Agenda Item: 10.3

Source: Nokia

Title: **Relocation Failure RANAP procedure**

Document for: Decision

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1   INTRODUCTION & PROPOSAL

RANAP Relocation Signalling procedure is a signalling procedure that involves multiple instances of Iu interface and therefore the unsuccessful operatios and abnormal conditions of the elementary procedures belonging to this signalling procedure are more complicated than in other RANAP elementary procedures.

E.g. if both CN domains are active and RNC receives Relocation Failure message from SGSN, it should initiate Relocation Failure towards the MSC. MSC in turn should initiate Relocation Failure towards the Target RNC. In several cases the required error signal is transmitted via a different interface instance compared to the interface instance in which a unsuccessful or abnormal elementary procedure was executed.

In this contribution a new RANAP elementary procedure - Relocation Failure - is proposed. This elementary procedure, which can be initiated both from the UTRAN and CN side, is used in unsuccessful and abnormal realisations of elementary procedures related to the Relocation signalling procedure. In case of unsuccessful operation or abnormal condition in an elementary procedure related to the Relocation, the original procedure should be aborted and necessary Relocation Failure and other procedures (e.g. Iu releaese) shall be initiated.

This approach provides a straightforward and simple handling of unsuccessful operation and abnormal conditions for the complex Relocation signalling procedure.

It is proposed that the new procedure RELOCATION FAILURE described in chapter 2 of this contribution is added to the RANAP specification.

2   RANAP PROCEDURES

2.1.1.1 RELOCATION FAILURE

2.1.1.1.1 RNC originated RELOCATION FAILURE

In this procedure RNC sends a message RELOCATION FAILURE to CN.
Relocation failure includes the transaction ID for the corresponding RELOCATION procedure and the cause value for the failure. The transaction ID should be the same as was used in the corresponding RELOCATION PREPARATION or RELOCATION RESOURCE ALLOCATION procedures.
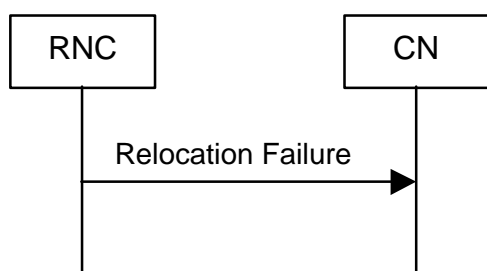

Figure 1. Relocation Failure procedure, RNC originated

RELOCATION FAILURE procedure shall be initialised if:
- Source RNC has decided to cancel the Relocation after having executed Relocation Required Indication procedure (Source RNC decides to cancel ongoing Relocation Preparation procedure)
- After having received Relocation Command the source RNC decides not to execute the Relocation (After having completed the the Relocation Preparation procedure, source RNC decides not to execute the Relocation)
- Target RNC is not able to execute the Relocation Resource Allocation procedure as requested by CN.
- Target RNC was not able to exchange the new UTRAN identifiers with the UE after having started the SRNC operation

2.1.1.1.2 CN originated RELOCATION FAILURE

In this procedure CN sends a message RELOCATION FAILURE to RNC.
Relocation failure message includes the transaction ID for the corresponding RELOCATION procedure and the cause value for the failure. The transaction ID should be the same as was used in the corresponding RELOCATION PREPARATION or RELOCATION RESOURCE ALLOCATION procedures.
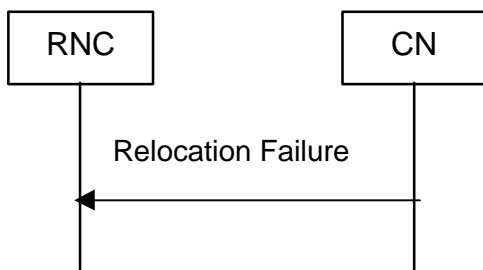

Figure 2. Relocation Failure procedure, CN originated

RELOCATION FAILURE procedure shall be initialised towards source RNC if:
- CN is not able to execute the Relocation as requested in Relocation Required Indication procedure (CN is not able to execute the Relocation Preparation as requested in Relocation Required procedure)
- CN can not execute Relocation Execution procedure due to CN originated reasons. (CN aborts the RELOCATION PREPARATION procedure due to CN originated reasons.)
- CN receives a RELOCATION FAILURE message from target RNC