TSG-RAN Working Group 3 meeting #6
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Agenda Item: 10.3

Source: Nortel Networks

To: TSG-RAN WG3

Subject: Clarification on the "CN information broadcast" RANAP procedure

1 Introduction

During the WG3#5 meeting, the RANAP procedure were reviewed, and questions were raised regarding the aim and the usefulness of the "CN information broadcast" procedure.

This paper aims at clarifying the purpose of this procedure.

2 Description

2.1 information type

As for GSM, a downlink BCH transport channel has been designed in 3GPP to broadcast system control information. System information are regularly broadcast on the BCH by UTRAN and read by UE in Idle mode. They include information from both Access Stratum and Non Access Stratum.

As an example, AS information may contain the following:
- candidate cell list for handover
- cell selection radio parameters
- structure on control channels
- ...

As an example, NAS information may contain the following:
- current location/routing area
- information on charging
- network name
- ...

The principle which has been approved in RAN-WG2 for system information broadcasting on the radio interface makes use of this separation among the various information to broadcast. As specified in [25.304 UE Procedures in Idle Mode] and [25.331 RRC Protocol Specification], the information are split into different blocks corresponding to:

- NAS information from different CNs
- AS information on UTRAN mobility
- AS information on PhyCH structure
- ...

Since NAS/CN information are transparent to the AS/UTRAN, they are sent by CN to UTRAN as bit strings.

2.2 broadcast area

The information coming from the CN may only be relevant for a certain geographical area. Therefore, for each set of information, the CN indicates a geographical area where it shall be broadcast. As indicated in figure 1, it is important this geographical area is not seen by the CN as a set of radio cells. The main benefit of such an approach is that a change of the radio coverage (addition of carrier, densification ...) only impacts UTRAN instead of both radio and network sub-systems as in GSM.

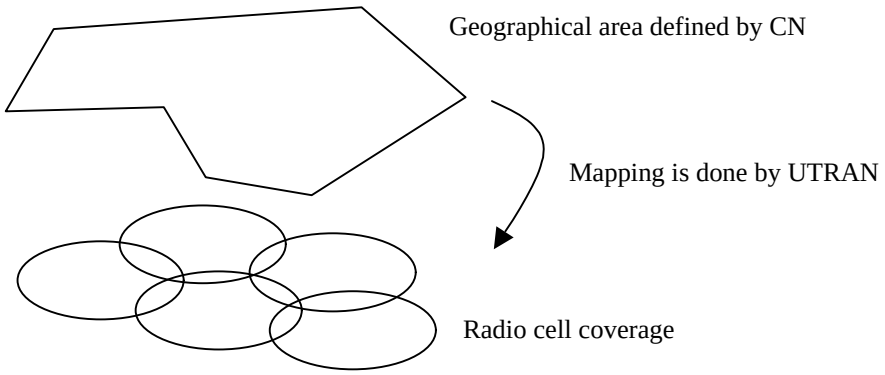

Figure 1

A possibility for defining universal geographical area is provided in [GSM TS 03.32 Universal Geographical Area Description] in which a geographical area is defined using a polygon and a set of points defined themselves using latitude and longitude. A similar principle or even the elements as they are coded in the 03.32 may be used for the definition of the "broadcast area " in the RANAP protocol.

2.3 information scheduling

When requesting a set of information to be broadcast, the CN is not aware of the actual bandwidth the BCH transport channel may offer.

Therefore the "categorisation parameters" as they currently appear in the CN INFORMATION BROADCAST message have to be understood by UTRAN as a possibility to prioritise information in the scheduling mechanism, or at least as best effort values for low priority information.

3 Conclusion

The CN information broadcast procedure allows the CN to broadcast information to mobiles in a flexible way since

- the content is transparent to UTRAN and
- the mechanism is independent from any changes on the radio coverage

This procedure is a general mechanism which may be used for many purposes (Sysinfo broadcasting, SMS-CB, ...)