Source: **TSG CN WG 1**

Title: **CRs to R99 (with mirror CRs) on Work Item GSM/UMTS interworking towards 23.009**

Agenda item: **7.6**

Document for: **APPROVAL**

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

This document contains **3** CRs, **R99 with mirror CRs to** Work Item **" GSM/UMTS interworking"**, that have been agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #18 for approval.

Spec	CR #	Rev	CAT	Rel	Tdoc Title	Meeting	TDoc #	C_Version
23.009	088		F	R99	Clarification of the protocol to be used on the E-interface	N1-27	N1-022234	3.11.0
23.009	089		A	Rel-4	Clarification of the protocol to be used on the E-interface	N1-27	N1-022235	4.5.0
23.009	090		A	Rel-5	Clarification of the protocol to be used on the E-interface	N1-27	N1-022236	5.2.0

3GPP TSG-CN1 Meeting #27 *Tdoc N1-022234*
Bangkok, Thailand, 11 – 15 November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **23.009** CR **088** ⌘ **rev** **-** ⌘ Current version: **3.11.0** ⌘

*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 **X**

Title: ⌘	Clarification of the protocol to be used on the E-interface	
Source: ⌘	Siemens AG	
Work item code: ⌘	GSM/UMTS interworking	***Date:*** ⌘ 04.11.2002
Category: ⌘ **F**		***Release:*** ⌘ R99

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, TS 23.009, clause 7 specifies that after a basic GSM to GSM inter-MSC handover, "in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B' the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first list item)."
	Strictly speaking, the Relocation Resource Allocation procedure consists only of the messages Relocation Request, Relocation Request Acknowledge and Relocation Failure. But according to TS 29.010, the RANAP messages Relocation Cancel and Relocation Cancel Ack can also be used during the subsequent relocation.
	Furthermore, the MAP Prepare Subsequent Handover request can transfer also a trace related message for which according to TS 29.010 the RANAP message CN Invoke Trace has also to be used.
	Besides it should be clarified that the protocol for the transfer of NAS signalling messages (DTAP or RANAP Direct Transfer) is not affected by the subsequent inter-MSC SRNS relocation procedure.
	A corresponding clarification is needed in subclauses 8.1, 8.2, and 8.3, where the protocol principles for the intersystem handover and inter-MSC SRNS relocation are specified.
Summary of change: ⌘	Clarification of the protocol to be used for the transfer of
	- NAS messages during resource allocation (DTAP or RANAP Direct Transfer)
	- trace related messages
	- the messages to cancel a subsequent inter-MSC handover/relocation during

		the resource allocation
Consequences if not approved:	⌘	Inconsistencies between TS 23.009 and TS 29.010. If the wrong protocol is used via the E interface, the receiving MSC will discard the messages. This means, e.g., that tracing in the target RNC cannot be activated, the resource allocation cannot be cancelled, or CC or MM signalling is no longer possible.

Clauses affected:	⌘	7, 8.1, 8.2, 8.3			

		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.

7 General description of the procedures for inter - MSC handovers

The following subclauses describe two options for the Basic and Subsequent Handover procedures. The first, as described in subclauses 7.1 and 7.3 respectively, provides for a circuit connection between MSC-A and MSC-B. The second, as described in subclauses 7.2 and 7.4 respectively, provides for a Basic and Subsequent Handover without the provision of a circuit connection between MSC-A and MSC-B.

In all the above mentioned subclauses, the following principles apply:

- during the handover resource allocation, only the handover related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - can be sent by the MSC-A on the E-interface after successful handover resource allocation. In the subclauses 7.1 and 7.2, it is however allowed at basic handover initiation on the E-Interface to transfer one trace related message that is part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - together with the applicable handover related message. The applicable handover related message shall always appear as the first message;

- during the handover resource allocation for subsequent inter-MSC handover according to subclauses 7.3 and 7.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between MSC-A and MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the handover execution, ie while the MS is not in communication with the network, the MSC-A shall queue all outgoing BSSAP or RANAP messages until the communication with the MS is resumed;

- finally, during supervision, ie while the MS is not in the area of MSC-A after a successful Inter-MSC handover, the subset of BSSAP procedures and their related messages - as defined in 3GPP TS 09.08 [7] - shall apply on the E-Interface. As the only exception to this rule, in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B', during the relocation resource allocation, the relocation and trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first and second list item).

NOTE: A subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B' can occur, e.g., if after the basic inter-MSC handover to 3G_MSC-B the MS performed a subsequent intra-3G_MSC-B GSM to UMTS inter-system handover;

- during the intra-MSC-B handover execution, if any, the MSC-B shall queue all outgoing BSSAP messages until the communication with the MS is resumed.

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

8.1 Handover UMTS to GSM

The following subclauses describe two options for the Basic and Subsequent UMTS to GSM Handover procedures. The first, as described in subclauses 8.1.1 and 8.1.3 respectively, provides for a circuit connection between 3G_MSC-A and 3G_MSC-B. The second, as described in subclauses 8.1.2 and 8.1.4 respectively, provides for a Basic and Subsequent Handover without the provision of a circuit connection between 3G_MSC-A and 3G_MSC-B. 3G_MSC can also be a pure GSM MSC.

In all the above mentioned subclauses, the following principles apply:

- during the handover resource allocation, only the handover related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08- can be sent by the 3G_MSC-A on the E-interface after successful handover resource allocation. In the subclauses 8.1.1 and 8.1.2, it is however allowed at basic handover initiation on the E-Interface to transfer one trace related message that is part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - together with the applicable handover related message. The applicable handover related message shall always appear as the first message;

- during the handover resource allocation for subsequent inter-MSC inter-system handover according to subclauses 8.1.3 and 8.1.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between 3G_MSC-A and 3G_MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the handover execution, i.e. while the UE/MS is not in communication with the network, the 3G_MSC-A shall queue all outgoing BSSAP or RANAP/Direct Transfer messages until the communication with the UE/MS is resumed;

- finally, during supervision, i.e. while the UE/MS is not in the area of 3G_MSC-A after a successful Inter-3G_MSC handover, the subset of BSSAP procedures and their related messages - as defined in 3GPP TS 09.08 [7] - shall apply on the E-Interface. As the only exception to this rule, in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B', during the relocation resource allocation, the relocation and trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first and second list item).

NOTE: A subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B' can occur, e.g., if after the basic inter-MSC handover to 3G_MSC-B the MS performed a subsequent intra-3G_MSC-B GSM to UMTS inter-system handover.

If a subsequent inter-MSC handover/relocation back to 3G_MSC-A or to a third 3G_MSC-B' is cancelled, then the supervision continues, and BSSAP procedures and their related messages shall apply on the E-interface;

- during the intra-3G_MSC -B handover execution, if any, the 3G_MSC -B shall queue all outgoing BSSAP or RANAP messages until the communication with the UE/MS is resumed.

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

8.2   Handover GSM to UMTS

The following subclauses describe two options for the Basic and Subsequent GSM to UMTS Handover procedures. The first, as described in subclauses 8.2.1 and 8.2.3 respectively, provides for a circuit connection between (3G_)MSC-A and (3G_)MSC-B. The second, as described in subclauses 8.2.2 and 8.2.4 respectively, provides for a Basic and Subsequent Handover without the provision of a circuit connection between (3G_)MSC-A and (3G_)MSC-B. In all the above mentioned subclauses, the following principles apply:

- during the handover resource allocation, only the handover related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - can be sent by the MSC-A on the E-interface after successful handover resource allocation. In the subclauses 8.2.1 and 8.2.2, it is however allowed at basic handover initiation on the E-Interface to transfer one trace related message that is part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - together with the applicable handover related message. The applicable handover related message shall always appear as the first message;

- If 3G_MSC-B or 3G-MSC-B' supports location reporting at change of Service Area, 3G_MSC-B or 3G_MSC-B' shall always initiate the Location Reporting Control procedure at change of Service Area towards the target RNS since no request for Location Reporting can be received from MSC-A. In that case, the Location Reporting Control procedure shall be initiated by 3G_MSC-B or 3G-MSC-B' after the Relocation Resource Allocation procedure has been executed successfully. The change of Service Area shall be reported to MSC-A within an A-HANDOVER-PERFORMED message.

-   during the handover resource allocation for subsequent inter-MSC inter-system handover according to subclauses 8.2.3 and 8.2.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between MSC-A and 3G_MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

-   during the handover execution, i.e. while the UE/MS is not in communication with the network, the MSC-A shall queue all outgoing BSSAP or RANAP messages until the communication with the UE/MS is resumed;

-   finally, during supervision, i.e. while the UE/MS is not in the area of MSC-A after a successful Inter-3G_MSC GSM to UMTS handover, the subset of BSSAP procedures and their related messages - as defined in 3GPP TS 09.08 [7] - shall apply on the E-Interface. As the only exception to this rule, in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B', during the relocation resource allocation, the relocation and trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first and second list item).

    If a subsequent inter-MSC handover/relocation back to 3G_MSC-A or to a third 3G_MSC-B' is cancelled, then the supervision continues, and BSSAP procedures and their related messages shall apply on the E-interface;

-   during the intra-3G_MSC-B GSM to UMTS handover execution, if any, the 3G_MSC-B shall queue all outgoing BSSAP or Direct Transfer RANAP messages until the communication with the UE/MS is resumed.

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

8.3   SRNS Relocation

The following subclauses describe two options for the Basic and Subsequent Relocation procedures. The first, as described in subclauses 8.3.1 and 8.3.3 respectively, provides for a circuit connection between 3G_MSC-A and 3G_MSC-B. The second, as described in subclauses 8.3.2 and 8.3.4 respectively, provides for a Basic and Subsequent Relocation without the provision of a circuit connection between 3G_MSC-A and 3G_MSC-B.

In all the above mentioned subclauses, the following principles apply:

-   during the relocation resource allocation, only the relocationhandover related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface;

-   the trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - can be sent by the 3G_MSC-A on the E-interface after successful relocation resource allocation. In the subclauses 8.3.1 and 8.3.2, it is however allowed at basic relocation initiation on the E-Interface to transfer one trace related message that is part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - together with the applicable relocation related message. The applicable relocation related message shall always appear as the first message;

-   during the handover resource allocation for subsequent inter-MSC inter-system handover according to subclauses 8.3.3 and 8.3.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between MSC-A and 3G_MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

-   during the relocation execution, i.e. while the UE is not in communication with the network, the 3G_MSC-A shall queue all outgoing RANAP or BSSAP messages until the communication with the UE is resumed;

-   finally, during supervision, i.e. while the UE is not in the area of 3G_MSC-A after a successful Inter-3G_MSC relocation, the subset of RANAP procedures and their related messages - as defined in 3GPP TS 29.108 [15] - shall apply on the E-Interface. As an exception to this rule, 3G_MSC-B shall notify 3G_MSC-A of a successfully completed subsequent intra-MSC intra GSM or inter-system handover by using the Internal Handover Indication procedure as specified in 3GPP TS 09.08 [7]. Furthermore, in case of a subsequent inter-MSC intra GSM or inter-system handover back to 3G_MSC-A or to a third 3G_MSC-B', during the handover resource allocation, the handover and trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface the Handover Resource Allocation procedure as specified in 3GPP TS TS 09.08 [7] shall apply (see first and second list item in clause 7, subclause 8.1, and 8.2, respectively).

NOTE: A subsequent inter-MSC intra GSM or GSM to UMTS inter-system handover back to 3G_MSC-A or to a third 3G_MSC-B' can occur, e.g., if after the basic inter-MSC SRNS relocation to 3G_MSC-B the MS performed a subsequent intra-3G_MSC-B UMTS to GSM inter-system handover.

If a subsequent inter-MSC handover/relocation back to 3G_MSC-A or to a third 3G_MSC-B' is cancelled, then the supervision continues, and RANAP procedures and their related messages shall apply on the E-interface;

- during the intra-3G_MSC-B relocation execution, if any, the 3G_MSC-B shall queue all outgoing RANAP messages until the communication with the UE is resumed.

- after successful completion of the Intra-3G_MSC-B relocation, if 3G_MSC-B or 3G-MSC-B' has previously received an order to perform location reporting at change of Service Area from 3G_MSC-A, it shall act as specified in subclause 6.2.3.

CR-Form-v7

CHANGE REQUEST

⌘   **23.009** CR **089**   ⌘**rev**   **-**   ⌘   Current version: **4.5.0** ⌘

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 **X**

Title:	⌘	Clarification of the protocol to be used on the E-interface
Source:	⌘	Siemens AG

Work item code:⌘	GSM/UMTS interworking		**Date:** ⌘	04.11.2002

Category: ⌘ **A**   **Release:** ⌘ Rel-4

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: ⌘   Currently, TS 23.009, clause 7 specifies that after a basic GSM to GSM inter-MSC handover, "in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B' the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first list item)."

Strictly speaking, the Relocation Resource Allocation procedure consists only of the messages Relocation Request, Relocation Request Acknowledge and Relocation Failure. But according to TS 29.010, the RANAP messages Relocation Cancel and Relocation Cancel Ack can also be used during the subsequent relocation.

Furthermore, the MAP Prepare Subsequent Handover request can transfer also a trace related message for which according to TS 29.010 the RANAP message CN Invoke Trace has also to be used.

Besides it should be clarified that the protocol for the transfer of NAS signalling messages (DTAP or RANAP Direct Transfer) is not affected by the subsequent inter-MSC SRNS relocation procedure.

A corresponding clarification is needed in subclauses 8.1, 8.2, and 8.3, where the protocol principles for the intersystem handover and inter-MSC SRNS relocation are specified.

Summary of change:⌘   Clarification of the protocol to be used for the transfer of
- NAS messages during resource allocation (DTAP or RANAP Direct Transfer)
- trace related messages
- the messages to cancel a subsequent inter-MSC handover/relocation during

			the resource allocation
Consequences if not approved:	⌘	Inconsistencies between TS 23.009 and TS 29.010. If the wrong protocol is used via the E interface, the receiving MSC will discard the messages. This means, e.g., that tracing in the target RNC cannot be activated, the resource allocation cannot be cancelled, or CC or MM signalling is no longer possible.	

		Y	N		
Clauses affected:	⌘	7, 8.1, 8.2, 8.3			
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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7 General description of the procedures for inter - MSC handovers

The following clauses describe two options for the Basic and Subsequent Handover procedures. The first, as described in clauses 7.1 and 7.3 respectively, provides for a circuit connection between MSC-A and MSC-B. The second, as described in clauses 7.2 and 7.4 respectively, provides for a Basic and Subsequent Handover without the provision of a circuit connection between MSC-A and MSC-B.

In all the above mentioned clauses, the following principles apply:

- during the handover resource allocation, only the handover related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - can be sent by the MSC-A on the E-interface after successful handover resource allocation. In the clauses 7.1 and 7.2, it is however allowed at basic handover initiation on the E-Interface to transfer one trace related message that is part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - together with the applicable handover related message. The applicable handover related message shall always appear as the first message;

- during the handover resource allocation for subsequent inter-MSC handover according to subclauses 7.3 and 7.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between MSC-A and MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the handover execution, ie while the MS is not in communication with the network, the MSC-A shall queue all outgoing BSSAP or RANAP messages until the communication with the MS is resumed;

- finally, during supervision, ie while the MS is not in the area of MSC-A after a successful Inter-MSC handover, the subset of BSSAP procedures and their related messages - as defined in 3GPP TS 09.08 [7] - shall apply on the E-Interface. As the only exception to this rule, in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B', during the relocation resource allocation, the relocation and trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first and second list item).

NOTE: A subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B' can occur, e.g., if after the basic inter-MSC handover to 3G_MSC-B the MS performed a subsequent intra-3G_MSC-B GSM to UMTS inter-system handover;

- during the intra-MSC-B handover execution, if any, the MSC-B shall queue all outgoing BSSAP messages until the communication with the MS is resumed.

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

8.1 Handover UMTS to GSM

The following clauses describe two options for the Basic and Subsequent UMTS to GSM Handover procedures. The first, as described in clauses 8.1.1 and 8.1.3 respectively, provides for a circuit connection between 3G_MSC-A and 3G_MSC-B. The second, as described in clauses 8.1.2 and 8.1.4 respectively, provides for a Basic and Subsequent Handover without the provision of a circuit connection between 3G_MSC-A and 3G_MSC-B. 3G_MSC can also be a pure GSM MSC.

In all the above mentioned clauses, the following principles apply:

- during the handover resource allocation, only the handover related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08- can be sent by the 3G_MSC-A on the E-interface after successful handover resource allocation. In the clauses 8.1.1 and 8.1.2, it is however allowed at basic handover initiation on the E-Interface to transfer one trace related message that is part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - together with the applicable handover related message. The applicable handover related message shall always appear as the first message;

- during the handover resource allocation for subsequent inter-MSC inter-system handover according to subclauses 8.1.3 and 8.1.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between 3G_MSC-A and 3G_MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the handover execution, i.e. while the UE/MS is not in communication with the network, the 3G_MSC-A shall queue all outgoing BSSAP or RANAP/Direct Transfer messages until the communication with the UE/MS is resumed;

- finally, during supervision, i.e. while the UE/MS is not in the area of 3G_MSC-A after a successful Inter-3G_MSC handover, the subset of BSSAP procedures and their related messages - as defined in 3GPP TS 09.08 [7] - shall apply on the E-Interface. As the only exception to this rule, in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B', during the relocation resource allocation, the relocation and trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first and second list item).

NOTE: A subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B' can occur, e.g., if after the basic inter-MSC handover to 3G_MSC-B the MS performed a subsequent intra-3G_MSC-B GSM to UMTS inter-system handover.

If a subsequent inter-MSC handover/relocation back to 3G_MSC-A or to a third 3G_MSC-B' is cancelled, then the supervision continues, and BSSAP procedures and their related messages shall apply on the E-interface;

- during the intra-3G_MSC -B handover execution, if any, the 3G_MSC -B shall queue all outgoing BSSAP or RANAP messages until the communication with the UE/MS is resumed.

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

8.2   Handover GSM to UMTS

The following clauses describe two options for the Basic and Subsequent GSM to UMTS Handover procedures. The first, as described in clauses 8.2.1 and 8.2.3 respectively, provides for a circuit connection between (3G_)MSC-A and (3G_)MSC-B. The second, as described in clauses 8.2.2 and 8.2.4 respectively, provides for a Basic and Subsequent Handover without the provision of a circuit connection between (3G_)MSC-A and (3G_)MSC-B. In all the above mentioned clauses, the following principles apply:

- during the handover resource allocation, only the handover related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - can be sent by the MSC-A on the E-interface after successful handover resource allocation. In the clauses 8.2.1 and 8.2.2, it is however allowed at basic handover initiation on the E-Interface to transfer one trace related message that is part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - together with the applicable handover related message. The applicable handover related message shall always appear as the first message;

- if 3G_MSC-B or 3G-MSC-B' supports location reporting at change of Service Area, 3G_MSC-B or 3G_MSC-B' shall always initiate the Location Reporting Control procedure at change of Service Area towards the target RNS since no request for Location Reporting can be received from MSC-A. In that case, the Location Reporting Control procedure shall be initiated by 3G_MSC-B or 3G-MSC-B' after the Relocation Resource Allocation procedure has been executed successfully. The change of Service Area shall be reported to MSC-A within an A-HANDOVER-PERFORMED message;

- during the handover resource allocation for subsequent inter-MSC inter-system handover according to subclauses 8.2.3 and 8.2.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-

Interface between MSC-A and 3G_MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the handover execution, i.e. while the UE/MS is not in communication with the network, the MSC-A shall queue all outgoing BSSAP or RANAP messages until the communication with the UE/MS is resumed;

- finally, during supervision, i.e. while the UE/MS is not in the area of MSC-A after a successful Inter-3G_MSC GSM to UMTS handover, the subset of BSSAP procedures and their related messages - as defined in 3GPP TS 09.08 [7] - shall apply on the E-Interface. As the only exception to this rule, in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B', during the relocation resource allocation, the relocation and trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first and second list item).

If a subsequent inter-MSC handover/relocation back to 3G_MSC-A or to a third 3G_MSC-B' is cancelled, then the supervision continues, and BSSAP procedures and their related messages shall apply on the E-interface;

- during the intra-3G_MSC-B GSM to UMTS handover execution, if any, the 3G_MSC-B shall queue all outgoing BSSAP or Direct Transfer RANAP messages until the communication with the UE/MS is resumed.

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

8.3   SRNS Relocation

The following clauses describe two options for the Basic and Subsequent Relocation procedures. The first, as described in clauses 8.3.1 and 8.3.3 respectively, provides for a circuit connection between 3G_MSC-A and 3G_MSC-B. The second, as described in clauses 8.3.2 and 8.3.4 respectively, provides for a Basic and Subsequent Relocation without the provision of a circuit connection between 3G_MSC-A and 3G_MSC-B.

In all the above mentioned clauses, the following principles apply:

- during the relocation resource allocation, only the relocationhandover related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - can be sent by the 3G_MSC-A on the E-interface after successful relocation resource allocation. In the clauses 8.3.1 and 8.3.2, it is however allowed at basic relocation initiation on the E-Interface to transfer one trace related message that is part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - together with the applicable relocation related message. The applicable relocation related message shall always appear as the first message;

- during the handover resource allocation for subsequent inter-MSC inter-system handover according to subclauses 8.3.3 and 8.3.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between MSC-A and 3G_MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the relocation execution, i.e. while the UE is not in communication with the network, the 3G_MSC-A shall queue all outgoing RANAP or BSSAP messages until the communication with the UE is resumed;

- finally, during supervision, i.e. while the UE is not in the area of 3G_MSC-A after a successful Inter-3G_MSC relocation, the subset of RANAP procedures and their related messages - as defined in 3GPP TS 29.108 [15] - shall apply on the E-Interface. As an exception to this rule, 3G_MSC-B shall notify 3G_MSC-A of a successfully completed subsequent intra-MSC-B intra GSM or inter-system handover by using the Internal Handover Indication procedure as specified in 3GPP TS 09.08 [7]. Furthermore, in case of a subsequent inter-MSC intra GSM or inter-system handover back to 3G_MSC-A or to a third 3G_MSC-B', during the handover resource allocation, the handover and trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface the Handover Resource Allocation procedure as specified in 3GPP TS TS 09.08 [7] shall apply (see first and second list item in clause 7, subclause 8.1, and 8.2, respectively).;

NOTE: A subsequent inter-MSC intra GSM or GSM to UMTS inter-system handover back to 3G_MSC-A or to a third 3G_MSC-B' can occur, e.g., if after the basic inter-MSC SRNS relocation to 3G_MSC-B the MS performed a subsequent intra-3G_MSC-B UMTS to GSM inter-system handover.

If a subsequent inter-MSC handover/relocation back to 3G_MSC-A or to a third 3G_MSC-B' is cancelled, then the supervision continues, and RANAP procedures and their related messages shall apply on the E-interface;

- during the intra-3G_MSC-B relocation execution, if any, the 3G_MSC-B shall queue all outgoing RANAP messages until the communication with the UE is resumed;

- after successful completion of the Intra-3G_MSC-B relocation, if 3G_MSC-B or 3G-MSC-B' has previously received an order to perform location reporting at change of Service Area from 3G_MSC-A, it shall act as specified in subclause 6.2.3.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **23.009** CR **090** | ⌘ **rev** | **-** | ⌘ | Current version: | **5.2.0** | ⌘ |

*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 **X**

Title: ⌘	Clarification of the protocol to be used on the E-interface	
Source: ⌘	Siemens AG	
Work item code: ⌘	GSM/UMTS interworking	**Date:** ⌘ 04.11.2002
Category: ⌘ **A**		**Release:** ⌘ Rel-5

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, TS 23.009, clause 7 specifies that after a basic GSM to GSM inter-MSC handover, "in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B' the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first list item)."
	Strictly speaking, the Relocation Resource Allocation procedure consists only of the messages Relocation Request, Relocation Request Acknowledge and Relocation Failure. But according to TS 29.010, the RANAP messages Relocation Cancel and Relocation Cancel Ack can also be used during the subsequent relocation.
	Furthermore, the MAP Prepare Subsequent Handover request can transfer also a trace related message for which according to TS 29.010 the RANAP message CN Invoke Trace has also to be used.
	Besides it should be clarified that the protocol for the transfer of NAS signalling messages (DTAP or RANAP Direct Transfer) is not affected by the subsequent inter-MSC SRNS relocation procedure.
	A corresponding clarification is needed in subclauses 8.1, 8.2, and 8.3, where the protocol principles for the intersystem handover and inter-MSC SRNS relocation are specified.
Summary of change: ⌘	Clarification of the protocol to be used for the transfer of
	- NAS messages during resource allocation (DTAP or RANAP Direct Transfer)
	- trace related messages
	- the messages to cancel a subsequent inter-MSC handover/relocation during

		the resource allocation		
Consequences if not approved:	⌘	Inconsistencies between TS 23.009 and TS 29.010. If the wrong protocol is used via the E interface, the receiving MSC will discard the messages. This means, e.g., that tracing in the target RNC cannot be activated, the resource allocation cannot be cancelled, or CC or MM signalling is no longer possible.		

Clauses affected:	⌘	7, 8.1, 8.2, 8.3				

		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.

7 General description of the procedures for inter - MSC handovers

The following clauses describe two options for the Basic and Subsequent Handover procedures. The first, as described in clauses 7.1 and 7.3 respectively, provides for a circuit connection between MSC-A and MSC-B. The second, as described in clauses 7.2 and 7.4 respectively, provides for a Basic and Subsequent Handover without the provision of a circuit connection between MSC-A and MSC-B.

In all the above mentioned clauses, the following principles apply:

- during the handover resource allocation, only the handover related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - can be sent by the MSC-A on the E-interface after successful handover resource allocation. In the clauses 7.1 and 7.2, it is however allowed at basic handover initiation on the E-Interface to transfer one trace related message that is part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - together with the applicable handover related message. The applicable handover related message shall always appear as the first message;

- during the handover resource allocation for subsequent inter-MSC handover according to subclauses 7.3 and 7.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between MSC-A and MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the handover execution, ie while the MS is not in communication with the network, the MSC-A shall queue all outgoing BSSAP or RANAP messages until the communication with the MS is resumed;

- finally, during supervision, ie while the MS is not in the area of MSC-A after a successful Inter-MSC handover, the subset of BSSAP procedures and their related messages - as defined in 3GPP TS 09.08 [7] - shall apply on the E-Interface. As the only exception to this rule, in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B', during the relocation resource allocation, the relocation and trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first and second list item).

NOTE: A subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B' can occur, e.g., if after the basic inter-MSC handover to 3G_MSC-B the MS performed a subsequent intra-3G_MSC-B GSM to UMTS inter-system handover;

- during the intra-MSC-B handover execution, if any, the MSC-B shall queue all outgoing BSSAP messages until the communication with the MS is resumed.

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

8.1 Handover UMTS to GSM

The following clauses describe two options for the Basic and Subsequent UMTS to GSM Handover procedures. The first, as described in clauses 8.1.1 and 8.1.3 respectively, provides for a circuit connection between 3G_MSC-A and 3G_MSC-B. The second, as described in clauses 8.1.2 and 8.1.4 respectively, provides for a Basic and Subsequent Handover without the provision of a circuit connection between 3G_MSC-A and 3G_MSC-B. 3G_MSC can also be a pure GSM MSC.

In all the above mentioned clauses, the following principles apply:

- during the handover resource allocation, only the handover related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08- can be sent by the 3G_MSC-A on the E-interface after successful handover resource allocation. In the clauses 8.1.1 and 8.1.2, it is however allowed at basic handover initiation on the E-Interface to transfer one trace related message that is part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - together with the applicable handover related message. The applicable handover related message shall always appear as the first message;

- during the handover resource allocation for subsequent inter-MSC inter-system handover according to subclauses 8.1.3 and 8.1.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between 3G_MSC-A and 3G_MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the handover execution, i.e. while the UE/MS is not in communication with the network, the 3G_MSC-A shall queue all outgoing BSSAP or RANAP /Direct Transfer messages until the communication with the UE/MS is resumed;

- finally, during supervision, i.e. while the UE/MS is not in the area of 3G_MSC-A after a successful Inter-3G_MSC handover, the subset of BSSAP procedures and their related messages - as defined in 3GPP TS 09.08 [7] - shall apply on the E-Interface. As the only exception to this rule, in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B', during the relocation resource allocation, the relocation and trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first and second list item).

NOTE: A subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B' can occur, e.g., if after the basic inter-MSC handover to 3G_MSC-B the MS performed a subsequent intra-3G_MSC-B GSM to UMTS inter-system handover.

If a subsequent inter-MSC handover/relocation back to 3G_MSC-A or to a third 3G_MSC-B' is cancelled, then the supervision continues, and BSSAP procedures and their related messages shall apply on the E-interface;

- during the intra-3G_MSC -B handover execution, if any, the 3G_MSC -B shall queue all outgoing BSSAP or RANAP messages until the communication with the UE/MS is resumed.

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

8.2   Handover GSM to UMTS

The following clauses describe two options for the Basic and Subsequent GSM to UMTS Handover procedures. The first, as described in clauses 8.2.1 and 8.2.3 respectively, provides for a circuit connection between (3G_)MSC-A and (3G_)MSC-B. The second, as described in clauses 8.2.2 and 8.2.4 respectively, provides for a Basic and Subsequent Handover without the provision of a circuit connection between (3G_)MSC-A and (3G_)MSC-B. In all the above mentioned clauses, the following principles apply:

- during the handover resource allocation, only the handover related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - can be sent by the MSC-A on the E-interface after successful handover resource allocation. In the clauses 8.2.1 and 8.2.2, it is however allowed at basic handover initiation on the E-Interface to transfer one trace related message that is part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - together with the applicable handover related message. The applicable handover related message shall always appear as the first message;

- If 3G_MSC-B or 3G-MSC-B' supports location reporting at change of Service Area, 3G_MSC-B or 3G_MSC-B' shall always initiate the Location Reporting Control procedure at change of Service Area towards the target RNS since no request for Location Reporting can be received from MSC-A. In that case, the Location Reporting Control procedure shall be initiated by 3G_MSC-B or 3G-MSC-B' after the Relocation Resource Allocation procedure has been executed successfully. The change of Service Area shall be reported to MSC-A within an A-HANDOVER-PERFORMED message.

- during the handover resource allocation for subsequent inter-MSC inter-system handover according to subclauses 8.2.3 and 8.2.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between MSC-A and 3G_MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the handover execution, i.e. while the UE/MS is not in communication with the network, the MSC-A shall queue all outgoing BSSAP or RANAP messages until the communication with the UE/MS is resumed;

- finally, during supervision, i.e. while the UE/MS is not in the area of MSC-A after a successful Inter-3G_MSC GSM to UMTS handover, the subset of BSSAP procedures and their related messages - as defined in 3GPP TS 09.08 [7] - shall apply on the E-Interface. As the only exception to this rule, in case of a subsequent inter-MSC SRNS relocation back to 3G_MSC-A or to a third 3G_MSC-B', during the relocation resource allocation, the relocation and trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first and second list item).

   If a subsequent inter-MSC handover/relocation back to 3G_MSC-A or to a third 3G_MSC-B' is cancelled, then the supervision continues, and BSSAP procedures and their related messages shall apply on the E-interface;

- during the intra-3G_MSC-B GSM to UMTS handover execution, if any, the 3G_MSC-B shall queue all outgoing BSSAP or Direct Transfer RANAP messages until the communication with the UE/MS is resumed.

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

8.3   SRNS Relocation

The following clauses describe two options for the Basic and Subsequent Relocation procedures. The first, as described in clauses 8.3.1 and 8.3.3 respectively, provides for a circuit connection between 3G_MSC-A and 3G_MSC-B. The second, as described in clauses 8.3.2 and 8.3.4 respectively, provides for a Basic and Subsequent Relocation without the provision of a circuit connection between 3G_MSC-A and 3G_MSC-B.

In all the above mentioned clauses, the following principles apply:

- during the relocation resource allocation, only the relocationhandover related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - shall be transferred on the E-interface;

- the trace related messages that are part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - can be sent by the 3G_MSC-A on the E-interface after successful relocation resource allocation. In the clauses 8.3.1 and 8.3.2, it is however allowed at basic relocation initiation on the E-Interface to transfer one trace related message that is part of the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - together with the applicable relocation related message. The applicable relocation related message shall always appear as the first message;

- the Location Reporting Control message which belongs to the applicable RANAP subset - as defined in 3GPP TS 29.108 [15] - can be sent by the 3G_MSC-A on the E-interface after successful relocation resource allocation;

- during the relocation resource allocation for subsequent inter-MSC SRNS relocation according to subclauses 8.3.3 and 8.3.4, it is allowed to transfer either DTAP or RANAP Direct Transfer messages on the E-Interface between 3G_MSC-A and 3G_MSC-B. RANAP Direct Transfer messages shall be used for this purpose if and only if the basic handover procedure was an inter MSC SRNS relocation;

- during the relocation execution, i.e. while the UE is not in communication with the network, the 3G_MSC-A shall queue all outgoing RANAP or BSSAP messages until the communication with the UE is resumed;

- finally, during supervision, i.e. while the UE is not in the area of 3G_MSC-A after a successful Inter-3G_MSC relocation, the subset of RANAP procedures and their related messages - as defined in 3GPP TS 29.108 [15] - shall apply on the E-Interface. As an exception to this rule, 3G_MSC-B shall notify 3G_MSC-A of a successfully completed subsequent intra-MSC-B intra GSM or inter-system handover by using the Internal Handover Indication procedure as specified in 3GPP TS 09.08 [7]. Furthermore, in case of a subsequent inter-MSC intra GSM or inter-system handover back to 3G_MSC-A or to a third 3G_MSC-B', during the handover

resource allocation, the handover and trace related messages that are part of the applicable BSSAP subset - as defined in 3GPP TS 09.08 [7] - shall be transferred on the E-interface the Handover Resource Allocation procedure as specified in 3GPP TS TS 09.08 [7] shall apply (see first and second list item in clause 7, subclause 8.1, and 8.2, respectively).

NOTE: A subsequent inter-MSC intra GSM or GSM to UMTS inter-system handover back to 3G_MSC-A or to a third 3G_MSC-B' can occur, e.g., if after the basic inter-MSC SRNS relocation to 3G_MSC-B the MS performed a subsequent intra-3G_MSC-B UMTS to GSM inter-system handover.

If a subsequent inter-MSC handover/relocation back to 3G_MSC-A or to a third 3G_MSC-B' is cancelled, then the supervision continues, and RANAP procedures and their related messages shall apply on the E-interface;

-     during the intra-3G_MSC-B relocation execution, if any, the 3G_MSC-B shall queue all outgoing RANAP messages until the communication with the UE is resumed.

-     after successful completion of the Intra-3G_MSC-B relocation, if 3G_MSC-B or 3G-MSC-B' has previously received an order to perform location reporting at change of Service Area from 3G_MSC-A, it shall act as specified in subclause 6.2.3.