

**3GPP TSG CN Plenary Meeting #14
Kyoto, JAPAN, 12th-14th December 2001**

NP-010615

Source: TSG CN WG4
Title: CRs on R99 Multicall
Agenda item: 7.18
Document for: APPROVAL

Introduction:

This document contains 2 CRs on R99 Work Item "Multicall", that have been agreed by TSG CN WG4, and are forwarded to TSG CN Plenary meeting #14 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.002	333		N4-011172	R99	Addition of RAB ID to Prepare Handover procedure	F	3.10.0
29.002	334		N4-011173	Rel-4	Addition of RAB ID to Prepare Handover procedure	A	4.5.0

CHANGE REQUEST

⌘ **29.002** **CR 333** ⌘ rev **-** ⌘ Current version: **3.10.0** ⌘

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:	⌘ Addition of RAB ID to Prepare Handover procedure		
Source:	⌘ CN4		
Work item code:	⌘ Multicall	Date:	⌘ 8.10.2001
Category:	⌘ F (Essential correction)	Release:	⌘ R99
	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (Addition of feature),</p> <p>C (Functional modification of feature)</p> <p>D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>REL-4 (Release 4)</p> <p>REL-5 (Release 5)</p>

Reason for change:	<p>⌘ RAB ID is added to MAP Prepare Handover message to allow GSM to UMTS intersystem handover within MSC-B if access network protocol in E-interface is BSSAP and the RAB ID of the bearer associated with ongoing call(s) has value other than 1.</p> <p>This situation arises when the user has an ongoing multicall or the last ongoing call has belonged to a multicall configuration in UMTS and inter MSC handover to GSM is performed. In multicall configuration calls using dedicated radio bearers have different Stream Identifier values, i.e. the first established call has SI=1, second call SI=2, and so on. Respectively radio access bearers associated with the calls have identities as RAB ID=1, RAB ID=2, and so on. In GSM to UMTS handover the RAB ID of the established bearer has to have same value as the stream identifier of the call to which handover is performed.</p> <p>3GPP 24.008 states following:</p> <p>10.5.4.28 Stream Identifier</p> <p>The purpose of the stream identifier (SI) information element is to associate a particular call with a Radio Access Bearer (RAB), and to identify whether a new traffic channel shall be assigned within the interface controlled by these signalling procedures. The SI value indicated in the CC protocol shall be sent in the RAB setup message. And mobile station is informed the relationship between the call and the RAB.</p>
Summary of change:	⌘ RAB ID is added to MAP Prepare Handover message as an optional parameter.
Consequences if	⌘ If the MSC-B does not know what RAB ID value has to be used in RANAP

not approved: Relocation Request message the handover to UMTS fails if the value is not the same as the value of Stream Identifier at call control level in MSC-A and UE.

Clauses affected:	⌘	7.6.2, 8.4.1, 17.7.1		
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘	
		<input type="checkbox"/> Test specifications		
		<input type="checkbox"/> 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.

7.6.2.57 RAB ID

This parameter indicates the radio access bearer identifier as defined in 3G TS 25.413. This parameter is used to relate the radio resources with the radio access bearers.

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

8.4.1 MAP_PREPARE_HANOVER service**8.4.1.1 Definition**

This service is used between MSC-A and MSC-B (E-interface) when a call is to be handed over or relocated from MSC-A to MSC-B.

The MAP_PREPARE_HANOVER service is a confirmed service using the primitives from table 8.4/1.

8.4.1.2 Service primitives**Table 8.4/1: MAP_PREPARE_HANOVER**

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
Target Cell Id	C	C(=)		
Target RNC Id	C	C(=)		
HO-NumberNotRequired	C	C(=)		
IMSI	C	C(=)		
Integrity Protection Information	C	C(=)		
Encryption Information	C	C(=)		
Radio Resource Information	C	C(=)		
AN-APDU	C	C(=)	C	C(=)
Allowed GSM Algorithms	C	C(=)		
Allowed UMTS Algorithms	C	C(=)		
Radio Resource List	C	C(=)		
<u>RAB ID</u>	<u>C</u>	<u>C(=)</u>		
Handover Number			C	C(=)
Relocation Number List			C	C(=)
Multicall Bearer Information			C	C(=)
Multiple Bearer Requested	C	C(=)		
Multiple Bearer Not Supported			C	C(=)
Selected UMTS Algorithms			C	C(=)
Chosen Radio Resource Information			C	C(=)
User error			C	C(=)
Provider error				O

8.4.1.3 Parameter use**Invoke Id**

For definition of this parameter see subclause 7.6.1.

Target Cell Id

For definition of this parameter see subclause 7.6.2. This parameter is only included if the service is not in an ongoing transaction. This parameter shall also be excluded if the service is a part of the Inter-MSC SRNS Relocation procedure or the inter-system handover GSM to UMTS procedure described in 3G TS 23.009.

Target RNC Id

For definition of this parameter see subclause 7.6.2. This parameter shall be included if the service is a part of the Inter-MSC SRNS Relocation procedure or the inter-system handover GSM to UMTS procedure described in 3G TS 23.009.

HO-Number Not Required

For definition of this parameter see subclause 7.6.6.

IMSI

For definition of this parameter see subclause 7.6.2. This UMTS parameter shall be included if:

- it is available and
- if the access network protocol is BSSAP and
- there is an indication that the MS also supports UMTS.

Integrity Protection Information

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if available and if the access network protocol is BSSAP.

Encryption Information

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if available and if the access network protocol is BSSAP.

Radio Resource Information

For definition of this parameter see subclause 7.6.6. This GSM parameter shall be included if the access network protocol is RANAP and there is an indication that the UE also supports GSM. If the parameter Radio Resource List is sent, the parameter Radio Resource Information shall not be sent.

AN-APDU

For definition of this parameter see subclause 7.6.9.

Allowed GSM Algorithms

For definition of this parameter see subclause 7.6.6. This parameter includes allowed GSM algorithms. This GSM parameter shall be included if:

- the service is a part of the Inter-MSC SRNS Relocation procedure and
- Ciphering or Security Mode Setting procedure has been performed and
- there is an indication that the MS also supports UMTS.

Allowed UMTS Algorithms

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if all of the following conditions apply:

- access network protocol is BSSAP and
- Integrity Protection Information and Encryption Information are not available and
- Ciphering or Security Mode Setting procedure has been performed.

Radio Resource List

For definition of this parameter see subclause 7.6.6. This parameter shall be included if the access network protocol is RANAP and there is an indication that the UE also supports GSM. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B. If the parameter Radio Resource Information is sent, the parameter Radio Resource List shall not be sent.

RAB ID

For definition of this parameter see subclause 7.6.2. This parameter shall be included when MSC-A supports multiple bearers and access network protocol is BSSAP and the RAB ID has a value other than 1.

Handover Number

For definition of this parameter see subclause 7.6.2. This parameter shall be returned at handover, unless the parameter HO-NumberNotRequired is sent. If the parameter Handover Number is returned, the parameter Relocation Number List shall not be returned.

Relocation Number List

For definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation, unless the parameter HO-NumberNotRequired is sent. If the parameter Relocation Number List is returned, the parameter Handover Number shall not be returned.

Multicall Bearer Information

For a definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation in the case that MSC-B supports multiple bearers.

Multiple Bearer Requested

For a definition of this parameter see subclause 7.6.2. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B.

Multiple Bearer Not Supported

For a definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation when MSC-B receives Multiple Bearer Requested parameter and MSC-B does not support multiple bearers.

Selected UMTS Algorithms

For definition of this parameter see subclause 7.6.6. This parameters includes the UMTS integrity and optionally encryption algorithms selected by RNC under the control of MSC-B. This UMTS parameter shall be included if the service is a part of the inter MSC inter system handover from GSM to UMTS.

Chosen Radio Resource Information

For definition of this parameter see subclause 7.6.6. This parameter shall be returned at relocation if the encapsulated PDU is RANAP RAB Assignment Response and MS is in GSM access.

User error

For definition of this parameter see subclause 7.6.1. The following errors defined in subclause 7.6.1 may be used, depending on the nature of the fault:

- No handover number available.
- Target cell outside group call area;
- System failure.
- Unexpected data value.
- Data Missing.

Provider error

See definition of provider errors in subclause 7.6.1.

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

17.7 MAP constants and data types

17.7.1 Mobile Service data types

....

PrepareHO-Arg ::= [3] SEQUENCE {		
targetCellId	[0] GlobalCellId	OPTIONAL,
ho-NumberNotRequired	NULL	OPTIONAL,
targetRNCId	[1] RNCId	OPTIONAL,
an-APDU	[2] AccessNetworkSignalInfo	OPTIONAL,
multipleBearerRequested	[3] NULL	OPTIONAL,
imsi	[4] IMSI	OPTIONAL,
integrityProtectionInfo	[5] IntegrityProtectionInformation	OPTIONAL,
encryptionInfo	[6] EncryptionInformation	OPTIONAL,
radioResourceInformation	[7] RadioResourceInformation	OPTIONAL,
allowedGSM-Algorithms	[9] AllowedGSM-Algorithms	OPTIONAL,
allowedUMTS-Algorithms	[10] AllowedUMTS-Algorithms	OPTIONAL,
radioResourceList	[11] RadioResourceList	OPTIONAL,
extensionContainer	[8] ExtensionContainer	OPTIONAL,
..._		
rab-Id	[12] RAB-Id	OPTIONAL }

CHANGE REQUEST

⌘ **29.002** **CR 334** ⌘ rev **-** ⌘ Current version: **4.5.0** ⌘

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

Title:	⌘ Addition of RAB ID to Prepare Handover procedure		
Source:	⌘ CN4		
Work item code:	⌘ Multicall	Date:	⌘ 8.10.2001
Category:	⌘ A	Release:	⌘ Rel-4
<p>Use <u>one</u> of the following categories:</p> <p>F (correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	<p>⌘ RAB ID is added to MAP Prepare Handover message to allow GSM to UMTS intersystem handover within MSC-B if access network protocol in E-interface is BSSAP and the RAB ID of the bearer associated with ongoing call(s) has value other than 1.</p> <p>This situation arises when the user has an ongoing multicall or the last ongoing call has belonged to a multicall configuration in UMTS and inter MSC handover to GSM is performed. In multicall configuration calls using dedicated radio bearers have different Stream Identifier values, i.e. the first established call has SI=1, second call SI=2, and so on. Respectively radio access bearers associated with the calls have identities as RAB ID=1, RAB ID=2, and so on. In GSM to UMTS handover the RAB ID of the established bearer has to have same value as the stream identifier of the call to which handover is performed.</p> <p>3GPP 24.008 states following:</p> <p>10.5.4.28 Stream Identifier</p> <p>The purpose of the stream identifier (SI) information element is to associate a particular call with a Radio Access Bearer (RAB), and to identify whether a new traffic channel shall be assigned within the interface controlled by these signalling procedures. The SI value indicated in the CC protocol shall be sent in the RAB setup message. And mobile station is informed the relationship between the call and the RAB.</p>
Summary of change:	⌘ RAB ID is added to MAP Prepare Handover message as an optional parameter.
Consequences if	⌘ If the MSC-B does not know what RAB ID value has to be used in RANAP

not approved: Relocation Request message the handover to UMTS fails if the value is not the same as the value of Stream Identifier at call control level in MSC-A and UE.

Clauses affected:	⌘	7.6.2, 8.4.1, 17.7.1		
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘	
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Other comments:	⌘			

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7.6.2.57 RAB ID

This parameter indicates the radio access bearer identifier as defined in 3G TS 25.413. This parameter is used to relate the radio resources with the radio access bearers.

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

8.4.1 MAP_PREPARE_HANOVER service

8.4.1.1 Definition

This service is used between MSC-A and MSC-B (E-interface) when a call is to be handed over or relocated from MSC-A to MSC-B.

The MAP_PREPARE_HANOVER service is a confirmed service using the primitives from table 8.4/1.

8.4.1.2 Service primitives

Table 8.4/1: MAP_PREPARE_HANOVER

Parameter name	Request	Indication	Response	Confirm
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IMSI	C	C(=)		
Integrity Protection Information	C	C(=)		
Encryption Information	C	C(=)		
Radio Resource Information	C	C(=)		
AN-APDU	C	C(=)	C	C(=)
Allowed GSM Algorithms	C	C(=)		
Allowed UMTS Algorithms	C	C(=)		
Radio Resource List	C	C(=)		
<u>RAB ID</u>	<u>C</u>	<u>C(=)</u>		
Handover Number			C	C(=)
Relocation Number List			C	C(=)
Multicall Bearer Information			C	C(=)
Multiple Bearer Requested	C	C(=)		
Multiple Bearer Not Supported			C	C(=)
Selected UMTS Algorithms			C	C(=)
Chosen Radio Resource Information			C	C(=)
User error			C	C(=)
Provider error				O

8.4.1.3 Parameter use

Invoke Id

For definition of this parameter see subclause 7.6.1.

Target Cell Id

For definition of this parameter see subclause 7.6.2. This parameter is only included if the service is not in an ongoing transaction. This parameter shall also be excluded if the service is a part of the Inter-MSC SRNS Relocation procedure or the inter-system handover GSM to UMTS procedure described in 3G TS 23.009.

Target RNC Id

For definition of this parameter see subclause 7.6.2. This parameter shall be included if the service is a part of the Inter-MSC SRNS Relocation procedure or the inter-system handover GSM to UMTS procedure described in 3G TS 23.009.

HO-Number Not Required

For definition of this parameter see subclause 7.6.6.

IMSI

For definition of this parameter see subclause 7.6.2. This UMTS parameter shall be included if:

- it is available and
- if the access network protocol is BSSAP and
- there is an indication that the MS also supports UMTS.

Integrity Protection Information

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if available and if the access network protocol is BSSAP.

Encryption Information

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if available and if the access network protocol is BSSAP.

Radio Resource Information

For definition of this parameter see subclause 7.6.6. This GSM parameter shall be included if the access network protocol is RANAP and there is an indication that the UE also supports GSM. If the parameter Radio Resource List is sent, the parameter Radio Resource Information shall not be sent.

AN-APDU

For definition of this parameter see subclause 7.6.9.

Allowed GSM Algorithms

For definition of this parameter see subclause 7.6.6. This parameter includes allowed GSM algorithms. This GSM parameter shall be included if:

- the service is a part of the Inter-MSC SRNS Relocation procedure and
- Ciphering or Security Mode Setting procedure has been performed.and
- there is an indication that the MS also supports UMTS.

Allowed UMTS Algorithms

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if all of the following conditions apply:

- access network protocol is BSSAP and
- Integrity Protection Information and Encryption Information are not available and
- Ciphering or Security Mode Setting procedure has been performed.

Radio Resource List

For definition of this parameter see subclause 7.6.6. This parameter shall be included if the access network protocol is RANAP and there is an indication that the UE also supports GSM. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B. If the parameter Radio Resource Information is sent, the parameter Radio Resource List shall not be sent.

RAB ID

For definition of this parameter see subclause 7.6.2. This parameter shall be included when MSC-A supports multiple bearers and access network protocol is BSSAP and the RAB ID has a value other than 1.

Handover Number

For definition of this parameter see subclause 7.6.2. This parameter shall be returned at handover, unless the parameter HO-NumberNotRequired is sent. If the parameter Handover Number is returned, the parameter Relocation Number List shall not be returned.

Relocation Number List

For definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation, unless the parameter HO-NumberNotRequired is sent. If the parameter Relocation Number List is returned, the parameter Handover Number shall not be returned.

Multicall Bearer Information

For a definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation in the case that MSC-B supports multiple bearers.

Multiple Bearer Requested

For a definition of this parameter see subclause 7.6.2. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B.

Multiple Bearer Not Supported

For a definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation when MSC-B receives Multiple Bearer Requested parameter and MSC-B does not support multiple bearers.

Selected UMTS Algorithms

For definition of this parameter see subclause 7.6.6. This parameters includes the UMTS integrity and optionally encryption algorithms selected by RNC under the control of MSC-B. This UMTS parameter shall be included if the service is a part of the inter MSC inter system handover from GSM to UMTS.

Chosen Radio Resource Information

For definition of this parameter see subclause 7.6.6. This parameter shall be returned at relocation if the encapsulated PDU is RANAP RAB Assignment Response and MS is in GSM access.

User error

For definition of this parameter see subclause 7.6.1. The following errors defined in subclause 7.6.1 may be used, depending on the nature of the fault:

- No handover number available.
- Target cell outside group call area;
- System failure.
- Unexpected data value.
- Data Missing.

Provider error

See definition of provider errors in subclause 7.6.1.

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

17.7 MAP constants and data types

17.7.1 Mobile Service data types

....

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ho-NumberNotRequired	NULL	OPTIONAL,
targetRNCId	[1] RNCId	OPTIONAL,
an-APDU	[2] AccessNetworkSignalInfo	OPTIONAL,
multipleBearerRequested	[3] NULL	OPTIONAL,
imsi	[4] IMSI	OPTIONAL,
integrityProtectionInfo	[5] IntegrityProtectionInformation	OPTIONAL,
encryptionInfo	[6] EncryptionInformation	OPTIONAL,
radioResourceInformation	[7] RadioResourceInformation	OPTIONAL,
allowedGSM-Algorithms	[9] AllowedGSM-Algorithms	OPTIONAL,
allowedUMTS-Algorithms	[10] AllowedUMTS-Algorithms	OPTIONAL,
radioResourceList	[11] RadioResourceList	OPTIONAL,
extensionContainer	[8] ExtensionContainer	OPTIONAL,
..._		
rab-Id	[12] RAB-Id	OPTIONAL }