Typical cause values are "Time critical Relocation", "Resource optimisation relocation", "Relocation desirable for radio reasons", "Directed Retry".

The source RNC shall determine whether the relocation of SRNS shall be executed with or without involvement of UE. The source RNC shall set the *Relocation Type* IE accordingly to "UE involved in relocation of SRNS" or "UE not involved in relocation of SRNS".

In case of intra-system Relocation, the source RNC shall include in the RELOCATION REQUIRED message the *Source RNC to Target RNC Transparent Container* IE. This container shall include the *Relocation Type* IE and the number of Iu signalling connections existing for the UE by setting correctly the *Number of Iu Instances* IE.

Only in case of intra-system relocation, the *Source RNC-to-Target RNC transparent container* IE shall include the *Integrity Protection Key* IE from the last received domain on which security mode control procedure has been successfully performed and the associated *Chosen Integrity Protection Algorithm* IE that has been selected for this domain.

Only in case of intra-system relocation, the *Source RNC-to-Target RNC transparent container* IE shall include the *Ciphering Key* IE for the signalling data from the last received domain on which security mode control procedure has been successfully performed and the associated *Chosen Encryption Algorithm* IE that has been selected for this domain.

Only in case of intra-system relocation, for each domain where the security mode control procedure has been successfully performed in the source RNC, the *Source RNC-to-Target RNC transparent container* IE shall include the *Chosen Encryption Algorithm* IE of CS (PS respectively) user data corresponding to the ciphering alternative that has been selected for this domain. If the security mode control procedure had not been successful or performed for one domain or had proposed no ciphering alternative, the *Chosen Encryption Algorithm* IE for the user data of this domain shall not be included. When both the CS and the PS user data *Chosen Encryption Algorithm* IEs are provided, they shall be the same.

This container shall include the *RRC Container* IE. If the *Relocation Type* IE is set to "UE not involved in relocation of SRNS" and the UE is using DCH(s), DSCH(s) or USCH(s), the *Source RNC to Target RNC Transparent Container* IE shall include the mapping between each RAB subflow and transport channel identifier(s), i.e. if the RAB is carried on a DCH(s), the DCH ID(s) shall be included, and when it is carried on DSCH(s) or USCH(s), the DSCH ID(s) or USCH ID(s) respectively shall be included. If the *Relocation Type* IE is set to "UE not involved in relocation of SRNS", the *d-RNTI* IE shall be included in the *Source RNC to Target RNC Transparent Container* IE. If the *Relocation Type* IE is set to "UE involved in relocation of SRNS", the *Target Cell ID* IE shall be included in the *Source RNC to Target RNC Transparent Container* IE.

If UE Specific Behaviour Information is available, the *UE Specific Behaviour Information* IE shall be included in the *Old BSS To New BSS Information* IE in case of inter-system handover to GSM.

In case of inter-system handover to GSM the RNC:

- shall include *MS Classmark 2* and *MS Classmark 3* IEs received from the UE in the RELOCATION REQUIRED message to the CN.
- shall include the *Old BSS to New BSS* IE within the RELOCATION REQUIRED message only if the information is available.

The source RNC shall send the RELOCATION REQUIRED message to the CN and the source RNC shall start the timer $T_{\text{RELOCprep}}$.

When the preparation including resource allocation in the target system is ready and the CN has decided to continue the relocation of SRNS, the CN shall send RELOCATION COMMAND message to the source RNC and the CN shall start the timer $T_{\text{RELOCcomplete}}$.

If the *Target RNC To Source RNC Transparent Container* IE or the *L3 information* IE is received by the CN from the relocation target, it shall be included in the RELOCATION COMMAND message.

For each RAB successfully established in the target system and originating from the PS domain, the RELOCATION COMMAND message shall contain Iu transport address and Iu transport association to be used for the forwarding of the DL N-PDU duplicates towards the relocation target. Upon reception of the RELOCATION COMMAND message from the PS domain, the source RNC shall start the timer T_{DATAfwd} .

The Relocation Preparation procedure is terminated in the CN by transmission of RELOCATION COMMAND message.

If the target system (including target CN) does not support all existing RABs, the RELOCATION COMMAND message shall contain a list of RABs indicating all the RABs that are not supported by the target system. This list is contained in the *RABs to Be Released* IE. The source RNC shall use this information to avoid transferring associated contexts where applicable and may use this information e.g. to decide if to cancel the relocation or not. The resources associated with these not supported RABs shall not be released until the relocation is completed. This is in order to make a return to the old configuration possible in case of a failed or cancelled relocation.

Upon reception of RELOCATION COMMAND message the source RNC shall stop the timer $T_{\text{RELOCprep}}$, RNC shall start the timer $T_{\text{RELOCoverall}}$ and RNC shall terminate the Relocation Preparation procedure. The source RNC is then defined to have a Prepared Relocation for that Iu signalling connection.

When Relocation Preparation procedure is terminated successfully and when the source RNC is ready, the source RNC should trigger the execution of relocation of SRNS.

Interactions with other procedures:

If, after RELOCATION REQUIRED message is sent and before the Relocation Preparation procedure is terminated, the source RNC receives a RANAP message initiating an other connection oriented RANAP class 1 or class 3 procedure (except IU RELEASE COMMAND message, which shall be handled normally) via the same Iu signalling connection, the source RNC shall either:

1. cancel the Relocation Preparation procedure i.e. execute Relocation Cancel procedure with an appropriate value for the *Cause* IE, e.g. "Interaction with other procedure", and after successful completion of Relocation Cancel procedure, the source RNC shall continue the initiated RANAP procedure;

or

2. terminate the initiated RANAP procedure without any changes in UTRAN by sending appropriate response message with the cause value "Relocation Triggered" to the CN. The source RNC shall then continue the relocation of SRNS.

If during the Relocation Preparation procedure the source RNC receives a DIRECT TRANSFER message it shall be handled normally.

If during the Relocation Preparation procedure the source RNC receives connection oriented RANAP class 2 messages (with the exception of DIRECT TRANSFER message) it shall decide to either execute the procedure immediately or suspend it. In the case the relocation is cancelled the RNC shall resume any suspended procedures (if any).

After Relocation Preparation procedure is terminated successfully, all RANAP messages (except IU RELEASE COMMAND message, which shall be handled normally) received via the same Iu signalling bearer shall be ignored by the source RNC.