TSG-RAN Working Group 3 meeting #7
Sophia Antipolis, France, 20th-24th September 1999

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Agenda Item: 10.4

Source: **Siemens/Italtel**

Title: Proposals/Comments to RANAP V.1.2.2 ([25.413])

Document for: Decision

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1. Introduction

This contribution contains comments and change-proposals to [1].

Comments and text proposals are sorted with respect to chapters of [1]. Re-wording of text within chapters is marked with change-bars.

2. Siemens/Italtel's proposals/comments

8.2.2.1 Successful operation

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As a response to the RELOCATION REQUIRED message the CN sends RELOCATION COMMAND to the source RNC.

In case the network has to support loss-less relocation for certain QoS, additional optional parameters (per bearer) are required within RELOCATION COMMAND to setup temporary GTP-U tunnels. The trigger to setup additional GTP-U forwarding tunnels is given implicitly within RAB QoS definition of IE "RAB parameters".

Comment: Siemens/Italtel support the option to relocate radio access bearers loss less within ps domain referring to Alcatel's proposal to setup a temporary distinct GTP-U tunnels on new and old Iu connection per RAB to be relocated loss-less. Relevant message definitions shall be extended.

Proposal 1: Update chapter 8.2.2.1 according to proposed text.

8.2.3.1 Successful operation

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If all necessary resources(s) including the User plane setup are successfully allocated the target RNC sends back to the CN a RELOCATION REQUEST ACKNOWLEDGE message. The RELOCATION REQUEST ACKNOWLEDGE message sent by the target RNC may optionally contain a transparent container, which is transferred by the CN node to the source RNC using the RANAP message RELOCATION COMMAND.

In case the network has to support loss less relocation for certain QoS, additional optional parameters (per bearer) are required within RELOCATION REQUEST ACKNOWLEDGE and RELOCATION COMMAND to setup temporary GTP-U tunnels. The trigger to setup additional GTP-U forwarding tunnels is given implicitly within IE "RAB parameters".

Proposal 2: update chapter 8.2.3.1 according to proposed text

8.2.6 Relocation Cancel

RELOCATION CANCEL shall be sent by source RNC in the following situations:

- When the source RNC has decided to cancel the relocation because it receives RELOCATION PREPARATION FAILURE from CN in case of 2 Iu connections to be relocated, as described within chapter 8.2.2.3, it sends RELOCATION CANCEL message to the CN waiting for the completion of relocation procedure. If the CN receives RELOCATION CANCEL message, the CN terminates the ongoing Relocation preparation procedure (if any) and sends RELOCATION CANCEL ACKNOWLEDGE message to the source RNC.

- SRNC may abandon ongoing Relocation after receipt of RELOCATION COMMAND if relocation fails within UTRAN.

Comment: Relocation Cancel procedure should be restricted to certain cases.

Proposal 3: update chapter 8.2.6 according to proposed text

8.9 Paging

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~~*Note. Once the domain distribution is clarified with SA2 the Paging indicator may need to be modified.*~~

Comment: We thought it was clarified within in LS response R3-99548. Additionally Siemens made a proposal to clarify Domain Distribution Function in R3-99638. We assume that “paging indicator” stands for CN Domain Indicator

A single PAGING message across the CN to UTRAN interface contains information on the area in which the page shall be broadcast. This is indicated with Paging Area ID (i.e. ~~content FFS, e.g.~~ LA or RA).

Proposal 4: We propose, that no new area identifier will be defined. Area concept as described within 23.121 should be sufficient. Paging of the whole RNC could be performed by using the special LAC value H’0000 (see 24.008). (However, wording “Paging Area ID” is acceptable)

Comment: Introduction of new “Paging Area” would require additional information within location register(s) and an additional translation function within CN. (The same holds for 9.2.24 Broadcast Area).

Proposal 5: update chapter 8.9 according to proposed text

9.1.1.8 INITIAL UE MESSAGE

Information element	Reference	Type
Message type		M
CN Domain Indicator		M
Location Information		M
NAS Layer 3 Information		M

Proposal 6: update chapter 9.1.1.8 according to proposed text

9.1.1.19 RELOCATION REQUEST

Information element	Reference	Type
Message type		M
Cause		M
Source RNC to target RNC transparent container		M
Permanent NAS UE Identity		M
Encryption Information		O
Classmark Information		O
Bearers x n to be setup		M
RAB ID		M
RAB parameters		M
User Plane mode		M
Transport address		M
Iu transport association		M
Priority level and pre-emption indication		O
Bearer linking		O

Comment on *Permanent NAS UE Identity* (in contrast to Tdoc R3-99952): transport container should contain AN specific information only. As a principle, RNC should receive “Permanent NAS UE Identity” only from CN directly. In case of GSM-UMTS HO “Permanent NAS UE Identity” has to be sent in any case.

Comment on *Encryption Information and Classmark Information*: in case of GSM UMTS handover there might be the necessity to inform UE about encryption and MS/UE capabilities.

Proposal 7: update chapter 9.1.1.19 according to proposed text

9.1.1.20. RELOCATION REQUEST ACKNOWLEDGE

Information element	Reference	Type
Message type		M
Target RNC to source RNC transparent container		O (1)
RABs x n		O (2)
RAB ID		M
Transport address		M (3)
Iu transport association		M (3)
Forward Tunnel Parameters		O(4)

(1) Required only via one CN entity.

(2) Always present for SGSN, and present for MSC if parameters have been modified by target RNC.

(3) Always present for SGSN.

(4) In case PS-domain loss-less relocation is required

Proposal 8: update chapter 9.1.1.20 according to proposed text

9.1.1.21 RELOCATION COMMAND

Information element	Reference	Type
Message type		M
RABs x n		O (1)
RAB ID		M (2)
Forward Tunnel Parameters		M(2)
Target RNC to source RNC transparent container		O (~~1~~3)

(1) Present for SGSN, if RAB QoS requires lossless relocation

(2) Mandatory within RABs x n group

~~(1)~~(3) Required only via one CN entity.

Proposal 9: update chapter 9.1.1.21 according to proposed text

9.1.1.33 CN INFORMATION BROADCAST CONFIRM

Information element	Reference	Type
Message type		M
CN Domain Indicator		M

Proposal 10: update chapter 9.1.1.33 according to proposed text

9.1.32 CN INFORMATION BROADCAST REJECT

Information element	Reference	Type
Message type		M
CN Domain Indicator		M
Cause		M

Proposal 11: update chapter 9.1.32 according to proposed text

9.1.1.34 ERROR INDICATION

Information element	Reference	Type
Message type		M
CN Domain Indicator		M
Cause		M
Binding ID		O
Source Network Layer Address		O

Proposal 12: update chapter 9.1.1.34 according to proposed text

9.1.xx HANDOVER PERFORMED

Information element	Reference	Type
Message type		M
Location Information		M

Proposal 13: Define additional RANAP procedure to support CN features relying on current location (serving cell) information. (e.g. to support procedures described within R3-99990 in case of disasters)

9.2.2.12 CN Domain Indicator

Indicates

- either from ~~to~~ which domain (MSC or SGSN) certain connectionless messages~~the paging~~ origins (PAGING, CN INFORMATION BROADCAST REQUEST)

- or to which domain certain messages (INITIAL UE MESSAGE, CN INFORMATION BROADCAST CONFIRM | REJECT, ERROR INDICATION) shall be directed to support combined CN architecture option.

Comment: CN domain indicator should be inserted into parameter list of following messages within [1]:

- Initial UE message
- Paging
- CN Information Broadcast Request
- CN Information Broadcast Confirm
- CN Information Broadcast Reject
- Error Indication (only defined for PS, but should be generic)

Proposal 14: update chapter 9.2.2.12 according to proposed text

9.2.2.28 Location Information

[Editor's note: This definition needs to be harmonized with UMTS 23.10.]

This information shows the location information that has been

- either requested by the CN (~~,~~ e.g. LAI and RAI~~,~~ o~~O~~ther types of location information are FFS)

- or to be provided to the CN in case of call set-up or RELOCATION/HANDOVER~~.~~

Comment: It is a well known paradigma of UMTS, not to involve CN with any AN specific issues. But there there exist a large base of cell-information based (partly standardised) features within GSM based CN (e.g. cell based routing and - charging, IN services, interception, traffic measurement, etc.)

Main functionality of cell-information based features is performed during call set-up. So appropriate IE-layout has to ensure future operation of already implemented cell-information based CN features.

Proposal 15: update chapter 9.2.2.28 according to proposed text. By the way, opinion of operators are appreciated on that issue.

9.2.2.30 Source Id & 9.2.2.31 Target Id

Comment: Layout definition of Target Id should allow both, RNC-Id representation for UMTS-UMTS Relocation and CGI representation for UMTS-GSM handover.

Proposal 16: To rely on GSM 08.08 IE definition “Cell Identifier” (see chapter 3.2.2.17) with an additional cell identification discriminator “RNC Id Representation” to apply tp both, UMTS-UMTS and GSM-UMTS Relocation/Handover scenarios.

9.2.xx Classmark Information

Comment: How to transport RR-Classmark (referring to classmark - splitting process, currently discussed within CN WG1) in case of GSM-UMTS handover. According to discussions within CN WG1 ([2]) at least RELOCATION REQUEST should contain an optional parameter to transport appropriate information towards UTRAN.

Proposal 17: It is requested to insert the relevant IE chapter and to start discussion on that issue.

3. Proposal

It is proposed to introduce the proposed changes into [1].

4. References

[1] 25.413, RANAP protocol V1.2.2

[2] Tdoc N1-99896, “TR Separating RR and MM specific parts of MS Classmark”