TSG-RAN Working Group 3 meeting #7

Sophia Antipolis, France, September 20-24, 1999

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Agenda Item: 16.2

Source: Alcatel

Title: Changes to RNSAP specification for the support of lossless relocation

Document for: Approval

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1   INTRODUCTION

This contribution is based on the contribution WHS-004 [4] that was presented at the joint SA2/RAN3 meeting at Sophia Antipolis.
It proposes changes to TS 25.423 RNSAP specification, for the support of lossless SRNS relocation.

2   PROPOSAL

2.1   Proposed text for UMTS 25.423 [2] section 8.1.3 "Relocation Commit"

It is proposed to modify [2] section 8.1.3 "Relocation Commit" as follows:

8.2.2   Relocation Commit

The RELOCATION COMMIT procedure is part of the Relocation procedure described in [1].
The source RNC sends the ~~SRNS~~ RELOCATION COMMIT message to the target RNC when it has received an indication that it can proceed with the ~~SRNC~~ Relocation procedure from all the involved CN logical nodes [1].
This message contains all parameters required to ensure the sequence integrity of the N-PDU for the radio access bearers that require lossless relocation in the PS domain and to be transmitted to the UE (i.e. to avoid loss and duplications of N-PDUs to/from the UE), and in particular:

- For each GTP tunnel associated with the UE (and requiring lossless relocation), the GTP sequence number (SND) of the next downlink N-PDU to be sent to the UE.

- For each GTP tunnel associated with the UE (and requiring lossless relocation), the GTP sequence number (SNU) of the next uplink N-PDU to be tunneled to the CN.

- The sequence number of the DL RLC-PDU which carried the last segment of the last N-PDU sent to the UE

- The sequence number of the UL RLC-PDU which carried the last segment of the last N-PDU tunneled to the CN.

At reception of the ~~SRNS~~ RELOCATION COMMIT message from the source RNC the target RNC executes the DL and UL switch for all RABs belonging to the UE at the earliest suitable time instance.

Prior to reception of the ~~SRNS~~ RELOCATION COMMIT message the target RNC has received a request to perform SRNS Relocation from all the involved CN logical nodes and responded to the CN logical nodes with a proceeding indication. The Iu transport bearers for each radio access bearer have also been established between the target RNC and all CN logical nodes.

Fig. 9-14: ~~SRNC~~ Relocation Commit procedure

2.2 It is proposed to modify [2] section 9.1.24 "RELOCATION COMMIT" as follows:

Following additions to the RELOCATION COMMIT message are proposed:

Information Element	Reference	Type
Message Type		M
Transaction ID		M
D-RNTI		O
RAB Contexts x n		**O**
RAB ID		M
DL GTP-PDU Sequence Number		M
UL GTP-PDU Sequence Number		M
DL RLC-PDU Sequence Number		M
UL RLC-PDU Sequence Number		M

2.3 It is proposed to add the following definitions of information elements to [2] section 9.2:

1. DL GTP-PDU Sequence Number

This IE indicates the sequence number of the next N-PDU to be sent to the UE.

2. UL GTP-PDU Sequence Number

This IE indicates the sequence number of the next N-PDU to be sent to the SGSN.

3. DL RLC-PDU Sequence Number

This IE indicates the sequence number of the DL RLC-PDU which carried the last segment of the last N-PDU sent to the UE.

4. UL RLC-PDU Sequence Number

This IE indicates the sequence number of the UL RLC-PDU which carried the last segment of the last N-PDU tunneled to the CN.

3 REFERENCES

[1] UMTS 25.931 UTRAN functions, Examples on signalling procedures
[2] UMTS 25.423 UTRAN Iur interface, RNSAP signalling
[3] UMTS 23.121 v3.0.0 Architectural Requirements for Release 99
[4] WHS 004 Sequence charts for lossless relocation, Alcatel