3GPP TSG CN Plenary Meeting #20 **NP-030222**
4th – 6th June 2003 Hämeenlinna, FINLAND.

Source: TSG CN WG4

Title: Corrections on OoBTC

Agenda item: 8.8

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
23.153	051	2	N4-030617	Rel-5	Inter-MSC SRNS relocation with TrFO	F	5.4.0

3GPP TSG CN WG4 Meeting #19 **N4-030617**
San Diego, CA, USA, 19th – 23rd May 2003

CR-Form-v7

CHANGE REQUEST

⌘ **23.153** **CR** **051** ⌘**rev** **2** ⌘ Current version: **5.4.0** ⌘

*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:	⌘	Inter-MSC SRNS relocation with TrFO
Source:	⌘	CN4
Work item code:	⌘	OoBTC
Date:	⌘	21/05/2003
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:

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

Reason for change:	⌘	The case of SRNS relocation with TRFO when the RNCs are connected to different MSC-Servers and MGWs and the anchor MSC-Server does not have a direct SCCP connection to the target RNC is not covered.
Summary of change:	⌘	The missing description is added.
Consequences if not approved:	⌘	It is not clear that the case Inter-MSC SRNS relocation is covered and how the selected codec received in MAP prepare HO Response has to be taken into account. A detailed description of the interworking between the different network entities is missing, possibly resulting in inter-operability problems.

Clauses affected:	⌘	6.2

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.

6.2 SRNS Relocation during TrFO

In order to maintain TrFO connection in SRNS Relocation, procedures specified in 3GPP TS 23.205 [8] and 3GPP TS 23.009 [11] for "Intra-MSC SRNS Relocation" or "Inter-MSC SRNS Relocation" shall be followed. Note that the "Intra-MSC SRNS Relocation" procedure can also be used for relocation between RNCs connected to different 3G MSCs (see 3GPP TS 23.009 [11], clause 1, "Flexible Iu interface for handover/relocation" option and "Intra domain connection of RAN nodes to multiple CN nodes" option).

6.2.1 Intra-MSC SRNS Relocation

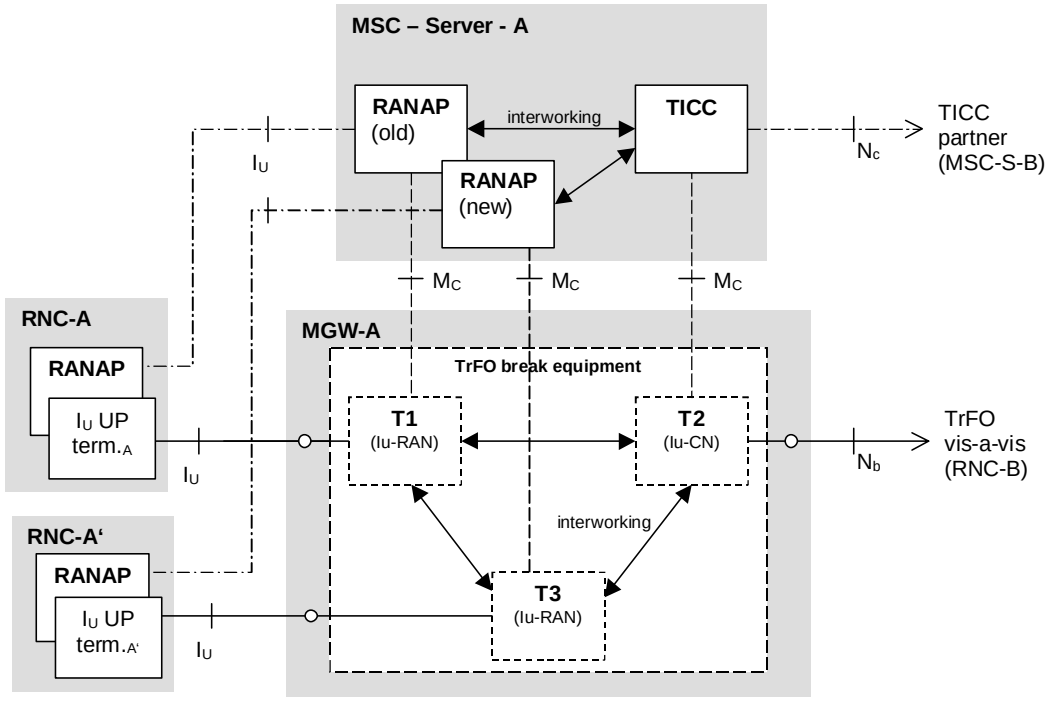


Figure 6.2/1: Configuration during intra-MSC SRNS Relocation

Figure 6.1/1 shows the configuration during intra-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 context (TBE) interworking between T1, T2 and T3 is necessary:

T3 will receive~~perform~~ initialisation from~~towards~~ RNC-A'.

T2 ~~will~~shall hide initialisation performed on $I_{U,A'}$ from RNC-B.

If the option to remove the TBE was applied after call setup, the whole context (TBE) needs to be inserted prior to performing SRNS Relocation. Initialisation data need to be available within MGW-A. After Relocation, the context (TBE) may be removed again, i.e. the MGW-A again acts as a pure AAL2 switch.

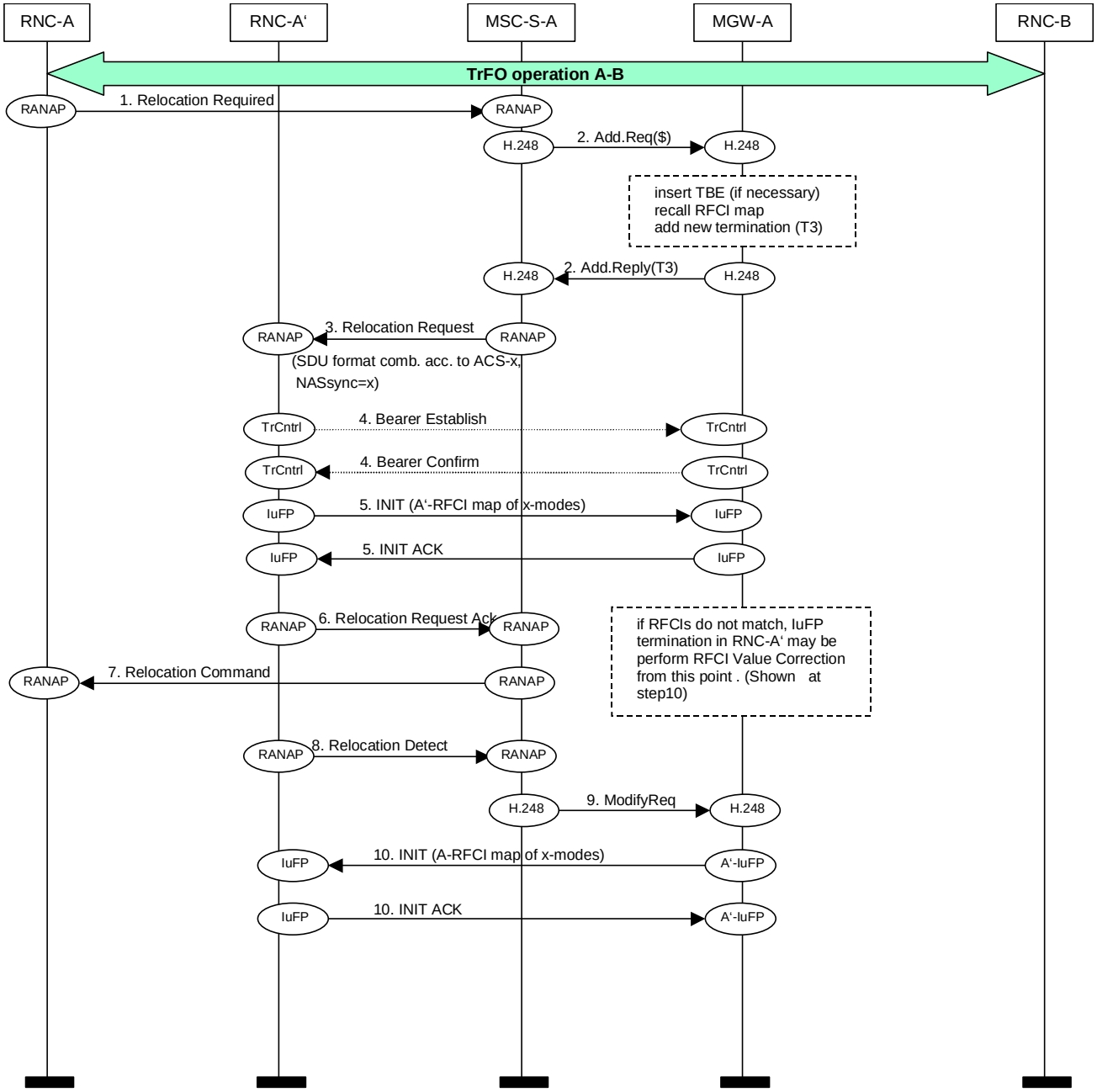


Figure 6.2/2: Intra-MSC SRNS Relocation and TrFO. Flow chart part 1

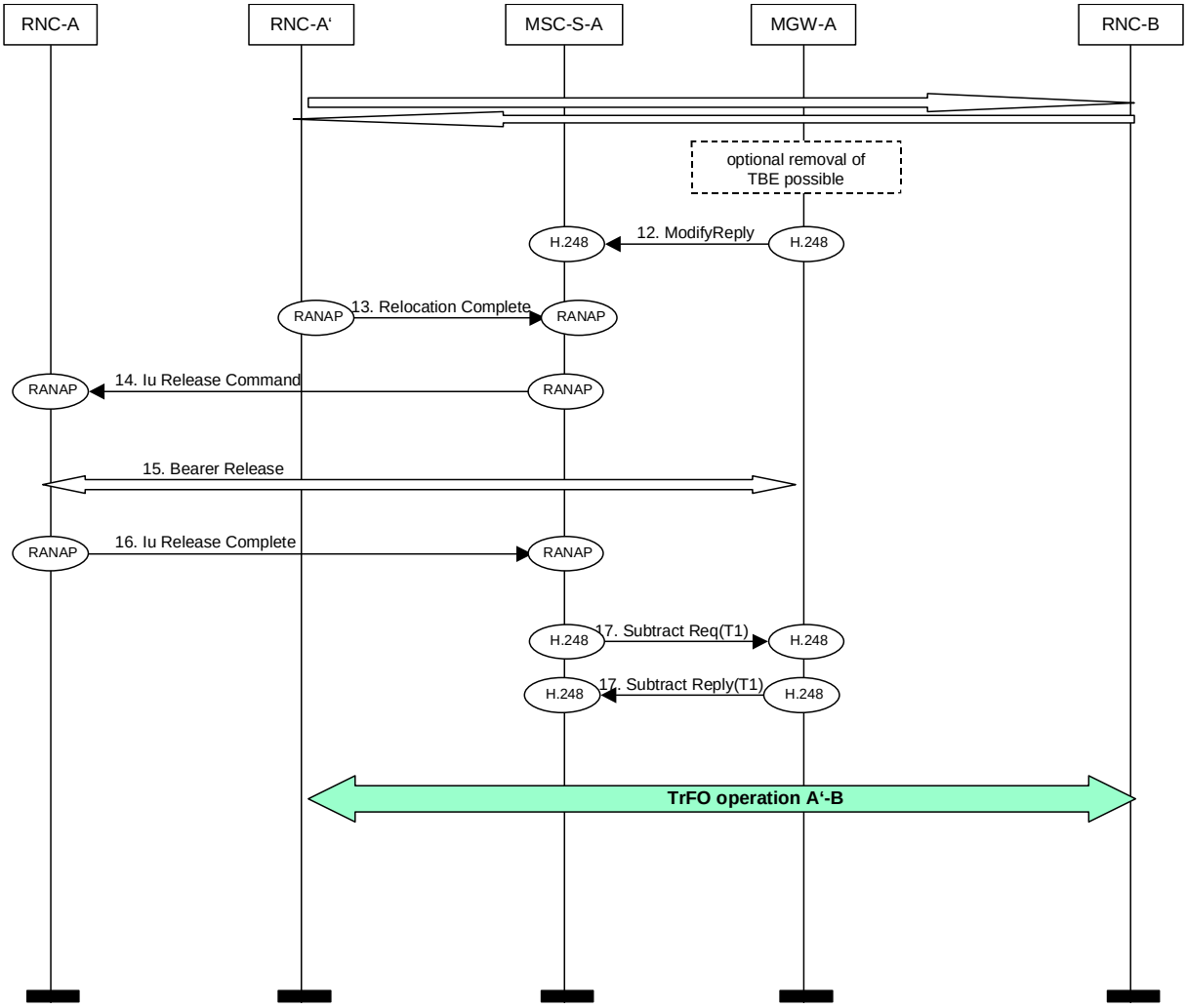


Figure 6.2/3: Intra-MSC SRNS Relocation and TrFO. Flow chart part 2

RAB Assignment on the new Iu leg:

A RAN side terminations with IuFP property (T3) has to be added to the already seized call context (step 2.) before sending Relocation Request (4.), that contains all the RAB parameters already applied on the Iu leg towards RNC-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.

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

Removal of TrFO Break Equipment (TBE)

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

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].

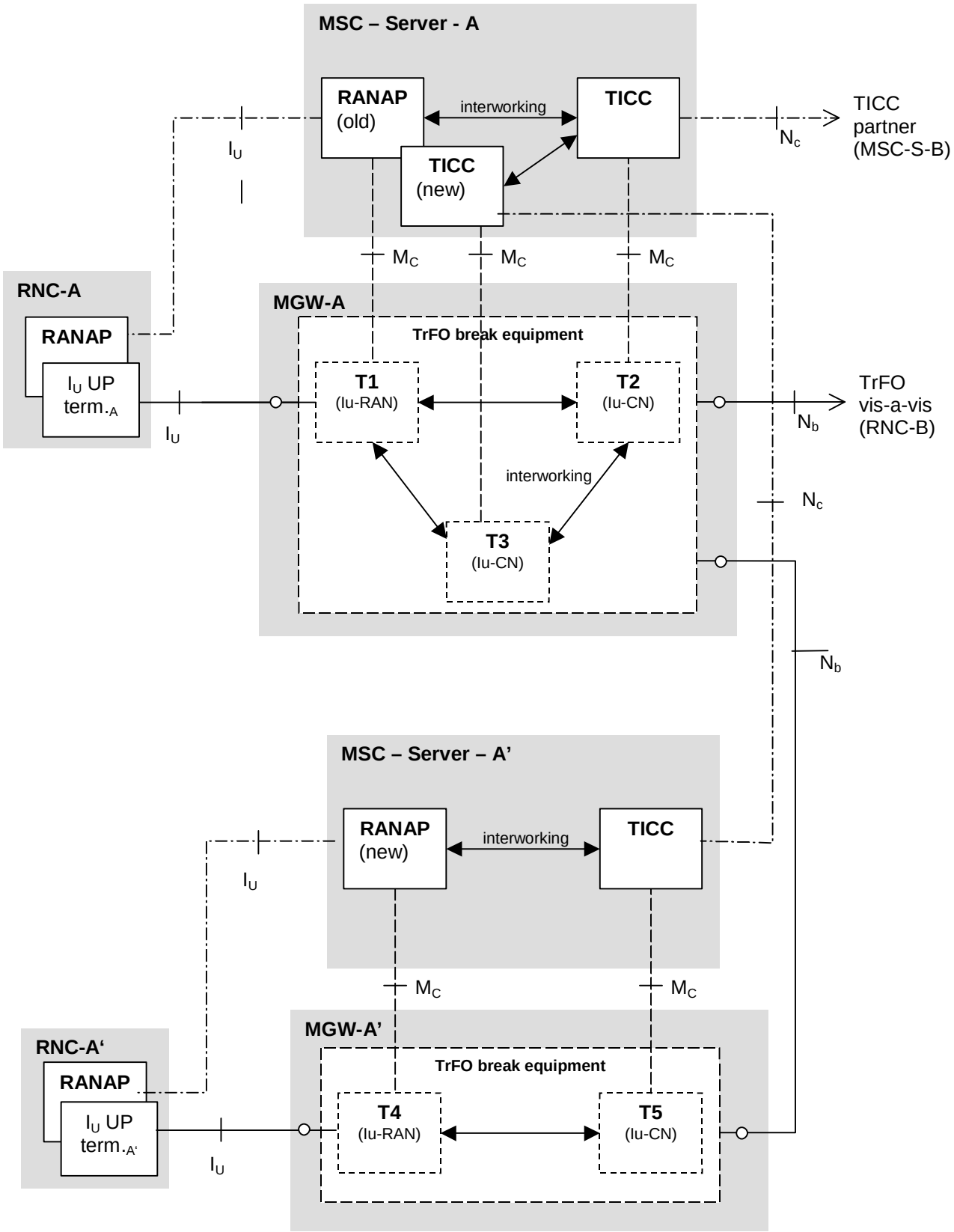


Figure 6.2/4: Configuration during inter-MSC SRNS Relocation

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.

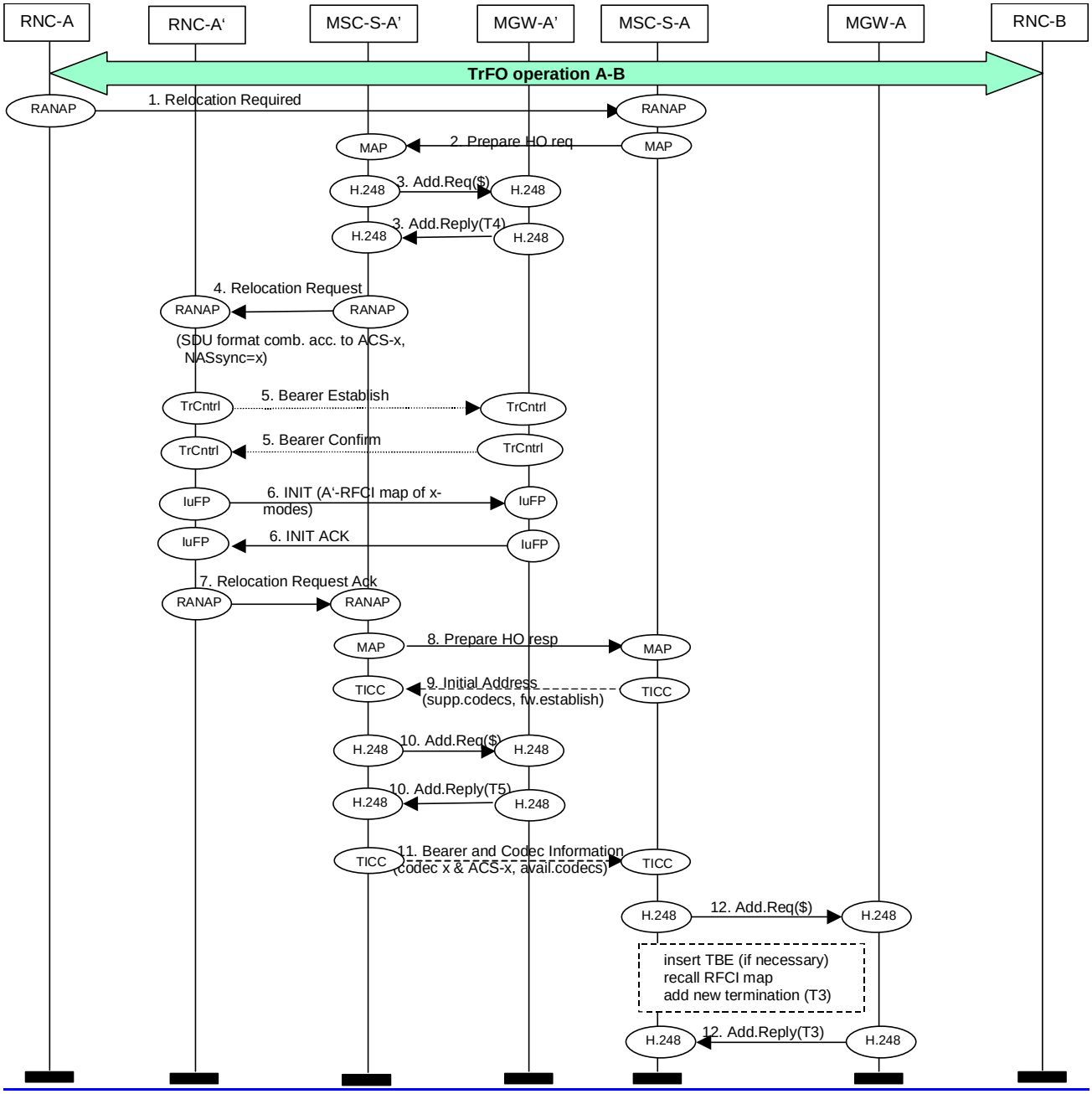
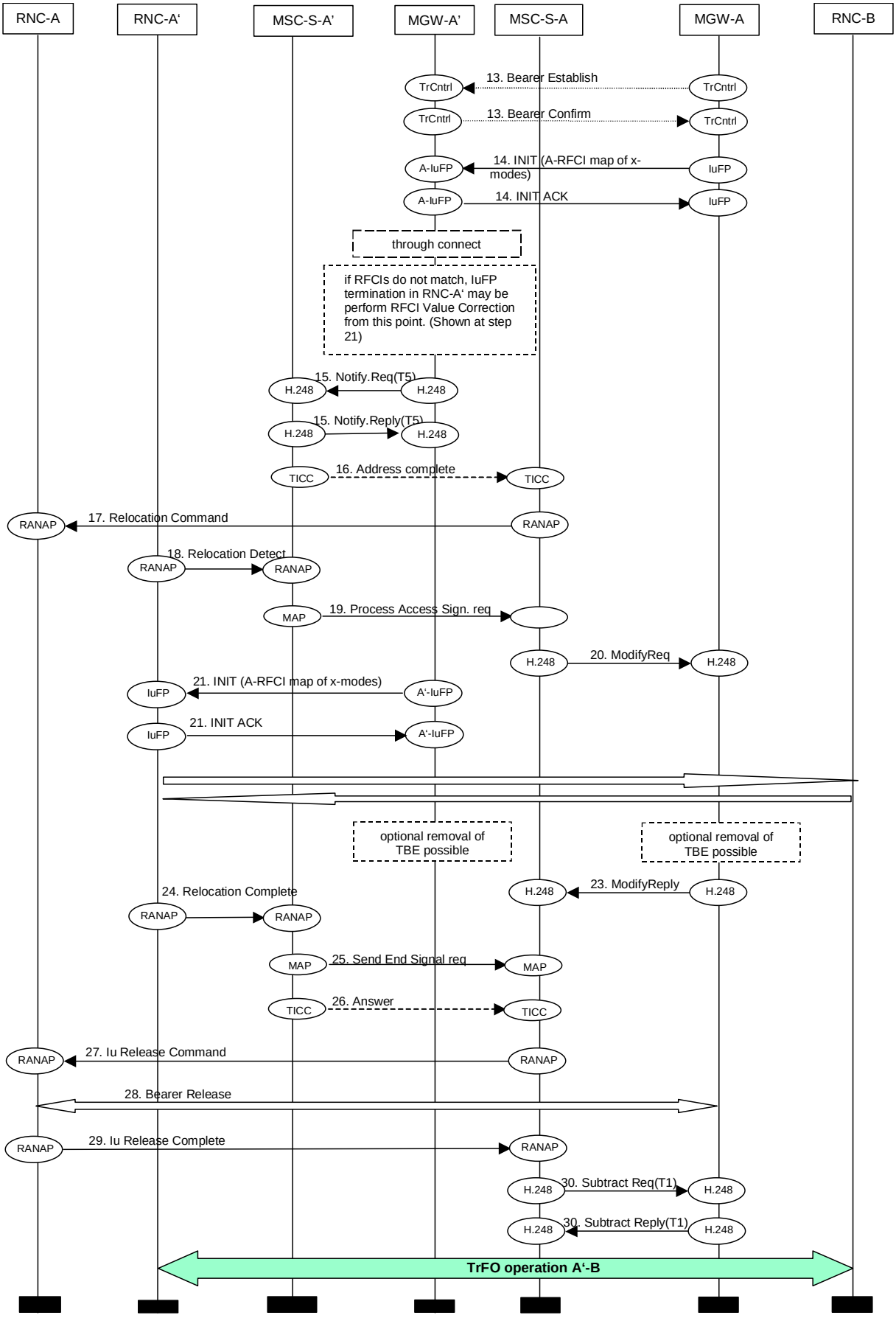


Figure 6.2/5: Inter-MSC SRNS Relocation and TrFO. Flow chart part 1



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.

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.The MSC-A server shall perform a call set-up with codec negotiation towards the MSC-A' server, using a Supported Codec List containing

- the currently used codec as the preferred codec;
- the selected codec (negotiated with MSC-A' during the MAP E-interface signalling), if it is different from the currently used codec; and
- the default PCM codec.

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

- the 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 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.).

Additonally, when the bearer between MGW-A and MGW-A' was established successfully, if the selected codec is different from the currently used codec, MSC-A may initiate a modify codec procedure on the leg towards the far end party.

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.

6.2.3 Mid-Call Codec Modification/Codec Negotiation after Inter-MSC Relocation

This procedure is for further study.