TSG-RAN Working Group 2 (Radio layer 2 and Radio layer 3) *TSGR2#6(99)881*
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Agenda Item: 10

Source: **Nokia**

Title: **UE-Id formats for MAC**

Document for: Decision

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1. Introduction

This paper presents some modifications to UE-Id formats for MAC.

2. Discussion

At the moment there are 3 possible different UE-Id formats, s-RNTI+SRNCID for RRC Cell and URA Update Requests, c-RNTI for all other messages and one identifier allocated by CN, e.g. TMSI+LAI. To differentiate between these different UE-Id types a UE-Id Type sub-field is needed.

On CCCH the UE-Id is used in Cell and URA Update commands. UE-Id is a part of RRC message and is located in the data part of MAC PDU. No field for UE-Id is needed in the MAC header for CCCH. It is therefore proposed to be removed.

3. Proposed changes in TS 25.321

9.2.1 MAC Data PDU: Parameters of the MAC header

- UE-Id
  The UE-Id field provides an identifier of the UE . The following types of UE-Id are currently defined:

s-RNTI , this UE Id is related to the serving RNC
c-RNTI, this UE Id is related to the controlling RNC.
In addition for UE's having a RRC connection the S-RNC identifier exist.

s-RNTI together with S-RNC identifier is used for Cell and URA update RRC connection reestablishment and UTRAN originated paging messages and theire associated responses in CCCH or DCCH.

c-RNTI is used as a UE identifier in all other DCCH/DTCH common channel messages on the air interface.

UE-Id Type sub-field inside the UE-Id field is needed to ensure the correct decoding of the UE-Id field in MAC Headers.

The UE-Id Type sub-field definition:

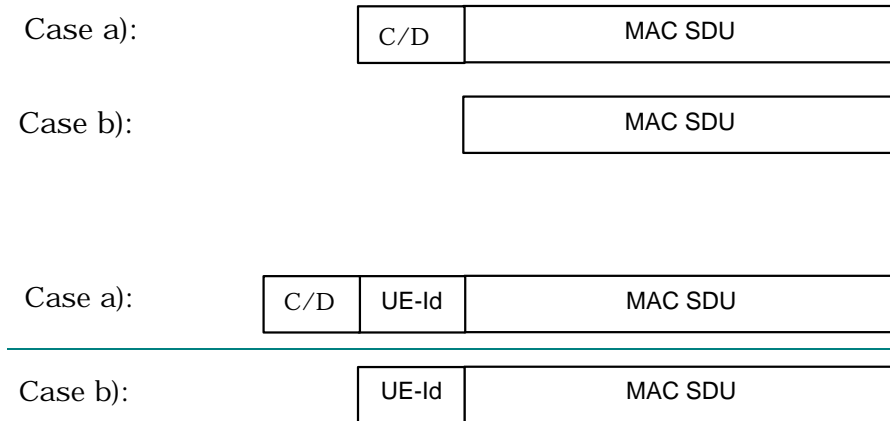| UE-Id Type sub-field 2 bits	UE-Id Type
00	CN allocated identifier (e.g. TMSI+LAI)
01	s-RNTI + SRNCID
10	c-RNTI

11	For future use

Note: Whether or not other UE-Id types are needed is ffs.

9.2.1.2 MAC header for CCCH

Note: The concept for using UE Id on CCCH has to be reviewed

a) CCCH mapped to RACH/FACH:
   C/D has to be included ~~and UE-id field may be included~~ in MAC header. ~~Details of usage the UE id field is ffs.~~
b) CCCH mapped to RACH/FACH, where CCCH is the only channel (ffs)~~:~~
   ~~UE id field may be included in the MAC header.~~

Note: The usage of the MAC header for BCCH and PCCH is ffs.
The address used for initial addressing is ffs, a possible solution may be to use a Random or CN related Identifier.

Case a):

C/D	MAC SDU

Case b):

MAC SDU

Case a):

C/D	UE-Id	MAC SDU

Case b):

UE-Id	MAC SDU

Figure 9.2.1.2.1 : MAC Data PDU formats for CCCH

References

[1] RAN WG2 667/99, Nokia, CR to 25.303: Cell / URA update procedures
                    (revised Tdoc 604)