3GPP TSG CN Plenary Meeting #16 **NP-020218**
5th - 7th June 2002. Marco Island, USA.

Source: **TSG CN WG 1**

Title: **CRs to R99 (with mirror CRs) on Work Item GSM/UMTS interworking towards 24.007 and 23.009**

Agenda item: **7.6**

Document for: **APPROVAL**

Introduction:

This document contains **8** CRs on **R99 including mirror CRs to** Work Item **" GSM/UMTS interworking"**, that have been agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #16 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Meeting-2nd-Level	Doc-2nd-Level
23.009	069		R99	Clarification of the end of supervision after inter-MSC handover	F	3.9.0	3.10.0	N1-24	N1-021280
23.009	070		Rel-4	Clarification of the end of supervision after inter-MSC handover	A	4.3.0	4.4.0	N1-24	N1-021281
23.009	071		Rel-5	Clarification of the end of supervision after inter-MSC handover	A	5.0.0	5.1.0	N1-24	N1-021282
23.009	075	1	Rel-99	Handling of Service Handover parameter in non-anchor	F	3.9.0	3.10.0	N1-24	N1-021393
23.009	076	1	Rel-4	Handling of Service Handover parameter in non-anchor	A	4.3.0	4.4.0	N1-24	N1-021394
23.009	077	1	Rel-5	Handling of Service Handover parameter in non-anchor	A	5.0.0	5.1.0	N1-24	N1-021395
24.007	046	2	R99	RR protocol message type octet	F	3.8.0	3.9.0	N1-24	N1-021340
24.007	047	2	Rel-4	RR protocol message type octet	A	4.1.0	4.2.0	N1-24	N1-021341

3GPP TSG-CN1 Meeting #24
Budapest, Hungary, 13. – 17. May 2002

Tdoc N1-021280

CR-Form-v5

CHANGE REQUEST

⌘ **23.009** **CR** **069** ⌘ **rev** **-** ⌘ Current version: **3.9.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Clarification of the end of supervision after inter-MSC handover
Source:	⌘	Siemens AG
Work item code:	⌘	GSM/UMTS Interworking
Date:	⌘	02.05.02
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)

Reason for change:	⌘	TS 23.009 specifies that during supervision, i.e. while the UE/MS is not in the area of 3G_MSC-A after a successful inter-MSC handover/relocation, a certain radio access protocol - BSSAP or RANAP - shall apply on the E-interface. The protocol to be used depends on the kind of inter-MSC handover/relocation performed. With the current wording it is not clear whether after cancellation of a subsequent inter-MSC handover/relocation the previous supervision with the same radio access protocol on the E-interface continues, or whether a new supervision, possibly with a different radio access protocol, is started.
Summary of change:	⌘	It is clarified that after cancellation of a subsequent inter-MSC handover/ relocation the supervision continues and the protocol used before the unsuccesful handover attempt (BSSAP or RANAP) shall apply on the E-interface.
Consequences if not approved:	⌘	Ambiguous standard. If an MSC is implemented according to the wrong interpretation, the following will happen: If after a cancelled subsequent inter-MSC handover/ relocation an MSC uses the wrong protocol via the E-interface, the receiving MSC will discard the messages. That means, e.g., that CC or MM signalling is no longer possible.

Clauses affected:	⌘	8.1, 8.2, 8.3
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications
	⌘	
Other comments:	⌘	

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.

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 execution, i.e. while the UE/MS is not in communication with the network, the 3G_MSC-A shall queue all outgoing BSSAP/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' the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first 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 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 execution, i.e. while the UE/MS is not in communication with the network, the MSC-A shall queue all outgoing BSSAP 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' the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first 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 Direct Transfer 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 handover 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 relocation execution, i.e. while the UE is not in communication with the network, the 3G_MSC-A shall queue all outgoing RANAP 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' the Handover Resource Allocation procedure as specified in 3GPP TS TS 09.08 [7] shall apply (see first 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.

3GPP TSG-CN1 Meeting #24
Budapest, Hungary, 13. – 17. May 2002

Tdoc N1-021281

CR-Form-v5

CHANGE REQUEST

⌘ **23.009** **CR** **070** ⌘ **rev** **-** ⌘ Current version: **4.3.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Clarification of the end of supervision after inter-MSC handover
Source:	⌘	Siemens AG
Work item code:	⌘	GSM/UMTS Interworking
Date:	⌘	02.05.02
Category:	⌘	**A**
Release:	⌘	REL-4

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)*
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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)

Reason for change:	⌘	TS 23.009 specifies that during supervision, i.e. while the UE/MS is not in the area of 3G_MSC-A after a successful inter-MSC handover/relocation, a certain radio access protocol - BSSAP or RANAP - shall apply on the E-interface. The protocol to be used depends on the kind of inter-MSC handover/relocation performed. With the current wording it is not clear whether after cancellation of a subsequent inter-MSC handover/relocation the previous supervision with the same radio access protocol on the E-interface continues, or whether a new supervision, possibly with a different radio access protocol, is started.
Summary of change:	⌘	It is clarified that after cancellation of a subsequent inter-MSC handover/ relocation the supervision continues and the protocol used before the unsuccesful handover attempt (BSSAP or RANAP) shall apply on the E-interface.
Consequences if not approved:	⌘	Ambiguous standard. If an MSC is implemented according to the wrong interpretation, the following will happen: If after a cancelled subsequent inter-MSC handover/ relocation an MSC uses the wrong protocol via the E-interface, the receiving MSC will discard the messages. That means, e.g., that CC or MM signalling is no longer possible.

Clauses affected:	⌘	8.1, 8.2, 8.3
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications
	⌘	
Other comments:	⌘	

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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.

8.1 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 execution, i.e. while the UE/MS is not in communication with the network, the 3G_MSC-A shall queue all outgoing BSSAP/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' the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first 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 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 execution, i.e. while the UE/MS is not in communication with the network, the MSC-A shall queue all outgoing BSSAP 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' the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first 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 Direct Transfer 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 handover 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 relocation execution, i.e. while the UE is not in communication with the network, the 3G_MSC-A shall queue all outgoing RANAP 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' the Handover Resource Allocation procedure as specified in 3GPP TS TS 09.08 [7] shall apply (see first 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.

3GPP TSG-CN1 Meeting #24
Budapest, Hungary, 13. – 17. May 2002

Tdoc N1-021282

CR-Form-v5

CHANGE REQUEST

⌘ **23.009** **CR** **071** ⌘ **rev** **-** ⌘ Current version: **5.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Clarification of the end of supervision after inter-MSC handover
Source:	⌘	Siemens AG
Work item code:	⌘	GSM/UMTS Interworking
Date:	⌘	02.05.02
Category:	⌘	**A**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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Reason for change:	⌘	TS 23.009 specifies that during supervision, i.e. while the UE/MS is not in the area of 3G_MSC-A after a successful inter-MSC handover/relocation, a certain radio access protocol - BSSAP or RANAP - shall apply on the E-interface. The protocol to be used depends on the kind of inter-MSC handover/relocation performed. With the current wording it is not clear whether after cancellation of a subsequent inter-MSC handover/relocation the previous supervision with the same radio access protocol on the E-interface continues, or whether a new supervision, possibly with a different radio access protocol, is started.
Summary of change:	⌘	It is clarified that after cancellation of a subsequent inter-MSC handover/ relocation the supervision continues and the protocol used before the unsuccesful handover attempt (BSSAP or RANAP) shall apply on the E-interface.
Consequences if not approved:	⌘	Ambiguous standard. If an MSC is implemented according to the wrong interpretation, the following will happen: If after a cancelled subsequent inter-MSC handover/ relocation an MSC uses the wrong protocol via the E-interface, the receiving MSC will discard the messages. That means, e.g., that CC or MM signalling is no longer possible.

Clauses affected:	⌘	8.1, 8.2, 8.3
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ 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/3G_Specs/CRs.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.

8.1 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 execution, i.e. while the UE/MS is not in communication with the network, the 3G_MSC-A shall queue all outgoing BSSAP/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' the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first 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 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 execution, i.e. while the UE/MS is not in communication with the network, the MSC-A shall queue all outgoing BSSAP 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' the Relocation Resource Allocation procedure as specified in 3GPP TS 29.108 [15] shall apply (see subclause 8.3, first 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 Direct Transfer 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 handover 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 relocation execution, i.e. while the UE is not in communication with the network, the 3G_MSC-A shall queue all outgoing RANAP 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' the Handover Resource Allocation procedure as specified in 3GPP TS TS 09.08 [7] shall apply (see first 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.

3GPP TSG CN WG4 Meeting #22 ***N1-021393***
Budapest, Hungary, 13th May – 17th May 2002

CR-Form-v5

CHANGE REQUEST

⌘ **23.009** **CR** **075** ⌘ **rev** **1** ⌘ Current version: **3.9.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Handling of Service Handover parameter in non-anchor
Source:	⌘	Ericsson
Work item code:	⌘	GSM/UMTS Interworking
Date:	⌘	2002-05-15
Category:	⌘	**F** (Agreed by Consensus)
Release:	⌘	REL-99

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)

Reason for change: ⌘

The Service Handover parameters in BSSMAP and RANAP are used to instruct the BSC/RNC to "try to avoid", "never perform" or "perform as soon as possible" an intersystem Handover.

The Service Based Handover functionality should be kept under control of Anchor-MSC during intra-PLMN handover/relocation for a number of reasons.

- Anchor MSC is by definition the MSC in control of the handed over call.
- When the handed over call is an Emergency Call, the non-anchor MSC would not be informed of this, and consequently may choose a “never perform” type of Service Based Handover resulting in a teardown of the emergency call in case an inter-system handover is necessary.
- The value of the Service Based Handover parameter might be subscription dependent. For example an operator might want to allow own GSM subscribers to be handed over from GSM to UMTS but not roaming subscribers.

Currently this functionality cannot be kept under control of anchor MSC after an Inter-MSC G2U since the RANAP parameter to be sent to the RNC cannot be derived from the corresponsing BSSMAP parameter in BSSMAP Handover Request encapsulated in Prepare Handover.

Moreover if an Inter-MSC U2U, U2G or G2G has been completed, then again after a subsequent intra-MSC Inter-System handover the correct Service Handover parameter cannot be derived by non-anchor from the corresponding parameter received over the E interface.

This will be corrected in 29.002 by means of adding the Service Handover parameters to the MAP Prepare Handover Request. Handling by non-anchor MSC needs to be clarified in 23.009.

Summary of change: ⌘ This CR clarifies how non-anchor MSC shall handle the Service Handover

		parameters.
Consequences if not approved:	⌘	Impossibility for MSC-A to correctly apply Service Handover in a number of Handover traffic cases.This is seen as en essential correction, in particular for an emergency call, this behaviour could result into a call release.

Clauses affected:	⌘	4.4.1			
Other specs affected:	⌘	X	Other core specifications	⌘	29.002
			Test specifications		
			O&M Specifications		
Other comments:	⌘	This CR should be agreed along with the corresponding CR for 29.002.			

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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 MODIFIED SECTION ******

4.4.1 Role of 3G_MSC-B

In the Intra-3G_MSC handover/relocation case, the 3G_MSC-B keeps the control of the whole Intra-3G_MSC handover/relocation procedure. 3G_MSC-B notifies MSC-A or 3G_MSC-A of intra-3G_MSC-B InterSystem handover and intra GSM handovers, by using the A-HANDOVER-PERFORMED message.

In case of intra-3G_MSC-B SRNS relocation, if security algorithms have been changed then:

a) When encapsulated BSSAP is used on the E interface, the A-HANDOVER-PERFORMED message shall be sent.

b) When encapsulated RANAP is used on the E interface, the Iu-LOCATION-REPORT message shall be sent.

On reception of an order to perform location reporting at change of Service Area from 3G_MSC-A, 3G_MSC-B shall be responsible to re-issue the Iu-LOCATION-REPORTING-CONTROL message after subsequent Intra-3G_MSC-B relocations/handovers. This shall be performed immediately after the successful completion of the Relocation Resource Allocation procedure.

In both cases, the selected UMTS algorithm(s) shall be indicated in the MAP-PROCESS-ACCESS-SIGNALLING request.

The role of 3G_MSC-B is also to provide transcoder resources.

In the Inter-3G_MSC relocation case, the role of 3G_MSC-B (3G_MSC-B') is only to provide radio resources control within its area. This means that 3G_MSC-B keeps control of the radio resources connection and release towards RNS-B. 3G_MSC-B will do some processing on the RANAP information received on the E-interface or the RANAP information received on the Iu-interface whereas it will relay the Direct Transfer information transparently between Iu-interface and E-interface. 3G_MSC-A initiates and drives RANAP procedures towards 3G_MSC-B, while 3G_MSC-B controls them towards its RNSs to the extent that 3G_MSC-B is responsible for the connections of its RNSs. The release of the dedicated resources between 3G_MSC-B and RNS-B is under the responsibility of 3G_MSC-B and RNS-B, and is not directly controlled by 3G_MSC-A. When clearing is to be performed due to information received from RNS-B, 3G_MSC-B shall transfer this clearing indication to 3G_MSC-A, to clear its connection with RNS-B, to terminate the dialogue with 3G_MSC-A through the E-interface, and to release its circuit connection with 3G_MSC-A, if any. In the same way, the release of the connection to its RNS-B, is initiated by 3G_MSC-B, when the dialogue with 3G_MSC-A ends normally and a release is received from the circuit connection with 3G_MSC-A, if any, or when the dialogue with the 3G_MSC-A ends abnormally.

When a release is received by 3G_MSC-B for the circuit connection with 3G_MSC-A then 3G_MSC-B shall release the circuit connection.

In the Inter-system UMTS to GSM Inter-3G_MSC handover case, the role of 3G_MSC-B (3G_MSC-B') is only to provide radio resources control within its area. This means that 3G_MSC-B keeps control of the radio resources connection and release towards BSS-B. 3G_MSC-B will do some processing on the BSSMAP information received on the E-interface or the BSSMAP information received on the A-interface whereas it will relay the DTAP information transparently between A-interface and E-interface. 3G_MSC-A initiates and drives a subset of BSSMAP procedures towards 3G_MSC-B, while 3G_MSC-B controls them towards its BSSs to the extent that 3G_MSC-B is responsible for the connections of its BSSs. The release of the dedicated resources between 3G_MSC-B and BSS-B is under the responsibility of 3G_MSC-B and BSS-B, and is not directly controlled by 3G_MSC-A. When clearing is to be performed due to information received from BSS-B, 3G_MSC-B shall transfer this clearing indication to 3G_MSC-A, to clear its connection with BSS-B, to terminate the dialogue with 3G_MSC-A through the E-interface, and to release its circuit connection with MSC-A, if any. In the same way, the release of the connection to its BSS-B, is initiated by 3G_MSC-B, when the dialogue with 3G_MSC-A ends normally and a release is received from the circuit connection with 3G_MSC-A, if any, or when the dialogue with the MSC-A ends abnormally.

When a release is received by 3G_MSC-B for the circuit connection with 3G_MSC-A then 3G_MSC-B shall release the circuit connection.

In the Inter-system GSM to UMTS Inter-3G_MSC handover case, the role of 3G_MSC-B (3G_MSC-B') is only to provide radio resources control within its area. This means that 3G_MSC-B keeps control of the radio resources connection and release towards RNS-B. 3G_MSC-B will do some processing on the BSSMAP information received on

the E-interface or the RANAP information received on the Iu-interface whereas it will relay the Direct Transfer information transparently between Iu-interface and E-interface. MSC-A initiates and drives a subset of BSSMAP procedures towards 3G_MSC-B, while 3G_MSC-B controls them towards its RNSs to the extent that 3G_MSC-B is responsible for the connections of its RNSs. The release of the dedicated resources between 3G_MSC-B and RNS-B is under the responsibility of 3G_MSC-B and RNS-B, and is not directly controlled by MSC-A. When clearing is to be performed due to information received from RNS-B, 3G_MSC-B shall transfer this clearing indication to MSC-A, to clear its connection with RNS-B, to terminate the dialogue with MSC-A through the E-interface, and to release its circuit connection with MSC-A, if any. In the same way, the release of the connection to its RNS-B, is initiated by 3G_MSC-B, when the dialogue with MSC-A ends normally and a release is received from the circuit connection with MSC-A, if any, or when the dialogue with the MSC-A ends abnormally.

When a release is received by 3G_MSC-B for the circuit connection with MSC-A then 3G_MSC-B shall release the circuit connection.

At intra-PLMN handover/relocation, 3G_MSC-B shall send Service Handover related information to the BSC/RNC if and only if this Service Handover information is received from 3G_MSC-A. 3G_MSC-B shall not modify Service Handover related information received from a 3G_MSC-A within the same PLMN.

If 3G_MSC-B does not support the optional supplementary service Mutlicall (See 3GPP TS 23.135) and 3G_MSC-A requests to relocate multiple bearers, 3G_MSC-B shall indicate that it does not support multiple bearers to 3G_MSC-A.

If 3G_MSC-B supports the optional supplementary service Multicall (See 3GPP TS 23.135) and UE is engaged with multiple bearers the following description applies;

- In the basic relocation case, the 3G_MSC-B shall be able to allocate a Handover Number for each bearer. The 3G_MSC-B shall also be able to select some bearers to be handed over according to the priority level defined as RAB parameters in 3GPP TS 25.413 [11] so that the number of bearers will fulfill the maximum number of bearers supported by the 3G_MSC-B. If a selection has to be made between bearers of the same priority level, then the selection criteria are implementation dependent.

- In the Intra-3G_MSC relocation case, the 3G_MSC-B tries to relocate all bearers to a new RNS.

- In the subsequent relocation back to the 3G_MSC-A or to a third 3G_MSC-B' case, the 3G_MSC-B tries to request to the 3G_MSC-A to relocate all bearers to the 3G_MSC-A or to the 3G_MSC-B'.

- In the Intra-3G_MSC inter-system UMTS to GSM handover case and the subsequent inter-system UMTS to GSM handover back to the 3G_MSC-A or to a third MSC-B' case, the 3G_MSC-B shall be able to select one bearer to be handed over according to 3GPP TS 22.129 [9] and tries to handover the selected bearer.

****** END OF MODIFICATIONS ******

3GPP TSG CN WG4 Meeting #22 ***N1-021394***
Budapest, Hungary, 13th May – 17th May 2002

CR-Form-v5

CHANGE REQUEST

⌘ **23.009** **CR** **076** ⌘ **rev** **1** ⌘ Current version: **4.3.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Handling of Service Handover parameter in non-anchor
Source:	⌘	Ericsson
Work item code:	⌘	GSM/UMTS Interworking
Date:	⌘	2002-05-15
Category:	⌘	**A** (Agreed by Consensus)
Release:	⌘	REL-4

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)

Reason for change: ⌘

The Service Handover parameters in BSSMAP and RANAP are used to instruct the BSC/RNC to "try to avoid", "never perform" or "perform as soon as possible" an intersystem Handover.

The Service Based Handover functionality should be kept under control of Anchor-MSC during intra-PLMN handover/relocation for a number of reasons.

- Anchor MSC is by definition the MSC in control of the handed over call.
- When the handed over call is an Emergency Call, the non-anchor MSC would not be informed of this, and consequently may choose a “never perform” type of Service Based Handover resulting in a teardown of the emergency call in case an inter-system handover is necessary.
- The value of the Service Based Handover parameter might be subscription dependent. For example an operator might want to allow own GSM subscribers to be handed over from GSM to UMTS but not roaming subscribers.

Currently this functionality cannot be kept under control of anchor MSC after an Inter-MSC G2U since the RANAP parameter to be sent to the RNC cannot be derived from the corresponsing BSSMAP parameter in BSSMAP Handover Request encapsulated in Prepare Handover.

Moreover if an Inter-MSC U2U, U2G or G2G has been completed, then again after a subsequent intra-MSC Inter-System handover the correct Service Handover parameter cannot be derived by non-anchor from the corresponding parameter received over the E interface.

This will be corrected in 29.002 by means of adding the Service Handover parameters to the MAP Prepare Handover Request. Handling by non-anchor MSC needs to be clarified in 23.009.

Summary of change: ⌘ This CR clarifies how non-anchor MSC shall handle the Service Handover

		parameters.
Consequences if not approved:	⌘	Impossibility for MSC-A to correctly apply Service Handover in a number of Handover traffic cases.This is seen as en essential correction, in particular for an emergency call, this behaviour could result into a call release.

Clauses affected:	⌘	4.4.1			
Other specs affected:	⌘	X	Other core specifications	⌘	29.002
			Test specifications		
			O&M Specifications		
Other comments:	⌘	This CR should be agreed along with the corresponding CR for 29.002.			

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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 MODIFIED SECTION ******

4.4.1 Role of 3G_MSC-B

In the Intra-3G_MSC handover/relocation case, the 3G_MSC-B keeps the control of the whole Intra-3G_MSC handover/relocation procedure. 3G_MSC-B notifies MSC-A or 3G_MSC-A of intra-3G_MSC-B InterSystem handover and intra GSM handovers, by using the A-HANDOVER-PERFORMED message.

In case of intra-3G_MSC-B SRNS relocation, if security algorithms have been changed:

a) When encapsulated BSSAP is used on the E interface, the A-HANDOVER-PERFORMED message shall be sent.

b) When encapsulated RANAP is used on the E interface, the Iu-LOCATION-REPORT message shall be sent.

On reception of an order to perform location reporting at change of Service Area from 3G_MSC-A, 3G_MSC-B shall be responsible to re-issue the Iu-LOCATION-REPORTING-CONTROL message after subsequent Intra-3G_MSC-B relocations/handovers. This shall be performed immediately after the successful completion of the Relocation Resource Allocation procedure.

In both cases, the selected UMTS algorithm(s) shall be indicated in the MAP-PROCESS-ACCESS-SIGNALLING request.

In a network implementing the "Flexible Iu interface for handover/relocation" option, in the Intra-3G_MSC handover/relocation case, 3G_MSC-B may optionally use a global title based on the Global RNC-Id for the addressing of the Iu interface messages towards the target RNC.

The role of 3G_MSC-B is also to provide transcoder resources.

In the Inter-3G_MSC relocation case, the role of 3G_MSC-B (3G_MSC-B') is only to provide radio resources control within its area. This means that 3G_MSC-B keeps control of the radio resources connection and release towards RNS-B. 3G_MSC-B will do some processing on the RANAP information received on the E-interface or the RANAP information received on the Iu-interface whereas it will relay the Direct Transfer information transparently between Iu-interface and E-interface. 3G_MSC-A initiates and drives RANAP procedures towards 3G_MSC-B, while 3G_MSC-B controls them towards its RNSs to the extent that 3G_MSC-B is responsible for the connections of its RNSs. The release of the dedicated resources between 3G_MSC-B and RNS-B is under the responsibility of 3G_MSC-B and RNS-B, and is not directly controlled by 3G_MSC-A. When clearing is to be performed due to information received from RNS-B, 3G_MSC-B shall transfer this clearing indication to 3G_MSC-A, to clear its connection with RNS-B, to terminate the dialogue with 3G_MSC-A through the E-interface, and to release its circuit connection with 3G_MSC-A, if any. In the same way, the release of the connection to its RNS-B, is initiated by 3G_MSC-B, when the dialogue with 3G_MSC-A ends normally and a release is received from the circuit connection with 3G_MSC-A, if any, or when the dialogue with the 3G_MSC-A ends abnormally.

When a release is received by 3G_MSC-B for the circuit connection with 3G_MSC-A then 3G_MSC-B shall release the circuit connection.

In the Inter-system UMTS to GSM Inter-3G_MSC handover case, the role of 3G_MSC-B (3G_MSC-B') is only to provide radio resources control within its area. This means that 3G_MSC-B keeps control of the radio resources connection and release towards BSS-B. 3G_MSC-B will do some processing on the BSSMAP information received on the E-interface or the BSSMAP information received on the A-interface whereas it will relay the DTAP information transparently between A-interface and E-interface. 3G_MSC-A initiates and drives a subset of BSSMAP procedures towards 3G_MSC-B, while 3G_MSC-B controls them towards its BSSs to the extent that 3G_MSC-B is responsible for the connections of its BSSs. The release of the dedicated resources between 3G_MSC-B and BSS-B is under the responsibility of 3G_MSC-B and BSS-B, and is not directly controlled by 3G_MSC-A. When clearing is to be performed due to information received from BSS-B, 3G_MSC-B shall transfer this clearing indication to 3G_MSC-A, to clear its connection with BSS-B, to terminate the dialogue with 3G_MSC-A through the E-interface, and to release its circuit connection with MSC-A, if any. In the same way, the release of the connection to its BSS-B, is initiated by 3G_MSC-B, when the dialogue with 3G_MSC-A ends normally and a release is received from the circuit connection with 3G_MSC-A, if any, or when the dialogue with the MSC-A ends abnormally.

When a release is received by 3G_MSC-B for the circuit connection with 3G_MSC-A then 3G_MSC-B shall release the circuit connection.

In the Inter-system GSM to UMTS Inter-3G_MSC handover case, the role of 3G_MSC-B (3G_MSC-B') is only to provide radio resources control within its area. This means that 3G_MSC-B keeps control of the radio resources connection and release towards RNS-B. 3G_MSC-B will do some processing on the BSSMAP information received on the E-interface or the RANAP information received on the Iu-interface whereas it will relay the Direct Transfer information transparently between Iu-interface and E-interface. MSC-A initiates and drives a subset of BSSMAP procedures towards 3G_MSC-B, while 3G_MSC-B controls them towards its RNSs to the extent that 3G_MSC-B is responsible for the connections of its RNSs. The release of the dedicated resources between 3G_MSC-B and RNS-B is under the responsibility of 3G_MSC-B and RNS-B, and is not directly controlled by MSC-A. When clearing is to be performed due to information received from RNS-B, 3G_MSC-B shall transfer this clearing indication to MSC-A, to clear its connection with RNS-B, to terminate the dialogue with MSC-A through the E-interface, and to release its circuit connection with MSC-A, if any. In the same way, the release of the connection to its RNS-B, is initiated by 3G_MSC-B, when the dialogue with MSC-A ends normally and a release is received from the circuit connection with MSC-A, if any, or when the dialogue with the MSC-A ends abnormally.

When a release is received by 3G_MSC-B for the circuit connection with MSC-A then 3G_MSC-B shall release the circuit connection.

At intra-PLMN handover/relocation, 3G_MSC-B shall send Service Handover related information to the BSC/RNC if and only if this Service Handover information is received from 3G_MSC-A. 3G_MSC-B shall not modify Service Handover related information received from a 3G_MSC-A within the same PLMN.

If 3G_MSC-B does not support the optional supplementary service Mutlicall (see 3GPP TS 23.135) and 3G_MSC-A requests to relocate multiple bearers, 3G_MSC-B shall indicate that it does not support multiple bearers to 3G_MSC-A.

If 3G_MSC-B supports the optional supplementary service Multicall (see 3GPP TS 23.135) and UE is engaged with multiple bearers the following description applies:

- In the basic relocation case, the 3G_MSC-B shall be able to allocate a Handover Number for each bearer. The 3G_MSC-B shall also be able to select some bearers to be handed over according to the priority level defined as RAB parameters in 3GPP TS 25.413 [11] so that the number of bearers will fulfill the maximum number of bearers supported by the 3G_MSC-B. If a selection has to be made between bearers of the same priority level, then the selection criteria are implementation dependent.

- In the Intra-3G_MSC relocation case, the 3G_MSC-B tries to relocate all bearers to a new RNS.

- In the subsequent relocation back to the 3G_MSC-A or to a third 3G_MSC-B' case, the 3G_MSC-B tries to request to the 3G_MSC-A to relocate all bearers to the 3G_MSC-A or to the 3G_MSC-B'.

- In the Intra-3G_MSC inter-system UMTS to GSM handover case and the subsequent inter-system UMTS to GSM handover back to the 3G_MSC-A or to a third MSC-B' case, the 3G_MSC-B shall be able to select one bearer to be handed over according to 3GPP TS 22.129 [9] and tries to handover the selected bearer.

****** END OF MODIFICATIONS ******

3GPP TSG CN WG4 Meeting #22 ***N1-021395***
Budapest, Hungary, 13th May – 17th May 2002

CR-Form-v5

CHANGE REQUEST

⌘ **23.009** **CR** **077** ⌘ **rev** **1** ⌘ Current version: **5.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Handling of Service Handover parameter in non-anchor
Source:	⌘	Ericsson
Work item code:	⌘	GSM/UMTS Interworking
Date:	⌘	2002-05-15
Category:	⌘	**A** (Agreed by Consensus)
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)

Reason for change: ⌘

The Service Handover parameters in BSSMAP and RANAP are used to instruct the BSC/RNC to "try to avoid", "never perform" or "perform as soon as possible" an intersystem Handover.

The Service Based Handover functionality should be kept under control of Anchor-MSC during intra-PLMN handover/relocation for a number of reasons.

- Anchor MSC is by definition the MSC in control of the handed over call.
- When the handed over call is an Emergency Call, the non-anchor MSC would not be informed of this, and consequently may choose a “never perform” type of Service Based Handover resulting in a teardown of the emergency call in case an inter-system handover is necessary.
- The value of the Service Based Handover parameter might be subscription dependent. For example an operator might want to allow own GSM subscribers to be handed over from GSM to UMTS but not roaming subscribers.

Currently this functionality cannot be kept under control of anchor MSC after an Inter-MSC G2U since the RANAP parameter to be sent to the RNC cannot be derived from the corresponsing BSSMAP parameter in BSSMAP Handover Request encapsulated in Prepare Handover.

Moreover if an Inter-MSC U2U, U2G or G2G has been completed, then again after a subsequent intra-MSC Inter-System handover the correct Service Handover parameter cannot be derived by non-anchor from the corresponding parameter received over the E interface.

This will be corrected in 29.002 by means of adding the Service Handover parameters to the MAP Prepare Handover Request. Handling by non-anchor MSC needs to be clarified in 23.009.

Summary of change: ⌘ This CR clarifies how non-anchor MSC shall handle the Service Handover

		parameters.
Consequences if not approved:	⌘	Impossibility for MSC-A to correctly apply Service Handover in a number of Handover traffic cases.This is seen as en essential correction, in particular for an emergency call, this behaviour could result into a call release.

Clauses affected:	⌘	4.4.1			
Other specs affected:	⌘	X	Other core specifications	⌘	29.002
			Test specifications		
			O&M Specifications		
Other comments:	⌘	This CR should be agreed along with the corresponding CR for 29.002.			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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 MODIFIED SECTION ******

4.4.1 Role of 3G_MSC-B

In the Intra-3G_MSC handover/relocation case, the 3G_MSC-B keeps the control of the whole Intra-3G_MSC handover/relocation procedure. 3G_MSC-B notifies MSC-A or 3G_MSC-A of intra-3G_MSC-B InterSystem handover and intra GSM handovers, by using the A-HANDOVER-PERFORMED message.

In case of intra-3G_MSC-B SRNS relocation, if security algorithms have been changed:

a) When encapsulated BSSAP is used on the E interface, the A-HANDOVER-PERFORMED message shall be sent.

b) When encapsulated RANAP is used on the E interface, the Iu-LOCATION-REPORT message shall be sent.

On reception of an order to perform location reporting at change of Service Area from 3G_MSC-A, 3G_MSC-B shall be responsible to re-issue the Iu-LOCATION-REPORTING-CONTROL message after subsequent Intra-3G_MSC-B relocations/handovers. This shall be performed immediately after the successful completion of the Relocation Resource Allocation procedure.

In both cases, the selected UMTS algorithm(s) shall be indicated in the MAP-PROCESS-ACCESS-SIGNALLING request.

In a network implementing the "Flexible Iu interface for handover/relocation" option, in the Intra-3G_MSC handover/relocation case, 3G_MSC-B may optionally use a global title based on the Global RNC-Id for the addressing of the Iu interface messages towards the target RNC.

For subsequent inter-MSC handover/relocation to an area where "Intra Domain Connection of RAN Nodes to Multiple CN Nodes" is applied, 3G_MSC-B can have multiple target CN nodes for each handover target in a pool-area as specified in 3GPP TS 23.236 [18].

The role of 3G_MSC-B is also to provide transcoder resources.

In the Inter-3G_MSC relocation case, the role of 3G_MSC-B (3G_MSC-B') is only to provide radio resources control within its area. This means that 3G_MSC-B keeps control of the radio resources connection and release towards RNS-B. 3G_MSC-B will do some processing on the RANAP information received on the E-interface or the RANAP information received on the Iu-interface whereas it will relay the Direct Transfer information transparently between Iu-interface and E-interface. 3G_MSC-A initiates and drives RANAP procedures towards 3G_MSC-B, while 3G_MSC-B controls them towards its RNSs to the extent that 3G_MSC-B is responsible for the connections of its RNSs. The release of the dedicated resources between 3G_MSC-B and RNS-B is under the responsibility of 3G_MSC-B and RNS-B, and is not directly controlled by 3G_MSC-A. When clearing is to be performed due to information received from RNS-B, 3G_MSC-B shall transfer this clearing indication to 3G_MSC-A, to clear its connection with RNS-B, to terminate the dialogue with 3G_MSC-A through the E-interface, and to release its circuit connection with 3G_MSC-A, if any. In the same way, the release of the connection to its RNS-B, is initiated by 3G_MSC-B, when the dialogue with 3G_MSC-A ends normally and a release is received from the circuit connection with 3G_MSC-A, if any, or when the dialogue with the 3G_MSC-A ends abnormally.

When a release is received by 3G_MSC-B for the circuit connection with 3G_MSC-A then 3G_MSC-B shall release the circuit connection.

In the Inter-system UMTS to GSM Inter-3G_MSC handover case, the role of 3G_MSC-B (3G_MSC-B') is only to provide radio resources control within its area. This means that 3G_MSC-B keeps control of the radio resources connection and release towards BSS-B. 3G_MSC-B will do some processing on the BSSMAP information received on the E-interface or the BSSMAP information received on the A-interface whereas it will relay the DTAP information transparently between A-interface and E-interface. 3G_MSC-A initiates and drives a subset of BSSMAP procedures towards 3G_MSC-B, while 3G_MSC-B controls them towards its BSSs to the extent that 3G_MSC-B is responsible for the connections of its BSSs. The release of the dedicated resources between 3G_MSC-B and BSS-B is under the responsibility of 3G_MSC-B and BSS-B, and is not directly controlled by 3G_MSC-A. When clearing is to be performed due to information received from BSS-B, 3G_MSC-B shall transfer this clearing indication to 3G_MSC-A,

to clear its connection with BSS-B, to terminate the dialogue with 3G_MSC-A through the E-interface, and to release its circuit connection with MSC-A, if any. In the same way, the release of the connection to its BSS-B, is initiated by 3G_MSC-B, when the dialogue with 3G_MSC-A ends normally and a release is received from the circuit connection with 3G_MSC-A, if any, or when the dialogue with the MSC-A ends abnormally.

When a release is received by 3G_MSC-B for the circuit connection with 3G_MSC-A then 3G_MSC-B shall release the circuit connection.

In the Inter-system GSM to UMTS Inter-3G_MSC handover case, the role of 3G_MSC-B (3G_MSC-B') is only to provide radio resources control within its area. This means that 3G_MSC-B keeps control of the radio resources connection and release towards RNS-B. 3G_MSC-B will do some processing on the BSSMAP information received on the E-interface or the RANAP information received on the Iu-interface whereas it will relay the Direct Transfer information transparently between Iu-interface and E-interface. MSC-A initiates and drives a subset of BSSMAP procedures towards 3G_MSC-B, while 3G_MSC-B controls them towards its RNSs to the extent that 3G_MSC-B is responsible for the connections of its RNSs. The release of the dedicated resources between 3G_MSC-B and RNS-B is under the responsibility of 3G_MSC-B and RNS-B, and is not directly controlled by MSC-A. When clearing is to be performed due to information received from RNS-B, 3G_MSC-B shall transfer this clearing indication to MSC-A, to clear its connection with RNS-B, to terminate the dialogue with MSC-A through the E-interface, and to release its circuit connection with MSC-A, if any. In the same way, the release of the connection to its RNS-B, is initiated by 3G_MSC-B, when the dialogue with MSC-A ends normally and a release is received from the circuit connection with MSC-A, if any, or when the dialogue with the MSC-A ends abnormally.

When a release is received by 3G_MSC-B for the circuit connection with MSC-A then 3G_MSC-B shall release the circuit connection.

At intra-PLMN handover/relocation, 3G_MSC-B shall send Service Handover related information to the BSC/RNC if and only if this Service Handover information is received from 3G_MSC-A. 3G_MSC-B shall not modify Service Handover related information received from a 3G_MSC-A within the same PLMN.

If 3G_MSC-B does not support the optional supplementary service Mutlicall (see 3GPP TS 23.135) and 3G_MSC-A requests to relocate multiple bearers, 3G_MSC-B shall indicate that it does not support multiple bearers to 3G_MSC-A.

If 3G_MSC-B supports the optional supplementary service Multicall (see 3GPP TS 23.135) and UE is engaged with multiple bearers the following description applies:

- In the basic relocation case, the 3G_MSC-B shall be able to allocate a Handover Number for each bearer. The 3G_MSC-B shall also be able to select some bearers to be handed over according to the priority level defined as RAB parameters in 3GPP TS 25.413 [11] so that the number of bearers will fulfill the maximum number of bearers supported by the 3G_MSC-B. If a selection has to be made between bearers of the same priority level, then the selection criteria are implementation dependent.

- In the Intra-3G_MSC relocation case, the 3G_MSC-B tries to relocate all bearers to a new RNS.

- In the subsequent relocation back to the 3G_MSC-A or to a third 3G_MSC-B' case, the 3G_MSC-B tries to request to the 3G_MSC-A to relocate all bearers to the 3G_MSC-A or to the 3G_MSC-B'.

- In the Intra-3G_MSC inter-system UMTS to GSM handover case and the subsequent inter-system UMTS to GSM handover back to the 3G_MSC-A or to a third MSC-B' case, the 3G_MSC-B shall be able to select one bearer to be handed over according to 3GPP TS 22.129 [9] and tries to handover the selected bearer.

****** END OF MODIFICATIONS ******

3GPP TSG-CN1 Meeting #24 ***Tdoc N1-021340***
Budapest, Hungary, 13. – 17. May 2002

3GPP TSG-GERAN Meeting #9 **Tdoc GP-02xxxx~~1148~~**
Seattle, USA, 15.-19.April 2002

3GPP TSG-CN1 Meeting #23 ***Tdoc N1-020885***
Fort Lauderdale, Florida, USA 08. - 12. April 2002 Revision of N1-020709

CR-Form-v5

CHANGE REQUEST

⌘ **24.007** **CR** **046** ⌘ **rev** **2** ~~**1**~~ ⌘ Current version: **3.8.0** ⌘

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

Proposed change affects: ⌘ (U)SIM [ ] ME/UE [X] Radio Access Network [X] Core Network [X]

Title:	⌘	RR protocol message type octet
Source:	⌘	Nokia
Work item code:	⌘	GSM-UMTS interworking
Date:	⌘	9.4.2002
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)

Reason for change:	⌘	24.007 assumes that only bits 1-6 are used for the message type indication in L3 protocols. However, RR protocol has already run out of 6-bit message type code points in and therefore 7 bits are already used for the RR message types. This makes the current 24.007 text not applicable to RR protocol.
Summary of change:	⌘	Align 24.007 subclause 11.2.3.2 with R99 RR message types which are defined in 04.18.
Consequences if not approved:	⌘	Contradiction between 04.18 and 24.007. RR message may be rejected by implementation following 24.007.

Clauses affected:	⌘	11.2.3.2
Other specs affected:	⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications
	⌘	
Other comments:	⌘	This CR aligns 24.007 with what has already been specified in 04.18 so no changes in GERAN specifications are needed. GERAN should be given a chance to review this CR if it is agreed by CN1.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

11.2.3.2 Message type octet

11.2.3.2.1 Message type octet (when accessing Release 98 and older networks only)

The message type octet is the second octet in a standard L3 message.

When a standard L3 message is expected, and a message is received that is less than 16 bit long, that message shall be ignored.

When the radio connection started with a core network node of a Release 98 or older network, the message type IE is coded as shown in figure 11.10a and 11.10x.

Bit 8 is encoded as "0"; value "1" is reserved for possible future use as an extension bit. A protocol entity expecting a standard L3 message, and receiving a message containing bit 8 of octet 2 encoded as "1" shall diagnose a " message not defined for the PD" error and treat the message accordingly.

In messages of MM, CC, SS, GCC, BCC and LCS protocol sent using the transmission functionality provided by the RR layer to upper layers, and sent from the mobile station or the LMU to the network, bit 7 of octet 2 is used for send sequence number, see section 11.2.3.2.3.

In all other standard layer 3 messages, except for RR messages, bit 7 is set to a default value. A protocol entity expecting a standard L3 message, and not using the transmission functionality provided by the RR layer, and receiving a message containing bit 7 of octet 2 encoded different to the default value shall diagnose a "message not defined for the PD" error and treat the message accordingly.

The default value for bit 7 is 0 except for the SM protocol where the default value is 1. No default value for bit 7 is specified for RR protocol. For RR message types see 3GPP TS 04.18.

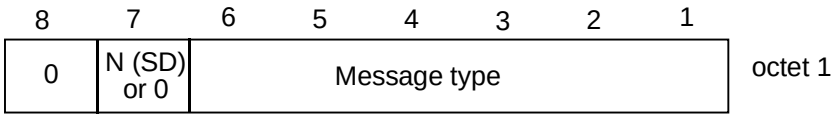

Figure 11.10a: Message type IE (MM, CC, SS, GCC, BCC and LCS)

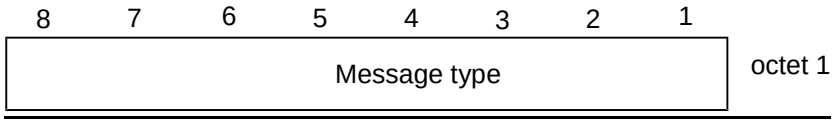

Figure 11.10x: Message type IE (protocol other than MM, CC, SS, GCC, BCC and LCS)

~~Bit~~ For MM, CC, SS, GCC, BCC and LCS protocols bits 1 to 6 of octet 2 of standard L3 messages contain the message type. For all other L3 protocols bits 1 to 8 of octet 2 of standard L3 message contain the message type.

The message type determines the function of a message within a protocol in a given direction and for a given lower layer SAP. The meaning of the message type is therefore dependent on the protocol (the same value may have different meanings in different protocols), the direction (the same value may have different meanings in the same protocol, when sent from the Mobile Station to the network and when sent from the network to the Mobile Station) and the lower layer SAP (the same value may have different meanings, e.g., whether the message was sent on the SACCH or on the main DCCH).

Each protocol defines a list of allowed message types for each relevant SAP. A message received analysed as a standard L3 message, and with a message type not in the corresponding list leads to the diagnosis "message not defined for the PD". Some message types may correspond to a function not implemented by the receiver. They are then said to be non implemented by the receiver.

The reaction of a protocol entity expecting a standard L3 message and receiving a message with message type not defined for the PD or not implemented by the receiver and the reception conditions is defined in the relevant protocol specification. As a general rule, a protocol specification should not force the receiver to analyse the message further.

11.2.3.2.2 Message type octet (when accessing Release 99 and newer networks)

The message type octet is the second octet in a standard L3 message.

When a standard L3 message is expected, and a message is received that is less than 16 bit long, that message shall be ignored.

When the radio connection started with a core network node of a Release 99 or later network, the message type IE is coded dependent on the PD as shown in figures 11.10b, c and d.

In messages of MM, CC and SS protocol sent using the transmission functionality provided by the RR and/or access stratum layer to upper layers, and sent from the mobile station or the LMU to the network, bits 7 and 8 of octet 2 are used for send sequence number, see section 11.2.3.2.3.

In messages of GCC, BCC and LCS protocol sent using the transmission functionality provided by the RR layer to upper layers, and sent from the mobile station to the network or, for LCS, sent from the LMU to the network, only bit 7 of octet 2 is used for send sequence number. Bit 8 is set to the default value.

In all other standard layer 3 messages, except for RR messages, bits 7 and 8 are set to the default value. A protocol entity expecting a standard L3 message, and not using the transmission functionality provided by the RR and/or access stratum layer, and receiving a message containing bit 7 or bit 8 of octet 2 encoded different to the default value shall diagnose a "message not defined for the PD" error and treat the message accordingly.

In messages of the RR protocol entity, bit 8 of octet 2 is set to the default value. The other value is reserved for possible future use as an extension bit. If an RR protocol entity expecting a standard L3 message receives message containing bit 8 of octet 2 encoded different from the default value it shall diagnose a "message not defined for the PD" error and treat the message accordingly.

The default value for bit 8 is 0. The default value for bit 7 is 0 except for the SM protocol which has a default value of 1. No default value for bit 7 is specified for RR protocol. For RR message types see 3GPP TS 04.18.

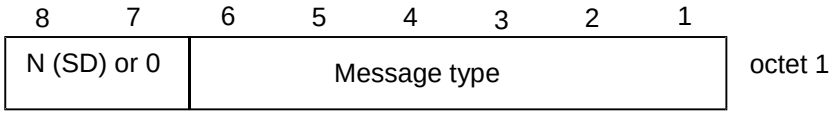

Figure 11.10b: Message type IE (MM, CC and SS)

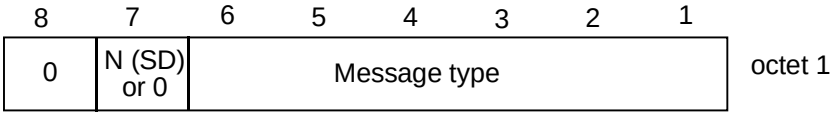

Figure 11.10c: Message type IE (GCC, BCC and LCS)

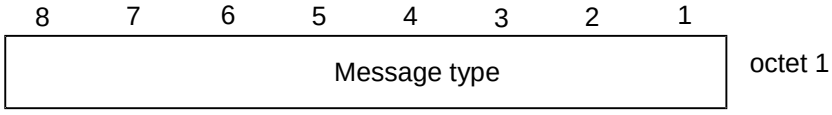

Figure 11.10d: Message type IE (protocol other than MM, CC, SS, GCC, BCC and LCS)

~~Bit~~ For MM, CC, SS, GCC, BCC and LCS protocols bits 1 to 6 of octet 2 of standard L3 messages contain the message type. For all other L3 protocols bits 1 to 8 of octet 2 of standard L3 message contain the message type.

The message type determines the function of a message within a protocol in a given direction and for a given lower layer SAP. The meaning of the message type is therefore dependent on the protocol (the same value may have different meanings in different protocols), the direction (the same value may have different meanings in the same protocol, when sent from the Mobile Station to the network and when sent from the network to the Mobile Station) and the lower layer SAP (the same value may have different meanings, e.g., whether the message was sent on the SACCH or on the main DCCH).

Each protocol defines a list of allowed message types for each relevant SAP. A message received analysed as a standard L3 message, and with a message type not in the corresponding list leads to the diagnosis "message not defined for the

PD". Some message types may correspond to a function not implemented by the receiver. They are then said to be non implemented by the receiver.

The reaction of a protocol entity expecting a standard L3 message and receiving a message with message type not defined for the PD or not implemented by the receiver and the reception conditions is defined in the relevant protocol specification. As a general rule, a protocol specification should not force the receiver to analyse the message further.

****

* 04.18 clause 10.4 annexed for information: *

****

10.4 Message Type

The message type IE and its use are defined in 3GPP TS 24.007 [20]. Tables 10.1.1/3GPP TS 04.18 and 10.4.2/3GPP TS 04.18 define the value part of the message type IE used in the Radio Resource management protocol. Table 10.4.3/3GPP TS 04.18 defines the value part of the message type IE used in the GPRS Transparent Transport protocol.

Table 10.4.1/3GPP TS 04.18: Message types for Radio Resource management

8	7	6	5	4	3	2	1	
0	0	1	1	1	-	-	-	Channel establishment messages:
				1	0	0		- RR INITIALISATION REQUEST
				0	1	1		- ADDITIONAL ASSIGNMENT
				1	1	1		- IMMEDIATE ASSIGNMENT
				0	0	1		- IMMEDIATE ASSIGNMENT EXTENDED
				0	1	0		- IMMEDIATE ASSIGNMENT REJECT
0	1	0	0	1	0	0	0	- DTM ASSIGNMENT FAILURE
0	1	0	0	1	0	0	1	- DTM REJECT
0	1	0	0	1	0	1	0	- DTM REQUEST
0	1	0	0	1	0	1	1	- PACKET ASSIGNMENT
0	0	1	1	0	-	-	-	Ciphering messages:
				1	0	1		- CIPHERING MODE COMMAND
				0	1	0		- CIPHERING MODE COMPLETE
0	0	1	1	0	-	-	-	Configuration change messages:
				0	0	0		- CONFIGURATION CHANGE COMMAND
				0	0	1		- CONFIGURATION CHANGE ACK.
				0	1	1		- CONFIGURATION CHANGE REJECT
0	0	1	0	1	-	-	-	Handover messages:
				1	1	0		- ASSIGNMENT COMMAND
				0	0	1		- ASSIGNMENT COMPLETE
				1	1	1		- ASSIGNMENT FAILURE
				0	1	1		- HANDOVER COMMAND
				1	0	0		- HANDOVER COMPLETE
				0	0	0		- HANDOVER FAILURE
				1	0	1		- PHYSICAL INFORMATION
0	1	0	0	1	1	0	1	- DTM ASSIGNMENT COMMAND
0	0	0	0	1	0	0	0	- RR-CELL CHANGE ORDER
0	0	1	0	0	0	1	1	- PDCH ASSIGNMENT COMMAND
0	0	0	0	1	-	-	-	Channel release messages:
				1	0	1		- CHANNEL RELEASE
				0	1	0		- PARTIAL RELEASE
				1	1	1		- PARTIAL RELEASE COMPLETE
0	0	1	0	0	-	-	-	Paging and Notification messages:
				0	0	1		- PAGING REQUEST TYPE 1
				0	1	0		- PAGING REQUEST TYPE 2
				1	0	0		- PAGING REQUEST TYPE 3
				1	1	1		- PAGING RESPONSE
				0	0	0		- NOTIFICATION/NCH
				1	0	1		- Reserved (see NOTE)
				1	1	0		- NOTIFICATION/RESPONSE
0	0	0	0	1	0	1	1	- Reserved (see NOTE)
0	1	1	0	0	-	-	-	- 3G Specific messages
				0	0	0		- UTRAN Classmark Change
				0	1	0		- cdma 2000 Classmark Change
				0	1	1		- Inter System to UTRAN Handover Command
				1	0	0		- Inter System to cdma2000 Handover Command
0	0	0	1	1	-	-	-	System information messages:
				0	0	0		- SYSTEM INFORMATION TYPE 8
				0	0	1		- SYSTEM INFORMATION TYPE 1
				0	1	0		- SYSTEM INFORMATION TYPE 2
				0	1	1		- SYSTEM INFORMATION TYPE 3
				1	0	0		- SYSTEM INFORMATION TYPE 4
				1	0	1		- SYSTEM INFORMATION TYPE 5
				1	1	0		- SYSTEM INFORMATION TYPE 6
				1	1	1		- SYSTEM INFORMATION TYPE 7
0	0	0	0	0	-	-	-	System information messages:
				0	1	0		- SYSTEM INFORMATION TYPE 2bis
				0	1	1		- SYSTEM INFORMATION TYPE 2ter
				1	1	1		- SYSTEM INFORMATION TYPE 2quater
				1	0	1		- SYSTEM INFORMATION TYPE 5bis
				1	1	0		- SYSTEM INFORMATION TYPE 5ter
				1	0	0		- SYSTEM INFORMATION TYPE 9
				0	0	0		- SYSTEM INFORMATION TYPE 13

```
8 7 6 5 4 3 2 1
0 0 1 1 1 - - -  System information messages:
          1 0 1  - SYSTEM INFORMATION TYPE 16
          1 1 0  - SYSTEM INFORMATION TYPE 17
0 1 0 0 0 - - -  System information messages:
          0 0 0  - SYSTEM INFORMATION TYPE 18
          0 0 1  - SYSTEM INFORMATION TYPE 19
          0 1 0  - SYSTEM INFORMATION TYPE 20
0 0 0 1 0 - - -  Miscellaneous messages:
          0 0 0  - CHANNEL MODE MODIFY
          0 1 0  - RR STATUS
          1 1 1  - CHANNEL MODE MODIFY ACKNOWLEDGE
          1 0 0  - FREQUENCY REDEFINITION
          1 0 1  - MEASUREMENT REPORT
          1 1 0  - CLASSMARK CHANGE
          0 1 1  - CLASSMARK ENQUIRY
0 0 1 1 0 1 1 0  - EXTENDED MEASUREMENT REPORT
0 0 1 1 0 1 1 1  - EXTENDED MEASUREMENT ORDER
0 0 1 1 0 1 0 0  - GPRS SUSPENSION REQUEST
0 1 0 0 1 1 0 1  - DTM INFORMATION
VGCS uplink control messages:
0 0 0 0 1 0 0 1  - VGCS UPLINK GRANT
0 0 0 0 1 1 1 0  - UPLINK RELEASE
0 0 0 0 1 1 0 0  - Reserved (see NOTE)
0 0 1 0 1 0 1 0  - UPLINK BUSY
0 0 0 1 0 0 0 1  - TALKER INDICATION
Application messages:
0 0 1 1 1 0 0 0  - Application Information
```

Bit 8 is reserved for possible future use as an extension bit, see 3GPP TS 24.007.
NOTE: This value was allocated but never used in earlier phases of the protocol.

3GPP TSG-CN1 Meeting #24 ***Tdoc N1-021341***
Budapest, Hungary, 13. – 17. May 2002

3GPP TSG-GERAN Meeting #9 **Tdoc GP-02xxxx**
Seattle, USA, 15.-19.April 2002

3GPP TSG-CN1 Meeting #23 ***Tdoc N1-020886***
Fort Lauderdale, Florida, USA 08. - 12. April 2002 Revision of N1-020710

CR-Form-v5

CHANGE REQUEST

⌘	24.007	CR	047	⌘ rev	2 ~~1~~	⌘	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: ⌘ (U)SIM [ ] ME/UE [X] Radio Access Network [X] Core Network [X]

Title:	⌘	RR protocol message type octet
Source:	⌘	Nokia
Work item code:	⌘	GSM-UMTS interworking
Date:	⌘	9.4.2002
Category:	⌘	**A**
Release:	⌘	Rel-4

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)*

Reason for change:	⌘	24.007 assumes that only bits 1-6 are used for the message type indication in L3 protocols. However, RR protocol has already run out of 6-bit message type code points in and therefore 7 bits are already used for the RR message types. This makes the current 24.007 text not applicable to RR protocol.
Summary of change:	⌘	Align 24.007 subclause 11.2.3.2 with R99 RR message types which are defined in 04.18.
Consequences if not approved:	⌘	Contradiction between 04.18 and 24.007. RR message may be rejected by implementation following 24.007.

Clauses affected:	⌘	11.2.3.2
Other specs affected:	⌘	[ ] Other core specifications ⌘ [ ] Test specifications [ ] O&M Specifications
Other comments:	⌘	This CR aligns 24.007 with what has already been specified in 04.18 so no changes in GERAN specifications are needed. GERAN should be given a chance to review this CR if it is agreed by CN1.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

11.2.3.2 Message type octet

11.2.3.2.1 Message type octet (when accessing Release 98 and older networks only)

The message type octet is the second octet in a standard L3 message.

When a standard L3 message is expected, and a message is received that is less than 16 bit long, that message shall be ignored.

When the radio connection started with a core network node of a Release 98 or older network, the message type IE is coded as shown in figure 11.10a and 11.10x.

Bit 8 is encoded as "0"; value "1" is reserved for possible future use as an extension bit. A protocol entity expecting a standard L3 message, and receiving a message containing bit 8 of octet 2 encoded as "1" shall diagnose a " message not defined for the PD" error and treat the message accordingly.

In messages of MM, CC, SS, GCC, BCC and LCS protocol sent using the transmission functionality provided by the RR layer to upper layers, and sent from the mobile station or the LMU to the network, bit 7 of octet 2 is used for send sequence number, see section 11.2.3.2.3.

In all other standard layer 3 messages, except for RR messages, bit 7 is set to a default value. A protocol entity expecting a standard L3 message, and not using the transmission functionality provided by the RR layer, and receiving a message containing bit 7 of octet 2 encoded different to the default value shall diagnose a "message not defined for the PD" error and treat the message accordingly.

The default value for bit 7 is 0 except for the SM protocol where the default value is 1. No default value for bit 7 is specified for RR protocol. For RR message types see 3GPP TS 44.018.

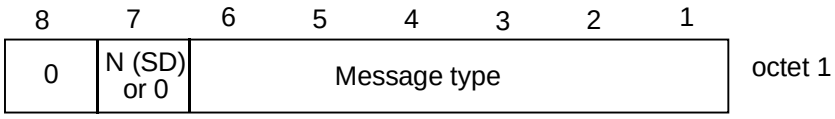

Figure 11.10a: Message type IE (MM, CC, SS, GCC, BCC and LCS)

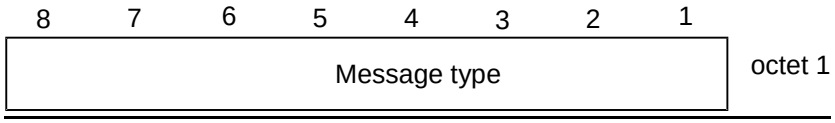

Figure 11.10x: Message type IE (protocol other than MM, CC, SS, GCC, BCC and LCS)

~~Bit~~ For MM, CC, SS, GCC, BCC and LCS protocols bits 1 to 6 of octet 2 of standard L3 messages contain the message type. For all other L3 protocols bits 1 to 8 of octet 2 of standard L3 message contain the message type.

The message type determines the function of a message within a protocol in a given direction and for a given lower layer SAP. The meaning of the message type is therefore dependent on the protocol (the same value may have different meanings in different protocols), the direction (the same value may have different meanings in the same protocol, when sent from the Mobile Station to the network and when sent from the network to the Mobile Station) and the lower layer SAP (the same value may have different meanings, e.g., whether the message was sent on the SACCH or on the main DCCH).

Each protocol defines a list of allowed message types for each relevant SAP. A message received analysed as a standard L3 message, and with a message type not in the corresponding list leads to the diagnosis "message not defined for the PD". Some message types may correspond to a function not implemented by the receiver. They are then said to be non implemented by the receiver.

The reaction of a protocol entity expecting a standard L3 message and receiving a message with message type not defined for the PD or not implemented by the receiver and the reception conditions is defined in the relevant protocol specification. As a general rule, a protocol specification should not force the receiver to analyse the message further.

11.2.3.2.2 Message type octet (when accessing Release 99 and newer networks)

The message type octet is the second octet in a standard L3 message.

When a standard L3 message is expected, and a message is received that is less than 16 bit long, that message shall be ignored.

When the radio connection started with a core network node of a Release 99 or later network, the message type IE is coded dependent on the PD as shown in figures 11.10b, c and d.

In messages of MM, CC and SS protocol sent using the transmission functionality provided by the RR and/or access stratum layer to upper layers, and sent from the mobile station or the LMU to the network , bits 7 and 8 of octet 2 are used for send sequence number, see section 11.2.3.2.3.

In messages of GCC, BCC and LCS protocol sent using the transmission functionality provided by the RR layer to upper layers, and sent from the mobile station to the network or, for LCS, sent from the LMU to the network, only bit 7 of octet 2 is used for send sequence number. Bit 8 is set to the default value.

In all other standard layer 3 messages, except for RR messages, bits 7 and 8 are set to the default value. A protocol entity expecting a standard L3 message, and not using the transmission functionality provided by the RR and/or access stratum layer, and receiving a message containing bit 7 or bit 8 of octet 2 encoded different to the default value shall diagnose a "message not defined for the PD" error and treat the message accordingly.

In messages of the RR protocol entity, bit 8 of octet 2 is set to the default value. The other value is reserved for possible future use as an extension bit .If an RR protocol entity expecting a standard L3 message receives message containing bit 8 of octet 2 encoded different from the default value it shall diagnose a "message not defined for the PD" error and treat the message accordingly.

The default value for bit 8 is 0. The default value for bit 7 is 0 except for the SM protocol which has a default value of 1. No default value for bit 7 is specified for RR protocol. For RR message types see 3GPP TS ~~0~~44.018.

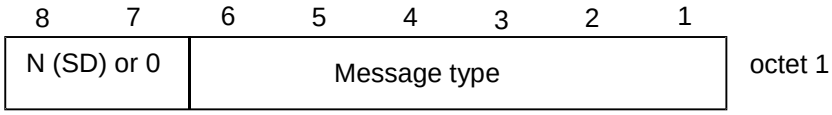

Figure 11.10b: Message type IE (MM, CC and SS)

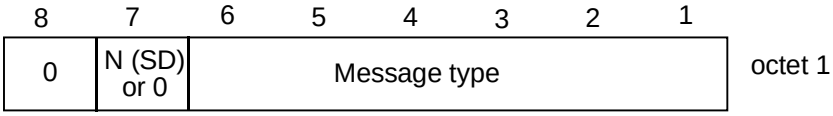

Figure 11.10c: Message type IE (GCC, BCC and LCS)

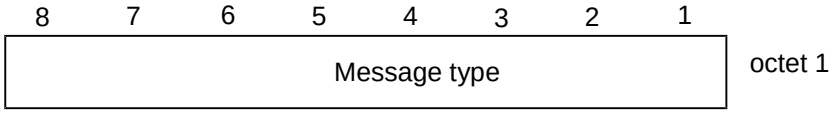

Figure 11.10d: Message type IE (protocol other than MM, CC, SS, GCC, BCC and LCS)

~~Bit~~ For MM, CC, SS, GCC, BCC and LCS protocols bits 1 to 6 of octet 2 of standard L3 messages contain the message type. For all other L3 protocols bits 1 to 8 of octet 2 of standard L3 message contain the message type.

The message type determines the function of a message within a protocol in a given direction and for a given lower layer SAP. The meaning of the message type is therefore dependent on the protocol (the same value may have different meanings in different protocols), the direction (the same value may have different meanings in the same protocol, when sent from the Mobile Station to the network and when sent from the network to the Mobile Station) and the lower layer SAP (the same value may have different meanings, e.g., whether the message was sent on the SACCH or on the main DCCH).

Each protocol defines a list of allowed message types for each relevant SAP. A message received analysed as a standard L3 message, and with a message type not in the corresponding list leads to the diagnosis "message not defined for the PD". Some message types may correspond to a function not implemented by the receiver. They are then said to be non implemented by the receiver.

The reaction of a protocol entity expecting a standard L3 message and receiving a message with message type not defined for the PD or not implemented by the receiver and the reception conditions is defined in the relevant protocol specification. As a general rule, a protocol specification should not force the receiver to analyse the message further.