

Agenda Item: 10.4

Source: Alcatel

Title: Transparent field in Relocation Required and Relocation Request

Document for: discussion

1. Introduction

In Tdoc R3 99455, it is proposed to include the “Source RNC to target RNC transparent field” IE only in one Relocation Required message in case the SRNS Relocation procedure involves 2 CN nodes. However, doing so does not allow the target RNC to correlate the 2nd Relocation Request message (not including the transparent IE) to the correct UE.

In the last RAN3 meeting (#5, Helsinki), when discussing Tdoc R3 99678, it was agreed that the transparent field is included as mandatory parameter in the Relocation Required and Relocation Request messages. No position was taken on whether the content of the field should be the same or different in both messages and the question on how to identify the UE in both messages was left open.

2. Discussion

Since the “Source RNC to target RNC transparent field” is really an IE, it is proposed the change its name to “Source RNC to target RNC transparent IE”.

In Tdoc R3 99678, it is proposed to use the d-RNTI as a UE identifier in the “Source RNC to target RNC transparent IE”. The comment was raised that, during inter-RNS hard handover procedures, there is no d-RNTI allocated by the target RNC. It was also understood that special attention needs to be paid to the GSM/GPRS to UMTS handover case for class A mobiles.

Note that the actual text proposal of Tdoc 678 still mentions the “c-RNTI”. During the discussion, this was changed to “d-RNTI” as a consequence of accepting Tdoc R3 99662.

Short analysis:

- SRNS Relocation: the target RNC needs the d-RNTI to correlate the 2 Relocation Request msgs to the radio resources that are already allocated for the UE.
- Inter RNS Hard Handover: the target RNC needs a reference for correlating both Relocation Request messages. This reference can be the Common Id or SRNC-id + s-RNTI. Since the target RNC already needs to take into account the Common Id, it is proposed to use the Common Id for this purpose. This implies that the Common Id must be known by the source SRNC.
- GSM/GPRS to UMTS handover for class A mobiles: the handover should be co-ordinated by the BSS. Moreover, the MS should not initiate a cell update towards the SGSN if it is engaged in a circuit call. It should also ignore the requests from the SGSN to perform a cell update. This implies that the target RNC will only receive 1 Relocation Request msg (related to the CS part of the call). After having completed the handover procedure for the CS part, the UE needs to trigger e.g. a cell update or a RA Update procedure towards the target SGSN. The target SGSN will then initiate a RAB Assignment Request procedure towards the target RNC.

Conclusion: in order to allow the target RNC to correlate both Relocation Request msgs, the d-RNTI is needed during SRNS relocation and the Common Id can be used during inter RNS Hard Handover.

Format of the “Source RNC to target RNC transparent IE”:

8	7	6	5	4	3	2	1	
Parameter Identifier								1
Length								(oct) 2
UE identifier								3-n
Common Id								x
Number of CN nodes								x
UE capability information for UTRAN								x

The UE identifier contains the d-RNTI (allocated by the target RNC). The UE identifier is needed during SRNS Relocation to correlate the requests from multiple CN nodes in the target RNC. In case of inter-RNS Hard Handover, the content of this field is not relevant.

The Common Id is needed for correlating Relocation Request msgs from different CN nodes and for page coordination in the target RNC.

The contents of UE capability information for UTRAN are FFS.

In case the Relocation procedure involves 2 CN nodes, the “UE capability information for UTRAN” field and the “other system specific information container” field only need to be included in 1 of the Relocation Required (and Relocation Request) messages.

3. Proposal

Following change is proposed for chapter 9.1.1 and 9.2.2 of reference [1]:

- Rename the Source RNC to target RNC transparent field to Source RNC to target RNC transparent IE
- The Source RNC to target RNC transparent IE in the Relocation Required and Relocation Request messages should be a mandatory IE with contents as described above.

4. References

[1] UTRAN Iu interface RANAP signalling, TS RAN 25.413