TSG-RAN Working Group 3 meeting #1
Bonn 2ⁿᵈ - 5ᵗʰ February 1999

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Agenda Item:

Source: **Ericsson**

Title: **Classmark Update RANAP procedure**

Document for:

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1.   Introduction

In GSM, A-interface Classmark Update procedure aims at updating the MSC/VLR with changes of MS classmark capabilities. This is interesting for functions that consider for instance RF power class to offer some differentiated services or dual band operation to signal additional capabilities at signaling connection establishment.

To respect the UTRAN architecture as described in [2], the Access Stratum UE capabilities (e.g. RF power classes) shall be separated from the NAS UE capabilities (e.g. Source coding capabilities: speech, video…) and confined in the stratum they are relevant for.

For that reason, we believe that there is no need for an Iu Classmark Request procedure as described in [3] for GSM. If additional NAS UE capabilities are needed to be retrieved from the UE by the CN, then signaling messages transparent to UTRAN (i.e. using Direct Transfer as defined in [1]) could be used. In a similar fashion, if additional AS UE capabilities are needed to be retrieved from the UE by UTRAN, then an interrogation procedure shall be defined at RRC level, but shall remain confined within UTRAN.

During SNRS relocation, Inter RNS Hard Handover AS UE capabilities shall be passed as information elements in the signaling messages to the new SRNC. During Inter-system handover to and from GSM or other systems using classmarks, MS capabilities available at the SRNC, respectively BSC shall be passed as information elements in the signaling messages to the handed over to system as described in [4].

However, as the AS UE or MS capabilities may change while the SRNS relocation, Inter RNS Hard Handover or Inter-system handover resource allocation procedure is ongoing (e.g. power amplification), then there is a need to relay these capabilities through the CN between the serving and target entities.

This contribution proposes to introduce in [1] the Iu Classmark Update procedure for the reasons invoked earlier (it has to be noted that this supposes that an UE Classmark Update procedure will be specified in [5] as RRC procedure).

2.   Classmark Update procedure

The purpose of the classmark update procedure is to inform the receiving entity about classmark information received from the UE.

2.1   Classmark Update from the SRNS

If an SRNS relocation or Inter RNS Hard Handover procedure has been initiated for a UE (i.e. SRNS RELOCATION REQUIRED or HARD HANDOVER REQUIRED has been sent to the CN) and a UE

is updating its classmark information in UTRAN, then the SRNC should send a CLASSMARK UPDATE message to the CN at any time prior to receiving SRNS RELOCATION PROCEEDING 2 or HARD HANDOVER COMMAND.

The CLASSMARK UPDATE message shall include the latest classmark information received from the UE.

The CLASSMARK UPDATE message is sent as connection oriented message over the appropriate SCCP connection.

The signalling flow for Classmark procedure from UTRAN is shown in figure X.

Figure X: Classmark Update from SRNS

2.2   Classmark Update from the CN

When receiving the CLASSMARK UPDATE message for a particular UE, the CN shall send a CLASSMARK UPDATE message to the target RNC or target node (in inter-system handover case) when the UE or Terminal Equipment is successfully in communication with the network (i.e. after receiving SRNS RELOCATION COMPLETE or HARD HANDOVER COMPLETE).

This CLASSMARK UPDATE message shall include the classmark information.

If this CLASSMARK UPDATE message is received in the target RNC after a new classmark information has been received from the UE, then the CLASSMARK UPDATE message from the CN shall be ignored.

The CLASSMARK UPDATE message is sent as connection oriented message over the appropriate SCCP connection.

The signalling flow for Classmark procedure from CN is shown in figure X+1.
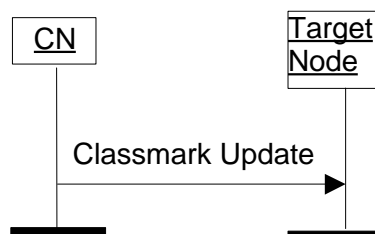

Figure X+1: Classmark Update from CN

3.   Conclusion and Proposal

It is proposed to include text of section 2 in the Description of Iu interface document ref. [1]

4. References

[1] UMTS ZZ.11 V.0.1.0, Description of Iu Interface, Source: Editor

[2] UMTS ZZ.01 V.0.1.0, UTRAN Architecture Description, Source: Editor

[3] GSM08.08 V.7.0.0., MSC-BSC Interface, Layer 3 Specification

[4] ARIB SWG651 16-7, Classmark Transfer Method considering Inter-system HO, Source: Fujitsu

[5] UMTS YY.03 V.0.2.1, Description of UE States and Procedures in Connected Mode, Source: Editor