

**Agenda Item:** 10.1

**Source:** Siemens/Italtel

**Title:** Comments to Study Item ARC/16 (Interaction between RANAP and RNSAP for SRNS Relocation)

**Document for:** Decision

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## 1. Introduction

This Tdoc is a late contribution to study item ARC/16 - Interaction between RANAP and RNSAP for Relocation of SRNS.

On the e-mail reflector two proposals have already been made, this paper presents a third alternative.

## 2. Discussion

### Option 1: (refer to [1])

Received messages (PAGING, DIRECT TRANSFER etc.) shall be inserted into RELOCATION COMMIT to be sent over Iur interface ([1]).

Comment: Sending messages, dedicated to a UE (PAGING, DIRECT TRANSFER) is a matter of RRC and therefore transparent to RNSAP. It is up to co-ordination within SRNC to relay contents of RRC-queue towards UE before sending RELOCATION COMMIT to DRNC.

Including Iu interface message contents on RNSAP level represents

As already mentioned within discussions, this principle doesn't apply for inter-system handover procedure.

### Option 2: (refer to [2])

If Source RNC is not able to complete the actions required due to reception a RANAP class 2 procedure message (e.g. DL Direct Transfer is not completely transmitted over Uu before Relocation Commit is sent, or Location Reporting Control is received after sending RELOCATION REQUIRED, then source RNC would indicate this error situation to the CN (RANAP: Error Indication) and perhaps RNC could echo the unsuccessful RANAP message as well back to CN. Then it would be the responsibility of CN to resend this message to the target RNC, if it so desires ([2]).

Comment: This proposal results in a new RANAP procedure, as Error Indication is presently used to report user plane failures on ps-Iu.

### Option 3: (SIEMENS/Italtel's proposal)

No additional RANAP / RNSAP mechanism are required, if CN behaves as it does already in GSM:

In [3] a SUSPEND/RESUME mechanism is defined for a situation during handover, where CN is unaware of whether the mobile is currently served by the old A-i/f connection or the new one:

"During the period that the MS is not in communication with the network MSC-A shall queue all appropriate messages. All messages shall be delivered to the MS once communication is

resumed . In the case of an Intra-MSC handover on MSC-B then the messages shall be queued by MSC-B."

The same problem applies to UMTS in both, the cs and ps domain. During the period between RELOCATION COMMAND is sent on the old lu connection and RELOCATION COMPLETE is received on the new one, CN doesn't know, which RNC to send MS relevant information and should therefore suspend sending following RANAP messages:

This messages identified so far are messages belonging to Class 2 type of RANAP procedures:

- DIRECT TRANSFER
- LOCATION REPORTING CONTROL
- CN INVOKE TRACE
- COMMON ID
- PAGING

### **3. Proposal**

It is proposed to rely on GSM based suspend/resume mechanism as described within [3] without implications on RANAP/RNSAP.

Moreover a LS should be issued to SA2 to inform them about RAN3 results and to propose relevant text within 23.xxx standards.

### **4. References**

[1] Tdoc R3-99947, Proposed Parameters to SRNS RELOCATION COMMIT MESSAGE; Source: Fujitsu

[2] Tdoc R3-99A11, Interaction of Relocation Related and Other RANAP Procedures; Source: Nokia

[3] GSM 03.09 v.5.1.0 "Handover Procedures"