3GPP TSG CN Plenary Meeting #26 **NP-040528**
8th – 10th December 2004 Athens, Greece.

Source: TSG CN WG4

Title: Corrections on TEI5

Agenda item: 8.8

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level N4-040	Phase	Subject	Cat	Ver_C
29.232	079		1333	Rel-5	IP transport package Duplicate property ID in ASN.1 encoding	F	5.8.0
23.153	081		1401	Rel-5	Correction of the inter-MSC handover during TrFO	F	5.8.0

3GPP TSG-CN WG4 Meeting #25
Seoul, Korea, 15th to 19th November 2004

Tdoc ⌘N4-041333

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **079** ⌘ **rev** **-** ⌘ Current version: **5.8.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	IP transport package Duplicate property ID in ASN.1 encoding
Source:	⌘	CN4
Work item code:	⌘	TEI5
Date:	⌘	05/11/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change:	⌘	In the IP transport package for ASN.1 encoding the property IDs for “IP V4 transport address” and “UDP port” are the same (0x0001). This is an ESSENTIAL CORRECTION.
Summary of change:	⌘	The ASN.1 encoding of the property ID of “UDP port” should be changed to 0x0003.
Consequences if not approved:	⌘	For ASN.1 encoding impossible to separate 2 IP transport package properties.

Clauses affected:	⌘	15.1.8

Other specs affected: ⌘	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

⌘

Other comments: ⌘

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

15.1.8 IP transport package

PackageID: threegiptra (0x0083)

Version: 1

Extends: None

This package contains the information needed to be able to support IP transport from RAN to the media gateway.

15.1.8.1 Properties

IP transport address:

PropertyID: ipv4trans (0x0001).

Description: IP V4 transport address.

Type: 32 bits IPv4Address.

Possible values:

- Specified as Transport Layer Address in 3GPP TS 25.413 [20].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

PropertyID: ipv6trans (0x0002).

Description: IP V6 transport address.

Type: 128 bits Ipv6Address .

Possible values:

- Specified as Transport Layer Address in 3GPP TS 25.413 [20].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

UDP port:

PropertyID: UDport (0x0001~~3~~).

Description: UDP port.

Type: Unsigned integer.

Possible values: 0…65535.

- Specified as Iu transport Association in 3GPP TS 25.413 [20].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

15.1.8.2 Events

None.

3GPP TSG-CN WG4 Meeting #25 ***N4-041401***

Seoul, KOREA. 15th to 19th November 2004.

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.153** **CR** **081** ⌘ **rev** **-** ⌘ Current version: **5.8.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Correction of the inter-MSC handover during TrFO
Source:	⌘	CN4
Work item code:	⌘	TEI5
Date:	⌘	5/11/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
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Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Correction of an error that was contained in CR 069 rev4 (N4-040304): - incomplete sentence in subclause 6.11.1, and therefore incomplete description of the scenario of inter-system handover to UTRAN/GERAN Iu-mode. Additionally: - wrong format of the headline of subclause 6.11.2.2
Summary of change:	⌘	The missing description is provided by a reference to subclause 6.2.2.
Consequences if not approved:	⌘	Incomplete specification of the scenario of inter-system handover to UTRAN/GERAN Iu-mode.

Clauses affected:	⌘	6.11.1, 6.11.2.2

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

********** SECTION PROVIDED FOR INFORMATION **********

6.2.2 Inter-MSC SRNS Relocation

The following figures are describing inter-MSC SRNS relocation. The figures are a combination of figure 6.2/1 for intra-MSC SRNS relocation and of figures 8.4/1 and 8.4/2 in 3GPP TS 23.205 [8].

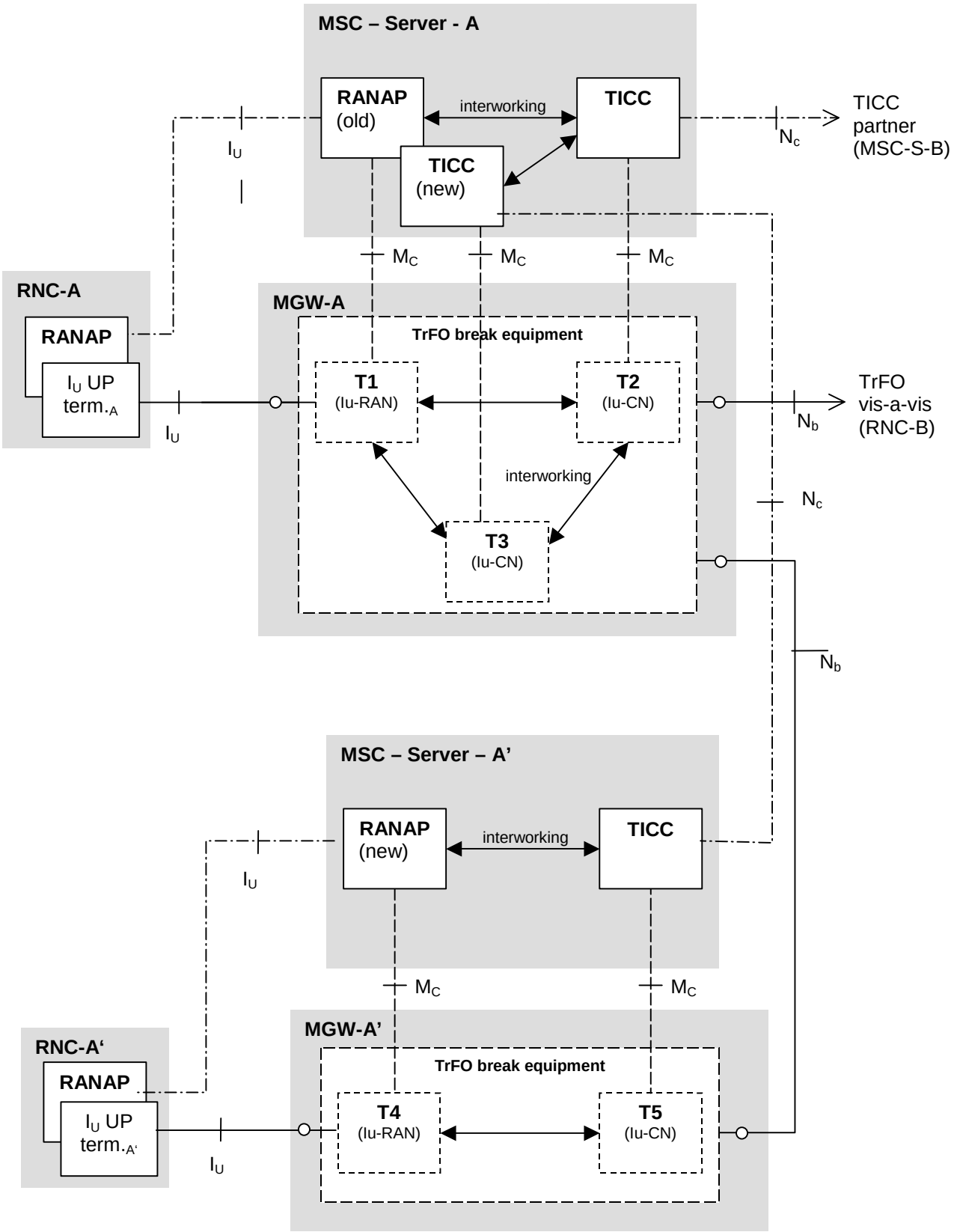


Figure 6.2/4: Configuration during inter-MSC SRNS Relocation

Figure 6.2/4 shows the configuration during inter-MSC SRNS relocation. After setting up the new I_U interface (towards RNC-A') until releasing the old one, the original TrFO relation (A⇔B) and the target TrFO relation (A'⇔B) exist in parallel. Within the respective contexts (TBE) interworking between T4and T5 at MGW-A' and T1, T2 and T3 at MGW-A are necessary:

T3 (MGW-A) shall perform initialisation towards MGW-A'.

T4 (MGW-A') will receive initialisation from RNC-A'.

T5 (MGW-A') shall hide initialisation performed on $I_{U,A'}$ from MGW-A and RNC-B.

If the option to remove the TBE was applied in MGW-A after call setup, the whole context (TBE) needs to be inserted prior to performing inter-MSC SRNS Relocation. Initialisation data need to be available within MGW-A. After Relocation, the context (TBE) may be removed again.

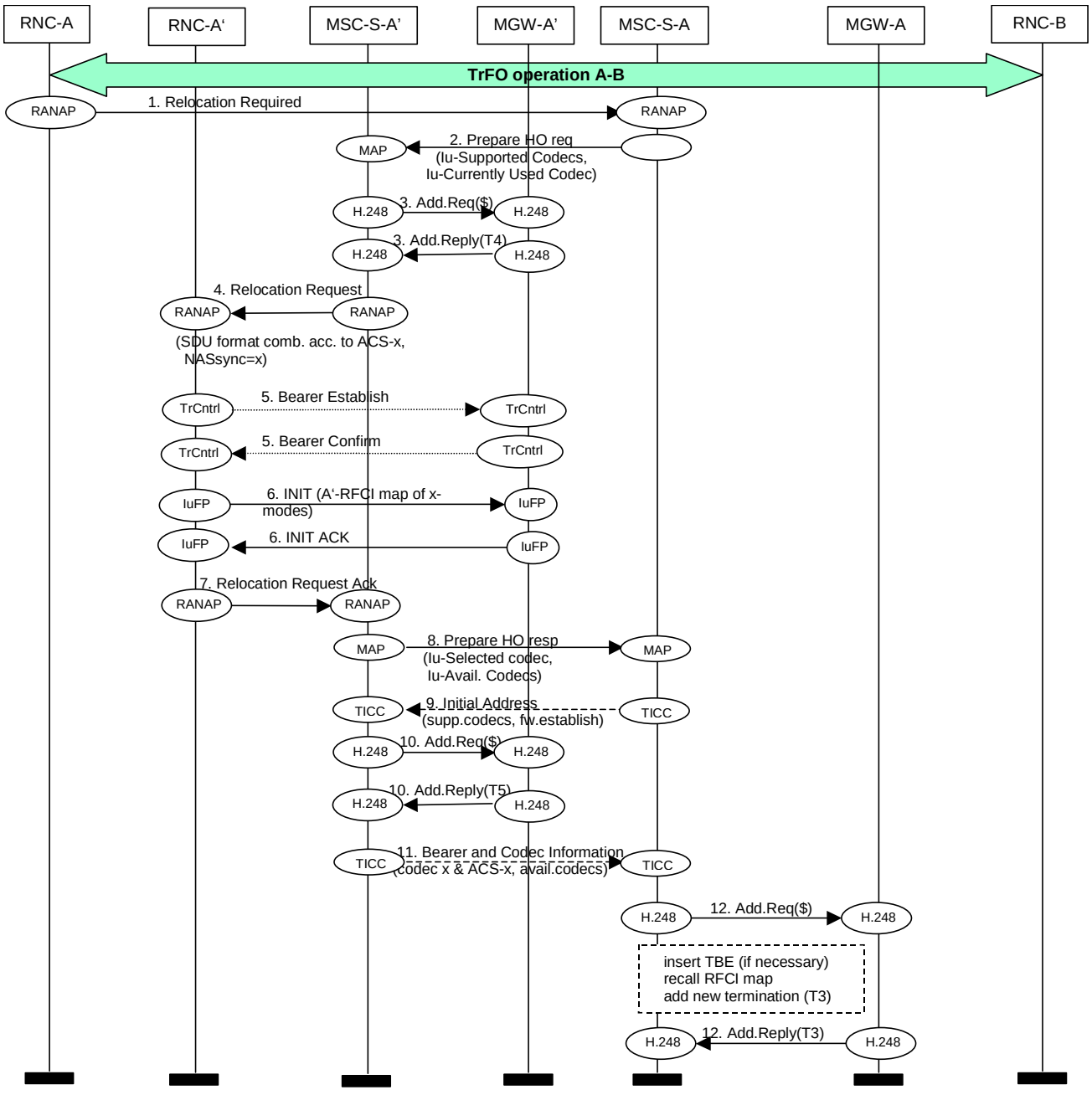
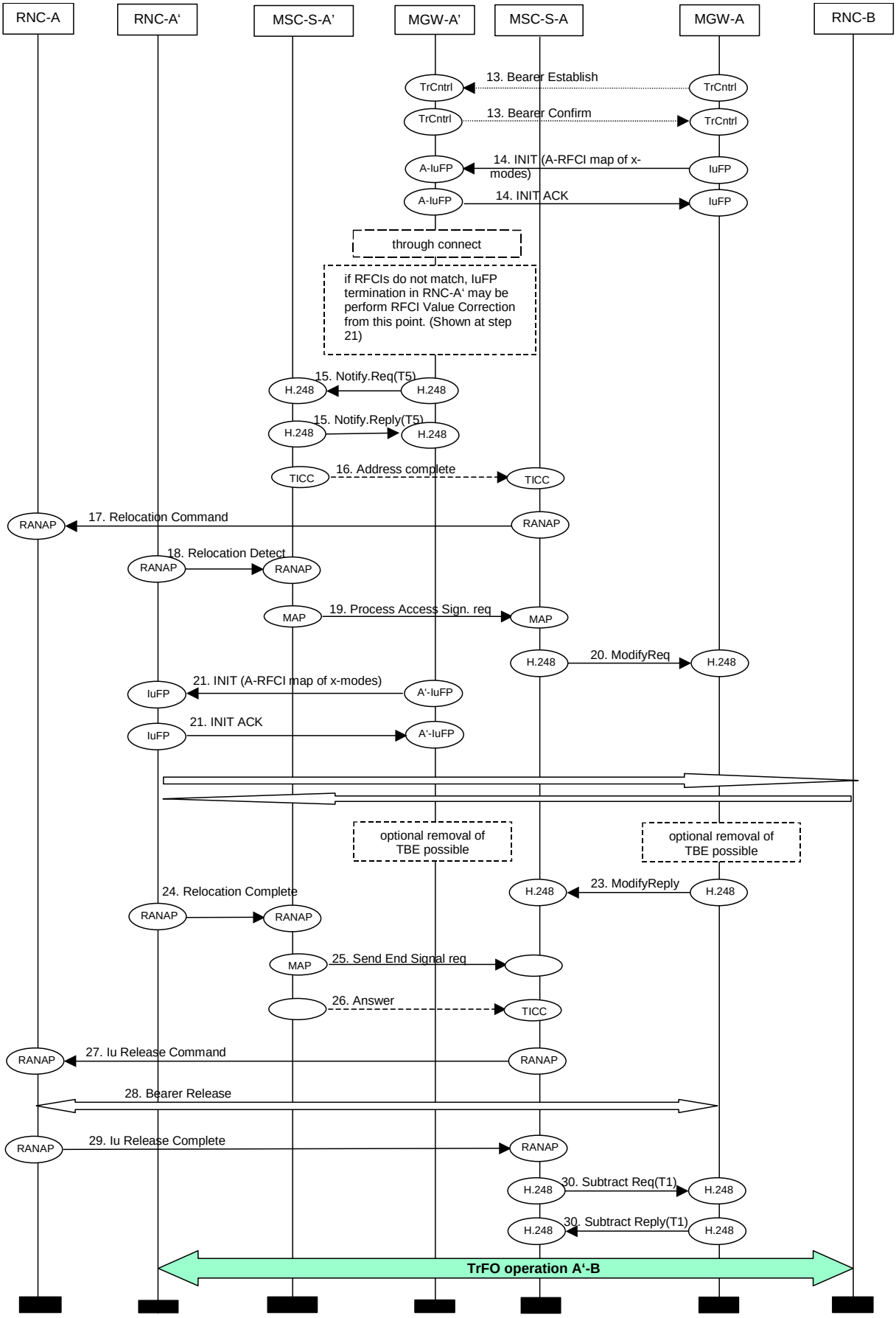


Figure 6.2/5: Inter-MSC SRNS Relocation and TrFO. Flow chart part 1



Note: There can be interim network transit nodes between MSC-A and MSC-A'

Figure 6.2/6: Inter-MSC SRNS Relocation and TrFO. Flow chart part 2

RAB Assignment on the new Iu leg:

A RAN side termination with IuFP property (T4 (MSC-A')) has to be seized (step 3.) before sending Relocation Request (4.), that contains all the RAB parameters already applied on the Iu leg towards RNC-A.

MAP signalling for handover and codec negotiation

The MSC-A server shall include an Iu-Supported Codecs List and an Iu-Currently Used Codec in the MAP Prepare Handover request. When selecting the order of priority for the codecs within the Iu-Supported Codecs List, MSC-A shall take the Available Codecs List (BICC) negotiated with the far end party into account.

MSC-A' shall include in the MAP Prepare Handover response the Iu-Selected codec and the Iu-Available Codecs List, i.e. the list of codecs available at the Iu interface in MSC-A' after handover.

Network side bearer establishment and codec handling

The handling of the bearer establishment between MSC-A and MSC-A' shall be performed as for a normal call with OoBTC. For a speech bearer, the MSC-A server shall perform a call set-up with codec negotiation towards the MSC-A' server, using a Supported Codec List (BICC) containing

a) optionally, the Selected codec (BICC), previously selected for the leg towards the far end party, as the preferred codec;

NOTE: this codec is included to cover the case where the codec negotiation is terminated prior to reaching the target MSC. Then the best codec to be selected is the one also used towards the far end party – in order to avoid the need for a codec modification or additional transcoding in MSC-A If MSC-A knows by means of configuration information that all nodes of the network support TrFO/TFO interworking and TFO, including codec mismatch resolution, this codec may be omitted from the list.

b) the Iu-Selected codec (MAP) (negotiated with MSC-A' during the MAP E-interface signalling), if it is not already included according to list item a;

c) the default PCM codec; and

d) optionally, further codecs from the Iu-Supported Codecs List (MAP) that are applicable to the target radio access.

For UDI/RDI multimedia calls with fallback and service change according to 3GPP TS 23.172 [17], the Supported Codecs List (BICC) shall contain the multimedia dummy codec and the Available Codecs List (BICC) can contain this codec (see [17], subclause 4.3.7). If the MSC-A server wants to establish a bearer for the multimedia dummy codec, it shall include this codec as the preferred codec.

If MSC-A' receives a Supported Codec List (BICC) with the IAM message, MSC-A' shall select from this list

- the multimedia dummy codec, if it is the preferred codec;
- the Iu-Selected codec, if it is contained in the list; or
- the default PCM codec.

If MSC-A' selects the default PCM codec, or if MSC-A' receives an IAM message without a Supported Codec List (BICC), MSC-A' shall insert a transcoder in MGW-A'.

MSC-A/MSC-A' shall request seizure of network side bearer terminations with IuFP properties (see steps 10. and 12.). MSC-A' shall send the Address Complete message only after MGW-A' has indicated the successful initialisation of the IuFP (step 15.).

Additionally, when the bearer between MGW-A and MGW-A' was established successfully, MSC-A may initiate a codec modification or mid-call codec negotiation as described in Annex A.

UP initialisation

RNC-A' shall accept the requested set of codec modes and is not allowed to puncture out any negotiated mode. The INIT frames shall be according to the RAB parameters received.

MSC-A' shall request seizure of network side bearer terminations with IuFP properties.

At reception of an INIT frame from the new RNC, the termination at MGW-A' shall not perform forwarding of the IuFP initialisation. When the NbFP has been initialised from MGW-A towards MGW-A', the MGW-A' shall check whether the received RFCI allocations match the stored RFCI allocation. If it does not match, the MGW-A' may re-initialise the IuFP towards RNC-A' at this point in time.

Removal of TrFO Break Equipment (TBE)

If the MGW-A supports the removal of TBEs, it shall insert the TBE before seizing the additional termination. It may again remove the TBE after through-connection of the new termination and the termination to the far end party.

If the MGW-A' supports the removal of TBEs, it may remove the TBE after performing RFCI matching and through-connection of the terminations.

********** FIRST MODIFIED SECTION **********

6.11 Inter-MSC Handover during TrFO

6.11.1 Inter-MSC Handover

In order to enable the use of Tandem free and Transcoder free operation after inter-MSC handover, the procedures specified in 3GPP TS 23.205 [8] and 3GPP TS 23.009 [11] for "Inter-MSC Handover" shall be followed. For the handling of the codec lists and selected codecs the following rules apply:

The Prepare Handover request message shall include the Iu-Supported Codecs List (MAP).

If the serving radio access is UTRAN or GERAN Iu-mode, the Prepare Handover request message shall contain the Iu-Currently Used Codec (MAP). Otherwise, if the serving radio access is A/Gb mode, the currently used codec is indicated by the Speech Version (Chosen) in the BSSMAP Handover Request message included in the Prepare Handover request message.

If the target radio access is UTRAN or GERAN Iu-mode, the Prepare Handover response message shall contain the Iu-Selected Codec (MAP) and the Iu-Available Codecs List (MAP). Otherwise, if the target radio access is A/Gb mode, the selected codec is indicated by the Speech Version (Chosen) in the BSSMAP Handover Request Ack message included in the Prepare Handover response message.

If the target radio access is UTRAN or GERAN Iu-mode, then ~~F~~for a speech bearer, the MSC-A server shall perform a call set-up with codec negotiation towards the MSC-A' server, using a Supported Codecs List (BICC) ~~containing~~ as specified in subclause 6.2.2. When MSC-A' receives a Supported Codecs List (BICC) with the IAM message, it shall follow the procedures specified in subclause 6.2.2.

If the target radio access is GERAN A/Gb mode, then for a speech bearer the anchor MSC shall perform a call set-up with codec negotiation towards the target MSC, using a Supported Codec List (BICC) containing:

a) optionally, the Selected codec (BICC), previously selected for the leg towards the far end party, as the preferred codec;

NOTE: this codec is included to cover the case where the codec negotiation is terminated prior to reaching the target MSC. Then the best codec to be selected is the one also used towards the far end party – in order to avoid the need for a codec modification or additional transcoding in MSC-A. If MSC-A knows by means of configuration information that all nodes of the network support TrFO/TFO interworking and TFO, including codec mismatch resolution, this codec may be omitted from the list.

b) the GSM codec indicated by the serving MSC during the MAP E-interface signalling as Speech Version (Chosen), if it is not already included according to list item a;

c) the default PCM codec; and

d) optionally, further GSM codecs that are supported by its associated MGW.

For UDI/RDI multimedia calls with fallback and service change according to 3GPP TS 23.172 [17], the Supported Codecs List (BICC) shall contain the multimedia dummy codec and the Available Codecs List (BICC) can contain this codec (see [17], subclause 4.3.7). If the MSC-A server wants to establish a bearer for the multimedia dummy codec, it shall include this codec as the preferred codec.

If the target radio access is GERAN A/Gb mode and MSC-A' receives a Supported Codec List (BICC) with the IAM message, MSC-A' shall select from this list

- the multimedia dummy codec, if it is the preferred codec;
- the GSM codec corresponding to the Speech Version (Chosen), if it is contained in the list; or
- the default PCM codec.

6.11.2 Codec Modification/Mid-Call Codec Negotiation after Inter-MSC Handover

6.11.2.1 Codec Modification/Mid-Call Codec Negotiation Initiated by the Far End Side

If the serving radio access after inter-MSC handover is GERAN A/Gb mode, and the anchor MSC (MSC-S-A) receives a "Modification of Selected Codec" procedure or a "Mid-Call Codec Negotiation" procedure from the far end side the MAP signalling between the anchor MSC (MSC-S-A) and the serving MSC (MSC-S-A') shall be performed only, if the old or the new Selected Codec (BICC) is the multimedia dummy codec.

If both the old and the new Selected Codec (BICC) are speech codecs, the anchor MSC may terminate the codec modification or mid-call negotiation procedure, inserting a transcoder if required. Alternatively, the anchor MSC may forward the request to the serving MSC (MSC-S-A'), using the procedures as described in section 5.8.

NOTE: The anchor MSC may decide to forward the request to the serving MSC (MSC-S-A'), e.g. when it is possible to (re-)establish Tandem free and Transcoder free operation end-to-end from the far end side up to the serving TRAU.

If either the old or the new Selected Codec (BICC) is the multimedia dummy codec, i.e. the far end side requests a service change between speech and multimedia, and the Available Codecs List (BICC) previously negotiated between the anchor MSC and the serving MSC (MSC-S-A') indicates that the service change is supported end-to-end, the anchor MSC shall forward the request to modify the radio access bearer to the serving MSC (MSC-S-A') and then perform a codec modification or mid-call negotiation for the Nb/Nc interface towards the serving MSC (MSC-S-A'), using the procedures as described in section 5.8. If the service change between speech and multimedia cannot be performed successfully, the anchor MSC shall reject the request for codec modification or mid-call negotiation towards the far end party.

6.11.2.2 TFO Codec Mismatch Resolution in the Serving MSC *[Editor's note: remove "underline" from headline]*

If the serving radio access after inter-MSC handover is GERAN A/Gb mode, and TrFO has been established between the anchor MSC and the serving MSC, the serving MSC may detect a TFO codec mismatch between the Selected Codec (BICC) used on the TrFO link and the GSM speech codec chosen by the serving BSC.

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