3GPP TSG CN Plenary **Tdoc NP-010266**
Meeting #12, Stockholm, Sweden
13th - 15th June 2001

Source: **TSG CN WG 1**

Title: **CR sets (one set to be decided) to R99 (with mirror CR) on Work Item Multicall towards 23.009**

Agenda item: **7.18**

Document for: **APPROVAL**

Introduction:

This document contains **2 CR sets**, each with **2** CRs on **R99 (one is mirror CR) to** Work Item **"Multicall"**, that have been CONDITIONALLY agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #12 for possibel decision of one set with approval.

Below the table is inserted the LS from CN1 to RAN3 for a possibel selection between the 2 sets.
And below this LS (N1 –010870) is the LS answer (R3-011824) from RAN3 providing more information, but also with no decision. Thus these LSs are included here for helping CN#12 in making a decision.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Version-Current	Workitem
23.009	028	1	N1-010816	R99	Priority selection criteria of calls in a multicall	F	3.6.0	Multicall
23.009	029	1	N1-010817	Rel-4	Priority selection criteria of calls in a multicall	A	4.0.0	Multicall
Spec	**CR**	**Rev**	**Doc-2nd-Level**	**Phase**	**Subject**	**Cat**	**Version-Current**	**Workitem**
23.009	038		N1-010826	R99	Priority selection criteria of calls in a multicall	F	3.6.0	Multicall
23.009	039		N1-010827	Rel-4	Priority selection criteria of calls in a multicall	A	4.0.0	Multicall

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3GPP TSG CN WG1 Meeting #17 **Tdoc N1-010870**
Puerto Rico, 14th - 18th May 2001

Title: **LS on Priority Selection Criteria of Calls in a Multicall**

Source: **TSG CN WG1**

To: **TSG RAN WG3**

Cc: **TSG SA WG1**

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1. Overall Description:

During their ad hoc meeting on “old stuff up to R99”, 8-9 May, and the CN1 meeting #17, 14-18 May, CN1 discussed a service requirement from SA1 concerning the selection criteria of calls in a multicall which have to be applied when it is not possible to handover all bearers belonging to a multicall.

This situation may occur in case of UMTS to GSM inter-system handover, in case of the basic inter-MSC relocation if 3G_MSC-B does not support multicall or cannot support the number of bearers requested by 3G_MSC-A, or in case of a lack of radio resources in the UMTS target cell.

According to the Multicall specification, TS 22.135, the handover requirements for multicall are specified in 3GPP TS 22.129. The current version 3.5.0 of these requirements specifies that the calls have to be selected for handover in the following order of priority:

i. The call of teleservice emergency call
ii. The call of teleservice telephony
iii. The call of any other type

According to the current version of TS 23.009, 3G_MSC-A and 3G_MSC-B have to base their decision on “the priority level as defined in RAB parameters in 25.413” (i.e. the allocation/retention priority). However, the priority field is optional in TS 25.413 and therefore may not always be available. Besides, it was claimed by one delegation that in some countries the regulator explicitly forbids the allocation of priorities to calls.

CN1 discussed two different proposals to align TS 23.009 with the requirements in TS 22.129, but could not reach an agreement. Since CN1 thinks that RAN3 is also affected by the service requirements from SA1 and by the two proposed solutions, CN1 would like to ask RAN3 for a decision which of the alternatives should be selected.

To speed up the process, CN1 conditionally agreed two alternative sets of CRs for R99 and Rel-4. CN1 kindly asks RAN3 to make a decision between these two proposals during next week’s RAN3 meeting and inform CN1 immediately about the outcome so that CN1 can forward one of the sets of CRs for approval to the CN plenary #12.

The annex of this liaison statement tries to summarise the discussion in CN1 and is intended to aid RAN3 in finding their decision. CN1 kindly asks RAN3 to answer also the questions included in the annex.

2. Actions:

To RAN WG3.

ACTION: CN1 asks RAN3 to decide which of the two solutions in the attached CRs should be chosen, and to inform CN1 immediately about their decision.

3. Date of Next CN Meetings:

CN_12 plenary	13th – 15th June 2001	Stockholm, Sweden

4. Attachments:

N1-010816 [CR 28r1 on TS 23.009].

N1-010826 [CR 38 on TS 23.009].

Annex:

1. Alternative Solutions:

Two proposals were discussed in CN1.

Proposal A (N1-010816)**:** The selection criteria in TS 23.009 shall be based on the criteria specified by SA1 in TS 22.129, which should be modified to take into account the priority levels for non-speech calls when applicable. This implies that the anchor and target 3G_MSC must be aware if the call is a speech call, which is necessary to be able to apply the criteria from TS 22.129.

Proposal B (N1-010826)**:** The allocation/retention priority shall be used to implement the requirement from SA1 in the stage 2 specification, TS 23.009. This implies that a 3G_MSC-A supporting multicall shall allocate priority levels for all bearers, and that it shall do so in such a way that the criteria from TS 22.129 are met. (In the current version of TS 25.413 the priority is an optional parameter.)

2. Discussion of the two proposals:

2.1 Proposal A

With regard to proposal A the discussion concentrated on the issues whether all the necessary information is available at 3G_MSC-B, and how it can be ensured that the requirements from TS 22.129 are fulfilled also during MSC-internal relocation.

1) In section 4.4.1 of TS 23.009, the following has been specified for 3G_MSC-B:

If 3G_MSC-B supports the optional supplementary service Multicall (See 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 an Handover Number for each bearer. The 3G-MSC-B shall also be able to select some bearers so that the number of bearers will fulfill the maximum number of bearers supported by the 3G_MSC-B.

Note that for this selection 3G_MSC-B shall apply the selection criteria as specified in TS 22.129, although this is not mentioned explicitly.

Since the priority in the RANAP message Relocation Request is optional, and the MAP parameter Radio Resource Information (=BSSMAP Channel Type) may be missing from the MAP_Prepare_Handover request, it may be necessary for 3G_MSC-B to base its decision only on the RAB parameters. It was pointed out that the parameter Source Statistics Descriptor could be used, since it indicates whether the call is a speech call or not (note that the RNC can also use this information if needed).

According to TS 25.413 the Source Statistics Descriptor is a conditional parameter included in the RAB parameters and is specified as follows:

>Source Statistics Descriptor	C-iftrafficConv-Stream		ENUMERATED (speech, unknown, …)	**Desc.:** This IE specifies characteristics of the source of submitted SDUs **Usage:** -

IftrafficConv-Stream	This IE is only present when traffic class indicates “Conversational” or “Streaming”

There were different opinions within CN1 whether the Source Statistics Descriptor can be used to unequivocally identify whether a call is a speech call. CN1 would like to ask RAN3 for guidance:

Q1: Can we base the decision whether a call is a speech call on the Source Statistics Descriptor?

2) In section 4.3.1 of TS 23.009, the following has been specified for 3G_MSC-A:

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

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

A similar description applies to 3G_MSC-B for the case of subsequent Intra-3G_MSC-B relocation.

Q2: Is it possible in these situations that the target RNC will establish only some of the bearers requested by the MSC, e.g. for reasons of lack of resources?

If yes, how can the requirements from TS 22.129 be fulfilled, since it specifies requirements to the network, not just to the MSC? As the Source Statistics Descriptor is available also to the target RNC, the RNC could

1. follow the criteria specified in TS 22.129 for the selection of bearers in a Multicall;
2. or it could still use the priority field if available. (In this case, however, there is a risk of dropping an emergency call, if for example the priority field is not included for the emergency call but for a parallel data call and if there is congestion in RNC).

With regard to alternative 1: note that although in release 99 and release 4 there can be only one speech call in a multicall, TS 22.129 already specifies requirements for the "Support of Multicall with Simultaneous Voice Calls". If one day it were possible to have more than one speech call in a multicall, 3G_MSC-B and the RNC would not only need to discriminate between speech calls and data calls, but also between speech calls and emergency (speech) calls.

With regard to alternative 2: if the RNC is not able to establish all the bearers requested by the MSC and the choice of bearers made by the RNC does not comply with the requirements from TS 22.129, the MSC could abort the first resource allocation and send a second Relocation Request for a subset of bearers. (I.e. in this case the actual selection of the calls would be made by the MSC). If such a procedure is not supported by RANAP (and the RNC does not support alternative 1), it cannot be guaranteed that the requirements from TS 22.129 are fulfilled if the RNC makes the selection.

Q3: Is such a procedure (repetition of the resource allocation as outlined above) supported by the current version of TS 25.413?

2.2 Proposal B

Concerning proposal B the discussion concentrated on the issue that with this proposal the allocation/ retention priority would become a conditional instead of an optional information element in RANAP.

It was noted that it may be sufficient to make the priority conditional in the procedural description, but not in the encoding of the message.

During the discussion one delegation commented: " Even if the specifications would be changed so that the priority is mandatory for multicall in TS 25.413, it would not guarantee that an emergency call can always be handed over, since one RNC is handling a big amount of calls for several subscribers and not all will use multicall (and mandatory priority). Therefore the RNC must be able to handle channel allocation for the bearers that have priority and bearers that do not have priority. It does not really matter if a bearer is for multicall or not. They are just bearers. The same principle should be used in case of multicall if not all bearers have priority."

The answer to this comment was that TS 22.129 only specifies requirements for priorities between the different calls belonging to the same multicall. Priorities between calls belonging to different subscribers, which might e.g. trigger pre-emption, are a different issue.

TSG-RAN Working Group 3 meeting #21 ***TSGR3#21(01)1824***

Busan, South Korea, May 21st – 25th, 2001

Source: **TSG RAN WG3**

To: **TSG CN WG1**

CC: **TSG SA WG1**

Title: **Answer LS on Priority Selection Criteria of Calls in a Multicall**

Contact: alexander.vesely@siemens.at

RAN3 thanks CN1 for their confidence in our expertise to make a final decision on the excellent work they already performed on that issue.

Therefore, RAN3 feels very sorry about the fact to have to report, that we put some effort on evaluating the proposals but could not reach consensus on selecting one of the solutions and therefore kindly request CN1 to further evaluate this issue in their future meetings.

RAN3 would like to provide, as a kind of discussion report and input for further discussions within CN1 some details of our discussions and finally, explicitly provide answers to their questions:

- RAN3 evaluated whether specifications under RAN3's responsibility are affected and came to the conclusion, that the required mechanism can be achieved by applying the current RANAP specification.
- It was clarified, that implicit information at the absence of the allocation/retention priority information within the *RAB parameters* IE is given with the meaning that the lowest priority is allocated to the call.
- It was further reported by one delegation that according to the information they retrieved most regulatory bodies require to explicitly allocate priorities to calls.
- Further, when reviewing TS 23.107, QoS Concept and Architecture, chapter 6.4.4, Radio Access Bearer Service Attributes, which gives the definition of the Allocation/Retention Priority, RAN3 was of the opinion, that this definition could be applicable for the mentioned multicall situation as well. The actual definition is given below:

  > Definition: specifies the relative importance compared to other Radio access bearers for allocation and retention of the Radio access bearer. The Allocation/Retention Priority attribute is a subscription parameter which is not negotiated from the mobile terminals
  >
  > NOTE 4: The addition of a user-controlled Allocation/Retention Priority attribute is for further study in future releases.
  >
  > *[Purpose: Priority is used for differentiating between bearers when performing allocation and retention of a bearer. In situations where resources are scarce, the relevant network elements can use the Allocation/Retention Priority to prioritize bearers with a high Allocation/Retention Priority over bearers with a low Allocation/Retention Priority when performing admission control.]*

- Further, it was clarified that according to the role-model given in TS 23.009 and TS 29.108, MSC-A *[Note: RAN3 is aware of CN1's distinction between MSC and 3G_MSC]* keeps control of the service and MSC-B shall act as a RNS/BSS towards MSC-A. If service information is given to MSC-B as requested in 22.129 for applying the selection criteria (regardless of whether this is applied on MAP or RANAP parameter level) this would change the role of MSC-B to some extent.
- But the issue was also raised, that if the *same* allocation/retention priority is allocated to e.g. the speech and a data call, the rule within TS 22.129 cannot be applied, as this would require additional information within MSC-B, i.e the MSC-A would have to provide information about the actual teleservice (e.g. emergency call, telephony, etc.) using the respective RAB to MSC-B, which is currently not the case.
- It was also raised that the solution selected should not cause backwards compatibility problems.

Finally, RAN3 would like to provide CN1 with following answers to their questions:

Q1: Can we base the decision whether a call is a speech call on the Source Statistics Descriptor?

As the SSD gives additional information of the statistical behaviour of the source, one cannot deduce from the SSD whether the RAB concerned is used by a speech call or not.

Q2: Is it possible in these situations that the target RNC will establish only some of the bearers requested by the MSC, e.g. for reasons of lack of resources?

Yes

Q3: Is such a procedure (repetition of the resource allocation as outlined above) supported by the current version of TS 25.413?

The possibility to repeat the resource allocation is not within the scope of RANAP. This is rather an implementation issue. But in principle RANAP supports the repetition of resource allocation.

3GPP TSG-CN WG1 Meeting #17
Puerto Rico, 14th - 18th May 2001

Tdoc N1-010816

R-Form-v3

CHANGE REQUEST

⌘ **23.009 CR** 028 ⌘ rev **1** ⌘ Current version: 3.6.0 ⌘

*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 ☒

Title:	⌘	Priority selection criteria of calls in a multicall
Source:	⌘	Nokia, Alcatel
Work item code:	⌘	Multicall
Date:	⌘	08.05.01
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(essential 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: ⌘ When a handover of a multicall takes place in some situations only one bearer can be handed over, for example in InterSystem handover to GSM or in basic relocation when the target MSC does not support Multicall service.
In these cases the 3G-MSC shall select one bearer among the various bearers of the multicall.

In 23.009 the following criteria is used for the selection:
the priority level as defined in RAB parameters in 25.413.

This is a problem since the priority field is an optional field in 25.413.

However in 22.129 the following is stated:

5.4 Handover of a Multicall

The handover event can trigger changes to individual calls in any multicall scenario.

It shall be possible to handover all the calls in a multicall configuration.. If the target cell is not able to accommodate all the calls in a multicall configuration, then the calls that are handed over shall be selected in following order:

i. The call of teleservice emergency call
ii. The call of teleservice telephony
iii. The call of any other type

Calls that cannot be handed over will be released.
If no single call can be selected according to the above criteria, handover shall be rejected.
A change in the availability of suitable radio resources may also occur for other reasons in addition to handover.

		Therefore both criterias should be mapped in a way that only consistent priority order can be applied for the selection of calls in the handover of a Multicall.
Summary of change:	⌘	This CR proposes to coordinate both specifications, by refering in the text in 23.009 in chapters and 4.3.1 and 4.4.1 to the selection criteria defined in TS 22.129.
Consequences if not approved:	⌘	If not approved this may lead to a situation when different selection criteria are applied in different MSCs (for instance in 3G-MSC A and 3G-MSC B) when selecting one bearer to be handed over in a Multicall situation.

Clauses affected:	⌘	4.3.1 and 4.4.1			
Other specs Affected:	⌘	**X**	Other core specifications	⌘	22.129
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

********** First Modified Sections **********

4.3 3G_MSC-A

For roles and functional composition of the 3G_MSC-A working as pure GSM MSC, please see previous clause ("MSC-A").

4.3.1 Role of 3G_MSC-A

In the Intra-3G_MSC handover/relocation case, the 3G_MSC-A (simply termed 3G_MSC) controls the call, the mobility management and the radio resources before, during and after an Intra-3G_MSC handover/relocation. When RANAP or BSSMAP procedures have to be performed, they are initiated and driven by 3G_MSC-A.
In the case of an inter-system, intra-MSC handover of a speech call, 3G_MSC-A controls the transcoder in the core network. The 3G_MSC-A determines if a transcoder is required to be inserted or released in the CN.
In case of ATM network between 3G_MSC-A and 3G_MSC-B, 3G_MSC-A retains control of transcoder. In the case of TDM between 3G_MSC-A and 3G_MSC-B, 3G_MSC-A assumes G.711 [16] coding on the TDM E-interface. In case of UMTS to GSM handover, 3G_MSC-A assumes G.711 [16] coding on the ATM E-interface.
In the Inter-3G_MSC relocation case, 3G_MSC-A is the 3G_MSC that controls the call and the mobility management of the UE during the call, before, during and after a basic or subsequent relocation. When RANAP procedures related to dedicated resources have to be performed towards the UE, they are initiated and driven by 3G_MSC-A. The 3G_MSC-A - 3G_MSC-B interface works as a 3G_MSC - RNS interface for the RANAP procedures. The Direct Transfer signalling is relayed transparently by 3G_MSC-B between 3G_MSC-A and the UE.
During a basic relocation, 3G_MSC-A initiates and controls all the relocation procedure, from its initiation (reception of Relocation Required from RNS-A on Iu-interface) until its completion (reception of Relocation Complete from 3G_MSC-B on E-interface).
During a subsequent relocation back to 3G_MSC-A, 3G_MSC-A acts as an RNS towards 3G_MSC-B, which controls the relocation procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Relocation Request Acknowledge to 3G_MSC-B from 3G_MSC-A). Then all relocation related messages shall terminate at 3G_MSC-A (e.g. Relocation Detect/Complete from RNS-B, Relocation Cancel from RNS-A).
During a subsequent relocation to a third 3G_MSC, 3G_MSC-A works towards 3G_MSC-B' as described above in the basic relocation paragraph and towards 3G_MSC-B as described above in subsequent relocation paragraph.
In the Inter-System, inter-3G_MSC handover case, 3G_MSC-A is the 3G_MSC which controls the call and the mobility management of the UE/MS during the call, before, during and after a basic or subsequent inter-system handover. When BSSAP procedures related to dedicated resources have to be performed towards the UE/MS, they are initiated and driven by 3G_MSC-A. The 3G_MSC-A – MSC-B interface works as a 3G_MSC – BSS interface for a subset of BSSMAP procedures. These BSSMAP procedures described in GSM 09 08 are those related to dedicated resources. The DTAP signalling is relayed transparently by MSC-B between 3G_MSC-A and the UE/MS.
During a basic inter-system UMTS to GSM handover, 3G_MSC-A initiates and controls all the handover procedure, from its initiation (reception of Relocation Required from RNS-A on Iu-interface) until its completion (reception of Handover Complete from MSC-B on E-interface).
During a subsequent inter-system UMTS to GSM handover back to 3G_MSC-A, 3G_MSC-A acts as a BSS towards 3G_MSC-B, which controls the handover procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Handover Request Acknowledge to 3G_MSC-B from 3G_MSC-A). Then all handover related messages shall terminate at 3G_MSC-A (e.g. Handover Detect/Complete from BSS-B, Relocation Cancel from RNS-A).
During a subsequent inter-system UMTS to GSM handover to a third 3G_MSC, 3G_MSC-A works towards MSC-B' as described above in the basic inter-system handover paragraph and towards 3G_MSC-B as described above in subsequent inter-system handover paragraph.
During a basic inter-system GSM to UMTS handover, 3G_MSC-A initiates and controls all the handover procedure, from its initiation (reception of Handover Required from BSS-A on A-interface) until its completion (reception of Handover Complete from 3G_MSC-B on E-interface).
During a subsequent inter-system GSM to UMTS handover back to 3G_MSC-A, 3G_MSC-A acts as an RNS towards MSC-B, which controls the handover procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Handover Request Acknowledge to MSC-B from 3G_MSC-A). Then all handover related messages shall terminate at 3G_MSC-A (e.g. Relocation Detect/Complete from RNS-B, Handover Failure from BSS-A).
During a subsequent inter-system GSM to UMTS handover to a third 3G_MSC, 3G_MSC-A works towards 3G_MSC-B' as described above in the basic inter-system handover paragraph and towards MSC-B as described above in subsequent inter-system handover paragraph.

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

- In the Intra-3G_MSC relocation case, the 3G-MSC-A tries to relocate all bearers to a new RNS.
- In the basic relocation case, the 3G-MSC-A tries to relocate all bearers to 3G_MSC-B. If 3G_MSC-A receives an indication that the 3G_MSC-B does not support multiple bearers, then 3G_MSC-A shall be able to select one bearer to be

handed over according to the ~~priority level defined as RAB parameters in 3GPP TS 25.413 [11]~~ selection criteria defined in 3GPP TS 22.129 [9]and tries again to relocate the selected bearer.

- In the subsequent relocation to a third 3G_MSC-B' case, the 3G-MSC-A tries to relocate all bearers to 3G_MSC-B'. If 3G_MSC-A receives an indication that the 3G_MSC-B' does not support multiple bearers, then 3G_MSC-A shall be able to select one bearer to be handed over according to the ~~priority level defined as RAB parameters in 3GPP TS 25.413 [11]~~ selection criteria defined in 3GPP TS 22.129 [9]and tries again to relocate the selected bearer.
- In the Intra-3G_MSC inter-system UMTS to GSM handover case and the basic inter-system UMTS to GSM handover case, the 3G_MSC-A shall be able to select one bearer to be handed over according to the ~~priority level defined as RAB parameters in 3GPP TS 25.413 [11]~~ selection criteria defined in 3GPP TS 22.129 [9]and tries to handover the selected bearer.
- In all cases described above, 3G_MSC-A shall release some calls which has been carried by the bearers failed to set up in new RNS or the bearers not to be handed over.

********** **Next Modified Section** **********'

4.4 3G_MSC-B

For roles and functional composition of the 3G_MSC-B working as pure GSM MSC, please see previous clause ("MSC-B").

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.
In case of TDM networks, the role of 3G_MSC-B is also to provide transcoderresources. In the case of ATM, 3G_MSC-B has no transcoder handling.
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.
If 3G_MSC-B does not support the optional supplementary service Mutlicall (See 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 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 an Handover Number for each bearer. The 3G-MSC-B shall also be able to select some bearers so that the number of bearers will fulfill the maximum number of bearers supported by the 3G_MSC-B.
- 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 the ~~priority level defined as RAB parameters in 3GPP TS 25.413 [11]~~ selection criteria defined in 3GPP TS 22.129 [9] and tries to handover the selected bearer.

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CHANGE REQUEST

⌘ **23.009 CR** 029 ⌘ rev **1** ⌘ Current version: 4.0.0 ⌘

*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 ☒

Title:	⌘	Priority selection criteria of calls in a multicall
Source:	⌘	Nokia, Alcatel
Work item code:	⌘	Multicall
Date:	⌘	08.05.01
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(essential 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: ⌘ When a handover of a multicall takes place in some situations only one bearer can be handed over, for example in InterSystem handover to GSM or in basic relocation when the target MSC does not support Multicall service.
In these cases the 3G-MSC shall select one bearer among the various bearers of the multicall.

In 23.009 the following criteria is used for the selection:
the priority level as defined in RAB parameters in 25.413.

This is a problem since the priority field is an optional field in 25.413.

However in 22.129 the following is stated:

5.4 Handover of a Multicall

The handover event can trigger changes to individual calls in any multicall scenario.

It shall be possible to handover all the calls in a multicall configuration.. If the target cell is not able to accommodate all the calls in a multicall configuration, then the calls that are handed over shall be selected in following order:

i. The call of teleservice emergency call
ii. The call of teleservice telephony
iii. The call of any other type

Calls that cannot be handed over will be released.
If no single call can be selected according to the above criteria, handover shall be rejected.
A change in the availability of suitable radio resources may also occur for other reasons in addition to handover.

		Therefore both criterias should be mapped in a way that only consistent priority order can be applied for the selection of calls in the handover of a Multicall.
Summary of change:	⌘	This CR proposes to coordinate both specifications, by refering in the text in 23.009 in chapters and 4.3.1 and 4.4.1 to the selection criteria defined in TS 22.129.
Consequences if not approved:	⌘	If not approved this may lead to a situation when different selection criteria are applied in different MSCs (for instance in 3G-MSC A and 3G-MSC B) when selecting one bearer to be handed over in a Multicall situation.

Clauses affected:	⌘	4.3.1 and 4.4.1			
Other specs affected:	⌘	**X**	Other core specifications	⌘	22.129
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

********** First Modified Sections **********

4.3 3G_MSC-A

For roles and functional composition of the 3G_MSC-A working as pure GSM MSC, please see previous clause ("MSC-A").

4.3.1 Role of 3G_MSC-A

In the Intra-3G_MSC handover/relocation case, the 3G_MSC-A (simply termed 3G_MSC) controls the call, the mobility management and the radio resources before, during and after an Intra-3G_MSC handover/relocation. When RANAP or BSSMAP procedures have to be performed, they are initiated and driven by 3G_MSC-A.
In the case of an inter-system, intra-MSC handover of a speech call, 3G_MSC-A controls the transcoder in the core network. The 3G_MSC-A determines if a transcoder is required to be inserted or released in the CN.
In case of ATM network between 3G_MSC-A and 3G_MSC-B, 3G_MSC-A retains control of transcoder. In the case of TDM between 3G_MSC-A and 3G_MSC-B, 3G_MSC-A assumes G.711 [16] coding on the TDM E-interface. In case of UMTS to GSM handover, 3G_MSC-A assumes G.711 [16] coding on the ATM E-interface.
In the Inter-3G_MSC relocation case, 3G_MSC-A is the 3G_MSC that controls the call and the mobility management of the UE during the call, before, during and after a basic or subsequent relocation. When RANAP procedures related to dedicated resources have to be performed towards the UE, they are initiated and driven by 3G_MSC-A. The 3G_MSC-A - 3G_MSC-B interface works as a 3G_MSC - RNS interface for the RANAP procedures. The Direct Transfer signalling is relayed transparently by 3G_MSC-B between 3G_MSC-A and the UE.
During a basic relocation, 3G_MSC-A initiates and controls all the relocation procedure, from its initiation (reception of Relocation Required from RNS-A on Iu-interface) until its completion (reception of Relocation Complete from 3G_MSC-B on E-interface).
During a subsequent relocation back to 3G_MSC-A, 3G_MSC-A acts as an RNS towards 3G_MSC-B, which controls the relocation procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Relocation Request Acknowledge to 3G_MSC-B from 3G_MSC-A). Then all relocation related messages shall terminate at 3G_MSC-A (e.g. Relocation Detect/Complete from RNS-B, Relocation Cancel from RNS-A).
During a subsequent relocation to a third 3G_MSC, 3G_MSC-A works towards 3G_MSC-B' as described above in the basic relocation paragraph and towards 3G_MSC-B as described above in subsequent relocation paragraph.
In the Inter-System, inter-3G_MSC handover case, 3G_MSC-A is the 3G_MSC which controls the call and the mobility management of the UE/MS during the call, before, during and after a basic or subsequent inter-system handover. When BSSAP procedures related to dedicated resources have to be performed towards the UE/MS, they are initiated and driven by 3G_MSC-A. The 3G_MSC-A – MSC-B interface works as a 3G_MSC – BSS interface for a subset of BSSMAP procedures. These BSSMAP procedures described in GSM 09 08 are those related to dedicated resources. The DTAP signalling is relayed transparently by MSC-B between 3G_MSC-A and the UE/MS.
During a basic inter-system UMTS to GSM handover, 3G_MSC-A initiates and controls all the handover procedure, from its initiation (reception of Relocation Required from RNS-A on Iu-interface) until its completion (reception of Handover Complete from MSC-B on E-interface).
During a subsequent inter-system UMTS to GSM handover back to 3G_MSC-A, 3G_MSC-A acts as a BSS towards 3G_MSC-B, which controls the handover procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Handover Request Acknowledge to 3G_MSC-B from 3G_MSC-A). Then all handover related messages shall terminate at 3G_MSC-A (e.g. Handover Detect/Complete from BSS-B, Relocation Cancel from RNS-A).
During a subsequent inter-system UMTS to GSM handover to a third 3G_MSC, 3G_MSC-A works towards MSC-B' as described above in the basic inter-system handover paragraph and towards 3G_MSC-B as described above in subsequent inter-system handover paragraph.
During a basic inter-system GSM to UMTS handover, 3G_MSC-A initiates and controls all the handover procedure, from its initiation (reception of Handover Required from BSS-A on A-interface) until its completion (reception of Handover Complete from 3G_MSC-B on E-interface).
During a subsequent inter-system GSM to UMTS handover back to 3G_MSC-A, 3G_MSC-A acts as an RNS towards MSC-B, which controls the handover procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Handover Request Acknowledge to MSC-B from 3G_MSC-A). Then all handover related messages shall terminate at 3G_MSC-A (e.g. Relocation Detect/Complete from RNS-B, Handover Failure from BSS-A).
During a subsequent inter-system GSM to UMTS handover to a third 3G_MSC, 3G_MSC-A works towards 3G_MSC-B' as described above in the basic inter-system handover paragraph and towards MSC-B as described above in subsequent inter-system handover paragraph.

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

- In the Intra-3G_MSC relocation case, the 3G-MSC-A tries to relocate all bearers to a new RNS.
- In the basic relocation case, the 3G-MSC-A tries to relocate all bearers to 3G_MSC-B. If 3G_MSC-A receives an indication that the 3G_MSC-B does not support multiple bearers, then 3G_MSC-A shall be able to select one bearer to be

handed over according to the ~~priority level defined as RAB parameters in 3GPP TS 25.413 [11]~~ selection criteria defined in 3GPP TS 22.129 [9]and tries again to relocate the selected bearer.

- In the subsequent relocation to a third 3G_MSC-B' case, the 3G-MSC-A tries to relocate all bearers to 3G_MSC-B'. If 3G_MSC-A receives an indication that the 3G_MSC-B' does not support multiple bearers, then 3G_MSC-A shall be able to select one bearer to be handed over according to the ~~priority level defined as RAB parameters in 3GPP TS 25.413 [11]~~ selection criteria defined in 3GPP TS 22.129 [9]and tries again to relocate the selected bearer.
- In the Intra-3G_MSC inter-system UMTS to GSM handover case and the basic inter-system UMTS to GSM handover case, the 3G_MSC-A shall be able to select one bearer to be handed over according to the ~~priority level defined as RAB parameters in 3GPP TS 25.413 [11]~~ selection criteria defined in 3GPP TS 22.129 [9]and tries to handover the selected bearer.
- In all cases described above, 3G_MSC-A shall release some calls which has been carried by the bearers failed to set up in new RNS or the bearers not to be handed over.

********** **Next Modified Section** **********'

4.4 3G_MSC-B

For roles and functional composition of the 3G_MSC-B working as pure GSM MSC, please see previous clause ("MSC-B").

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.
In case of TDM networks, the role of 3G_MSC-B is also to provide transcoderresources. In the case of ATM, 3G_MSC-B has no transcoder handling.
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.
If 3G_MSC-B does not support the optional supplementary service Mutlicall (See 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 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 an Handover Number for each bearer. The 3G-MSC-B shall also be able to select some bearers so that the number of bearers will fulfill the maximum number of bearers supported by the 3G_MSC-B.
- 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 the ~~priority level defined as RAB parameters in 3GPP TS 25.413 [11]~~ selection criteria defined in 3GPP TS 22.129 [9]and tries to handover the selected bearer.

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CHANGE REQUEST

⌘ **23.009 CR 38** ⌘ rev **-** ⌘ Current version: **3.6.0** ⌘

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

Title:	⌘	Priority selection criteria of calls in a multicall
Source:	⌘	Siemens AG
Work item code:	⌘	Multicall
Date:	⌘	14.05.01
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:	*Use one of the following releases:*	
F *(essential correction)*	*2*	*(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96*	*(Release 1996)*
B *(Addition of feature),*	*R97*	*(Release 1997)*
C *(Functional modification of feature)*	*R98*	*(Release 1998)*
D *(Editorial modification)*	*R99*	*(Release 1999)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*REL-4*	*(Release 4)*
	REL-5	*(Release 5)*

Reason for change: ⌘ In case of handover of a multicall it may not be possible to handover all bearers belonging to the multicall, e.g. in case of UMTS to GSM inter-system handover, in case of inter-MSC relocation if 3G_MSC-B does not support multicall or cannot support the number of bearers requested by 3G_MSC-A, or in case of a lack of radio resources in the UMTS target cell.

In these cases the 3G_MSC-A or 3G_MSC-B shall select one or several bearers to be handed over according to the selection criteria specified in TS 22.129:

5.4 Handover of a Multicall

The handover event can trigger changes to individual calls in any multicall scenario.

It shall be possible to handover all the calls in a multicall configuration.. If the target cell is not able to accommodate all the calls in a multicall configuration, then the calls that are handed over shall be selected in following order:

i. The call of teleservice emergency call

ii. The call of teleservice telephony

iii. The call of any other type

Calls that cannot be handed over will be released.

If no single call can be selected according to the above criteria, handover shall be rejected.

A change in the availability of suitable radio resources may also occur for other reasons in addition to handover.

However, in TS 23.009 the following criterion is used for the selection:

		the priority level as defined in RAB parameters in 25.413. and currently the priority is an optional field in 25.413. In order to align both specifications, it needs to be specified that during RAB assignment and relocation request a 3G_MSC-A supporting multicall shall always assign priorities, and that the priorities shall be assigned in such a way that the requirements from TS 22.129 are fulfilled automatically.
Summary of change:	⌘	A 3G_MSC-A supporting multicall shall always assign priorities during RAB assignment and relocation request. The priorities shall be assigned in such a way that the that the requirements from TS 22.129 are fulfilled.
Consequences if not approved:	⌘	If not approved this may lead to a situation when different selection criteria are applied in different MSCs (for instance in 3G-MSC A and 3G-MSC B), and also different criteria are applied in the MSC and the RNC when selecting which bearers of a multicall will be handed over.

Clauses affected:	⌘	4.3.1		
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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.3 3G_MSC-A

For roles and functional composition of the 3G_MSC-A working as pure GSM MSC, please see previous clause ("MSC-A").

4.3.1 Role of 3G_MSC-A

In the Intra-3G_MSC handover/relocation case, the 3G_MSC-A (simply termed 3G_MSC) controls the call, the mobility management and the radio resources before, during and after an Intra-3G_MSC handover/relocation. When RANAP or BSSMAP procedures have to be performed, they are initiated and driven by 3G_MSC-A.

In the case of intra-MSC handover of a speech call, 3G_MSC-A controls the transcoder in the core network. The 3G_MSC-A determines if a transcoder is required to be inserted or released in the CN.

In the case of Inter-3G_MSC relocation, 3G_MSC-A links out the transcoder.

In the Inter-3G_MSC relocation case, 3G_MSC-A is the 3G_MSC that controls the call and the mobility management of the UE during the call, before, during and after a basic or subsequent relocation. When RANAP procedures related to dedicated resources have to be performed towards the UE, they are initiated and driven by 3G_MSC-A. The 3G_MSC-A - 3G_MSC-B interface works as a 3G_MSC - RNS interface for the RANAP procedures. The Direct Transfer signalling is relayed transparently by 3G_MSC-B between 3G_MSC-A and the UE.

During a basic relocation, 3G_MSC-A initiates and controls all the relocation procedure, from its initiation (reception of Relocation Required from RNS-A on Iu-interface) until its completion (reception of Relocation Complete from 3G_MSC-B on E-interface).

During a subsequent relocation back to 3G_MSC-A, 3G_MSC-A acts as an RNS towards 3G_MSC-B, which controls the relocation procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Relocation Request Acknowledge to 3G_MSC-B from 3G_MSC-A). Then all relocation related messages shall terminate at 3G_MSC-A (e.g. Relocation Detect/Complete from RNS-B, Relocation Cancel from RNS-A).

During a subsequent relocation to a third 3G_MSC, 3G_MSC-A works towards 3G_MSC-B' as described above in the basic relocation paragraph and towards 3G_MSC-B as described above in subsequent relocation paragraph.

In the Inter-System, inter-3G_MSC handover case, 3G_MSC-A is the 3G_MSC which controls the call and the mobility management of the UE/MS during the call, before, during and after a basic or subsequent inter-system handover. When BSSAP procedures related to dedicated resources have to be performed towards the UE/MS, they are initiated and driven by 3G_MSC-A. The 3G_MSC-A – MSC-B interface works as a 3G_MSC – BSS interface for a subset of BSSMAP procedures. These BSSMAP procedures described in 3GPP TS 09 08 [7] are those related to dedicated resources. The DTAP signalling is relayed transparently by MSC-B between 3G_MSC-A and the UE/MS.

During a basic inter-system UMTS to GSM handover, 3G_MSC-A initiates and controls all the handover procedure, from its initiation (reception of Relocation Required from RNS-A on Iu-interface) until its completion (reception of Handover Complete from MSC-B on E-interface).

During a subsequent inter-system UMTS to GSM handover back to 3G_MSC-A, 3G_MSC-A acts as a BSS towards 3G_MSC-B, which controls the handover procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Handover Request Acknowledge to 3G_MSC-B from 3G_MSC-A). Then all handover related messages shall terminate at 3G_MSC-A (e.g. Handover Detect/Complete from BSS-B, Relocation Cancel from RNS-A).

During a subsequent inter-system UMTS to GSM handover to a third 3G_MSC, 3G_MSC-A works towards MSC-B' as described above in the basic inter-system handover paragraph and towards 3G_MSC-B as described above in subsequent inter-system handover paragraph.

During a basic inter-system GSM to UMTS handover, 3G_MSC-A initiates and controls all the handover procedure, from its initiation (reception of Handover Required from BSS-A on A-interface) until its completion (reception of Handover Complete from 3G_MSC-B on E-interface).

During a subsequent inter-system GSM to UMTS handover back to 3G_MSC-A, 3G_MSC-A acts as an RNS towards MSC-B, which controls the handover procedure until the termination in 3G_MSC-A of the handover radio resources

allocation (sending of the Handover Request Acknowledge to MSC-B from 3G_MSC-A). Then all handover related messages shall terminate at 3G_MSC-A (e.g. Relocation Detect/Complete from RNS-B, Handover Failure from BSS-A).

During a subsequent inter-system GSM to UMTS handover to a third 3G_MSC, 3G_MSC-A works towards 3G_MSC-B' as described above in the basic inter-system handover paragraph and towards MSC-B as described above in subsequent inter-system handover paragraph.

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

- During RAB assignment and relocation 3G-MSC-A assigns a priority level defined as RAB parameter in 3GPP TS 25.413 [11] for each bearer. The rules for the assignment of priority levels are implementation dependent. However, the priority levels shall be assigned in such a way that the requirements from 3GPP TS 22.129 [9], subclause "Handover of a Multicall", are fulfilled if 3G_MSC-A selects the bearers to be handed over according to the priority level.

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

- In the basic relocation case, the 3G-MSC-A tries to relocate all bearers to 3G_MSC-B. If 3G_MSC-A receives an indication that the 3G_MSC-B does not support multiple bearers, then 3G_MSC-A shall be able to select one bearer to be handed over according to the priority level defined as RAB parameters in 3GPP TS 25.413 and tries again to relocate the selected bearer.

- In the subsequent relocation to a third 3G_MSC-B' case, the 3G-MSC-A tries to relocate all bearers to 3G_MSC-B'. If 3G_MSC-A receives an indication that the 3G_MSC-B' does not support multiple bearers, then 3G_MSC-A shall be able to select one bearer to be handed over according to the priority level defined as RAB parameters in 3GPP TS 25.413 [11] and tries again to relocate the selected bearer.

- In the Intra-3G_MSC inter-system UMTS to GSM handover case and the basic inter-system UMTS to GSM handover case, the 3G_MSC-A shall be able to select one bearer to be handed over according to the priority level defined as RAB parameters in 3GPP TS 25.413 [11] and tries to handover the selected bearer.

- In all cases described above, 3G_MSC-A shall release some calls which has been carried by the bearers failed to set up in new RNS or the bearers not to be handed over.

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4.4 3G_MSC-B

For roles and functional composition of the 3G_MSC-B working as pure GSM MSC, please see previous clause ("MSC-B").

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 by using the A_HANDOVER_PERFORMED procedure.

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.

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 an Handover Number for each bearer. The 3G-MSC-B shall also be able to select some bearers so that the number of bearers will fulfill the maximum number of bearers supported by the 3G_MSC-B.

- 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 the priority level defined as RAB parameters in 3GPP TS 25.413 [11] and tries to handover the selected bearer.

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Puerto Rico, 14th - 18th May 2001

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CR-Form-v3

CHANGE REQUEST

⌘ **23.009 CR 39** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

*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 ☒

Title:	⌘	Priority selection criteria of calls in a multicall
Source:	⌘	Siemens AG
Work item code:	⌘	Multicall
Date:	⌘	14.05.01
Category:	⌘	**A**
Release:	⌘	REL-4

Use one of the following categories:	*Use one of the following releases:*	
F *(essential correction)*	*2*	*(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96*	*(Release 1996)*
B *(Addition of feature),*	*R97*	*(Release 1997)*
C *(Functional modification of feature)*	*R98*	*(Release 1998)*
D *(Editorial modification)*	*R99*	*(Release 1999)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*REL-4*	*(Release 4)*
	REL-5	*(Release 5)*

Reason for change: ⌘ In case of handover of a multicall it may not be possible to handover all bearers belonging to the multicall, e.g. in case of UMTS to GSM inter-system handover, in case of inter-MSC relocation if 3G_MSC-B does not support multicall or cannot support the number of bearers requested by 3G_MSC-A, or in case of a lack of radio resources in the UMTS target cell.

In these cases the 3G_MSC-A or 3G_MSC-B shall select one or several bearers to be handed over according to the selection criteria specified in TS 22.129:

5.4 Handover of a Multicall

The handover event can trigger changes to individual calls in any multicall scenario.

It shall be possible to handover all the calls in a multicall configuration.. If the target cell is not able to accommodate all the calls in a multicall configuration, then the calls that are handed over shall be selected in following order:

i. The call of teleservice emergency call

ii. The call of teleservice telephony

iii. The call of any other type

Calls that cannot be handed over will be released.

If no single call can be selected according to the above criteria, handover shall be rejected.

A change in the availability of suitable radio resources may also occur for other reasons in addition to handover.

However, in TS 23.009 the following criterion is used for the selection:

		the priority level as defined in RAB parameters in 25.413. and currently the priority is an optional field in 25.413. In order to align both specifications, it needs to be specified that during RAB assignment and relocation request a 3G_MSC-A supporting multicall shall always assign priorities, and that the priorities shall be assigned in such a way that the requirements from TS 22.129 are fulfilled automatically.
Summary of change:	⌘	A 3G_MSC-A supporting multicall shall always assign priorities during RAB assignment and relocation request. The priorities shall be assigned in such a way that the that the requirements from TS 22.129 are fulfilled.
Consequences if not approved:	⌘	If not approved this may lead to a situation when different selection criteria are applied in different MSCs (for instance in 3G-MSC A and 3G-MSC B), and also different criteria are applied in the MSC and the RNC when selecting which bearers of a multicall will be handed over.

Clauses affected:	⌘	4.3.1		
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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.3 3G_MSC-A

For roles and functional composition of the 3G_MSC-A working as pure GSM MSC, please see previous clause ("MSC-A").

4.3.1 Role of 3G_MSC-A

In the Intra-3G_MSC handover/relocation case, the 3G_MSC-A (simply termed 3G_MSC) controls the call, the mobility management and the radio resources before, during and after an Intra-3G_MSC handover/relocation. When RANAP or BSSMAP procedures have to be performed, they are initiated and driven by 3G_MSC-A.

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

In the case of intra-MSC handover of a speech call, 3G_MSC-A controls the transcoder in the core network. The 3G_MSC-A determines if a transcoder is required to be inserted or released in the CN.

In the case of Inter-3G_MSC relocation, 3G_MSC-A links out the transcoder.

In the Inter-3G_MSC relocation case, 3G_MSC-A is the 3G_MSC that controls the call and the mobility management of the UE during the call, before, during and after a basic or subsequent relocation. When RANAP procedures related to dedicated resources have to be performed towards the UE, they are initiated and driven by 3G_MSC-A. The 3G_MSC-A - 3G_MSC-B interface works as a 3G_MSC - RNS interface for the RANAP procedures. The Direct Transfer signalling is relayed transparently by 3G_MSC-B between 3G_MSC-A and the UE.

During a basic relocation, 3G_MSC-A initiates and controls all the relocation procedure, from its initiation (reception of Relocation Required from RNS-A on Iu-interface) until its completion (reception of Relocation Complete from 3G_MSC-B on E-interface).

During a subsequent relocation back to 3G_MSC-A, 3G_MSC-A acts as an RNS towards 3G_MSC-B, which controls the relocation procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Relocation Request Acknowledge to 3G_MSC-B from 3G_MSC-A). Then all relocation related messages shall terminate at 3G_MSC-A (e.g. Relocation Detect/Complete from RNS-B, Relocation Cancel from RNS-A).

During a subsequent relocation to a third 3G_MSC, 3G_MSC-A works towards 3G_MSC-B' as described above in the basic relocation paragraph and towards 3G_MSC-B as described above in subsequent relocation paragraph.

In the Inter-System, inter-3G_MSC handover case, 3G_MSC-A is the 3G_MSC which controls the call and the mobility management of the UE/MS during the call, before, during and after a basic or subsequent inter-system handover. When BSSAP procedures related to dedicated resources have to be performed towards the UE/MS, they are initiated and driven by 3G_MSC-A. The 3G_MSC-A – MSC-B interface works as a 3G_MSC – BSS interface for a subset of BSSMAP procedures. These BSSMAP procedures described in 3GPP TS 09 08 [7] are those related to dedicated resources. The DTAP signalling is relayed transparently by MSC-B between 3G_MSC-A and the UE/MS.

During a basic inter-system UMTS to GSM handover, 3G_MSC-A initiates and controls all the handover procedure, from its initiation (reception of Relocation Required from RNS-A on Iu-interface) until its completion (reception of Handover Complete from MSC-B on E-interface).

During a subsequent inter-system UMTS to GSM handover back to 3G_MSC-A, 3G_MSC-A acts as a BSS towards 3G_MSC-B, which controls the handover procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Handover Request Acknowledge to 3G_MSC-B from 3G_MSC-A). Then all handover related messages shall terminate at 3G_MSC-A (e.g. Handover Detect/Complete from BSS-B, Relocation Cancel from RNS-A).

During a subsequent inter-system UMTS to GSM handover to a third 3G_MSC, 3G_MSC-A works towards MSC-B' as described above in the basic inter-system handover paragraph and towards 3G_MSC-B as described above in subsequent inter-system handover paragraph.

During a basic inter-system GSM to UMTS handover, 3G_MSC-A initiates and controls all the handover procedure, from its initiation (reception of Handover Required from BSS-A on A-interface) until its completion (reception of Handover Complete from 3G_MSC-B on E-interface).

During a subsequent inter-system GSM to UMTS handover back to 3G_MSC-A, 3G_MSC-A acts as an RNS towards MSC-B, which controls the handover procedure until the termination in 3G_MSC-A of the handover radio resources allocation (sending of the Handover Request Acknowledge to MSC-B from 3G_MSC-A). Then all handover related messages shall terminate at 3G_MSC-A (e.g. Relocation Detect/Complete from RNS-B, Handover Failure from BSS-A).

During a subsequent inter-system GSM to UMTS handover to a third 3G_MSC, 3G_MSC-A works towards 3G_MSC-B' as described above in the basic inter-system handover paragraph and towards MSC-B as described above in subsequent inter-system handover paragraph.

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

- During RAB assignment and relocation 3G-MSC-A assigns a priority level defined as RAB parameter in 3GPP TS 25.413 [11] for each bearer. The rules for the assignment of priority levels are implementation dependent. However, the priority levels shall be assigned in such a way that the requirements from 3GPP TS 22.129 [9], subclause "Handover of a Multicall", are fulfilled if 3G_MSC-A selects the bearers to be handed over according to the priority level.

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

- In the basic relocation case, the 3G-MSC-A tries to relocate all bearers to 3G_MSC-B. If 3G_MSC-A receives an indication that the 3G_MSC-B does not support multiple bearers, then 3G_MSC-A shall be able to select one bearer to be handed over according to the priority level defined as RAB parameters in 3GPP TS 25.413 and tries again to relocate the selected bearer.

- In the subsequent relocation to a third 3G_MSC-B' case, the 3G-MSC-A tries to relocate all bearers to 3G_MSC-B'. If 3G_MSC-A receives an indication that the 3G_MSC-B' does not support multiple bearers, then 3G_MSC-A shall be able to select one bearer to be handed over according to the priority level defined as RAB parameters in 3GPP TS 25.413 [11] and tries again to relocate the selected bearer.

- In the Intra-3G_MSC inter-system UMTS to GSM handover case and the basic inter-system UMTS to GSM handover case, the 3G_MSC-A shall be able to select one bearer to be handed over according to the priority level defined as RAB parameters in 3GPP TS 25.413 [11] and tries to handover the selected bearer.

- In all cases described above, 3G_MSC-A shall release some calls which has been carried by the bearers failed to set up in new RNS or the bearers not to be handed over.

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4.4 3G_MSC-B

For roles and functional composition of the 3G_MSC-B working as pure GSM MSC, please see previous clause ("MSC-B").

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 by using the A_HANDOVER_PERFORMED procedure.

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.

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 an Handover Number for each bearer. The 3G-MSC-B shall also be able to select some bearers so that the number of bearers will fulfill the maximum number of bearers supported by the 3G_MSC-B.

- 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 the priority level defined as RAB parameters in 3GPP TS 25.413 [11] and tries to handover the selected bearer.