Agenda Item   : 6.2

Source   : **NTT DoCoMo**

Title   : **Study Item [Iu/4]**
           "The Triggering of SRNS relocation from the target RNS"(DRAFT)

Document for   : **Status Report**

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1. ABSTRACT

This document is a report of the discussion made on the reflector on "Study Item Iu/4: Which node triggers SRNS relocation?" There has been two ideas that Serving RNS should be responsible for making such decision or Target RNS should be responsible.

2. AGREEMENTS and PROPOSALS

Both Fabio LONGONI from Nokia as a contact person and Nobutaka ISHIKAWA from NTT DoCoMo as a responsible person of this study item have come to a conclusion that SRNS is the most appropriate node to trigger the SRNS relocation as opposed to the name of this study item.

This document proposes that SRNS should be the node that has the information and right to make decision of SRNS relocation procedure.

3. Reasoning

We have an assumption that U-Plane CCH on Iur may be provided as an optional functionality. (This discussion refers to study item ARC/1). When U-Plane CCH on Iur is provided, there is a possibility that SRNS relocation may not be executed immediately during inter-RNS Cell/URA update procedure since U-Plane Data stream can go from UE to SRNC via DRNC after the update. On the other hand, if there is no U-Plane CCH on Iur, immediate SRNS relocation during inter-RNS Cell/URA update procedure is essential since there is no U-Plane transport between UE and SRNC.

We assume that SRNC always has an information whether U-Plane CCH on Iur can be provided or not. In U-Plane CCH-on-Iur supported RAN, an SRNC might decide to trigger SRNS relocation because the DRNS is a bit far away from the SRNS, while another SRNC might decide *not* to trigger SRNS relocation because U-Plane data stream is on the way.

Therefore, It is SRNC that should make the decision whether SRNS relocation should be taken place or not.

4. CONCLUSION

It is proposed that the following modifications should be made to the current "Merged Iu description V0.0.2".

9.2.2.1   Serving RNS relocation

[Editor's note: The RANAP procedures for Serving RNS Relocation have been included from Tdoc SMG2 UMTS-ARC 091/98 with the modifications as approved in ARC EG meeting #4.]

[Editor's note: The contents of this chapter must be restructured to show the elementary procedures over the Iu interface. Also, it need to be aligned with the corresponding procedures in ZZ.02.]

[Editor's note: It was decided to replace Figure 2 in ETSI document by the corresponding figure in TTC/ARIB document. However, the ETSI names for messages are being used when the messages are the same in ETSI and TTC/ARIB documents. The text is adjusted accordingly.

Study item 2: The need for Signalling channel setup and setup response messages *(used in TTC/ARIB document).*

Study item 3: The differencies in SRNS Relocation procedure between ETSI and TTC/ARIB.]

[Editor's note: The SRNS Relocation procedure, which has been shown below, is the case triggered by source RNS.

 Study item 4: SRNS Relocation procedure triggered by target RNS.]

Serving RNS relocation is a procedure in which the serving RNS functionality of a specific RRC connection is relocated from one RNS to another without changing the radio resources or even without interrupting the user data flow.

When the serving RNS makes an algorithmic decision to relocate the serving RNS functionality to an other RNS a RANAP message to indicate that a Relocation is required is sent to the Core Network which is having an active RANAP connection related to the UE in question. This RELOCATION REQUIRED message includes essentially the target RNS identifier and an UTRAN information field (transparent to the core network).

Upon reception of the RELOCATION REQUIRED message the core network element should check whether the relocation is possible to be performed (This check is FFS). In successful case it sends a RELOCATION REQUEST message to the target RNS. The RELOCATION REQUEST contains essentially the received UTRAN information field and bearer identifier of each bearer to be established to the new Iu interface.

When the target RNS has received RELOCATION REQUEST message and all active bearers are identified, it should send a RELOCATION PROCEEDING1, message to the CN. This message contains essentially the Binding ID for each Iu leg to be established between UTRAN and CN (FFS, study item 3).

Upon reception of RELOCATION PROCEEDING1 (FFS) the CN should setup Iu legs (and indicate corresponding binding ID to UTRAN). After completion of this, the CN should send a RELOCATION PROCCEDING2 message to the target RNS (FFS, study item 3).

Target RNS can, after having received RELOCATION PROCEEDING2 (FFS) from CN element, start to act as the serving RNS for the RRC connection in question. After completing this, the target RNS (i.e. the new Serving RNS) sends RELOCATION COMPLETE to CN elements. CN elements will then release all bearers towards the old source RNS.

An example of a corresponding message flow at Iu interface in a successful situation is presented in Figure 12Figure 2.
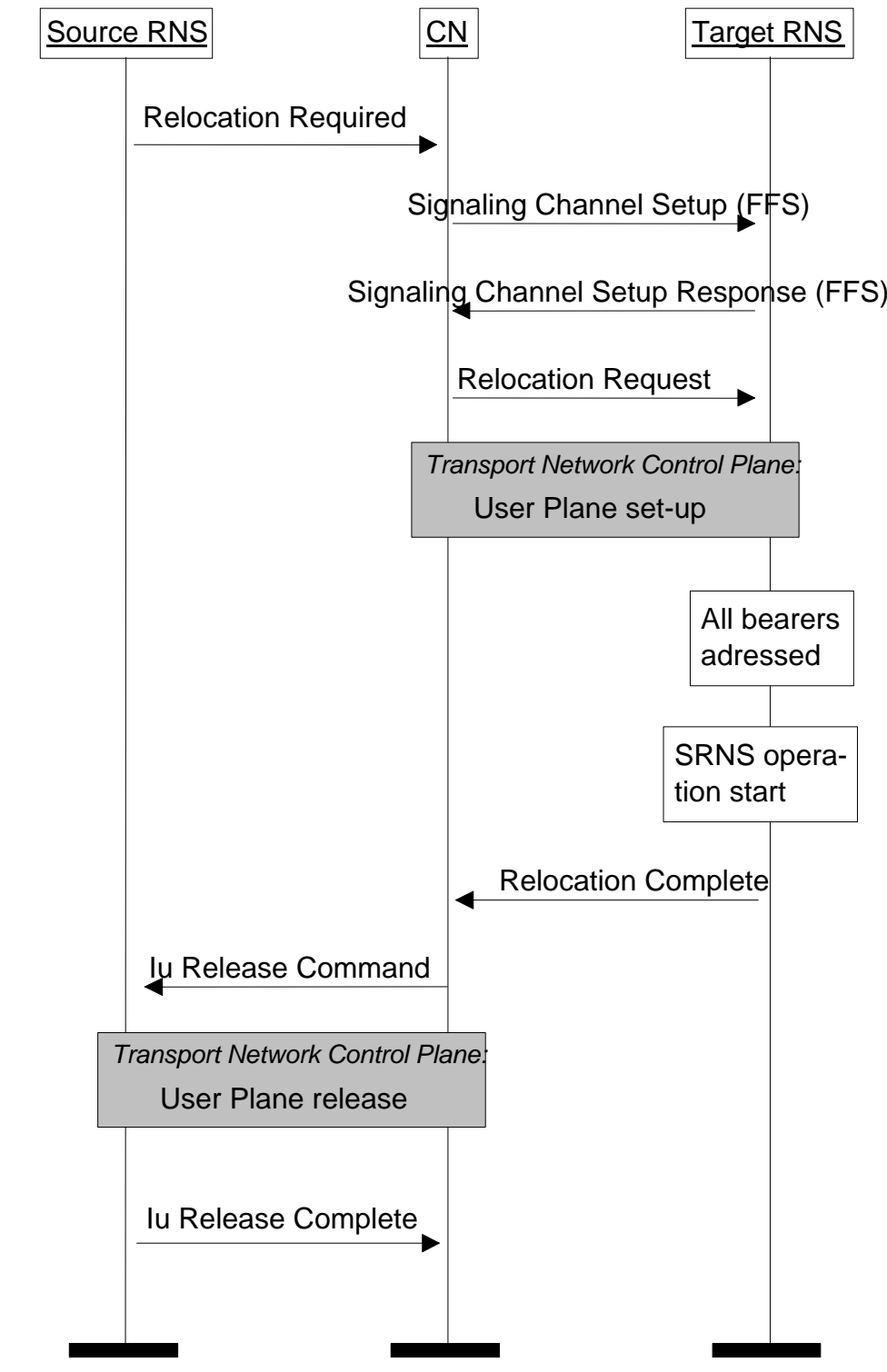
Figure 12. **An example RANAP protocol message flow at Iu interface related to relocation of the Serving RNS functionality. A successful case.**