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

TSGW3#7(99)B64

Agenda Item: **14.2**

Source: **Ericsson**

Title: **Coding of propagation delay field in RACH FP**

Document for: **Decision**

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1. INTRODUCTION

During TSG-RAN WG3 #6, it was decided to have a propagation delay estimate field in every (UL) RACH frame in the RACH FP on Iub based on ref [1].

This contribution proposes length and coding for this RACH FP field.

2. RATIONALE

The proposed length and coding is based on two assumptions:

1. Any suggested solution should be able to handle cells with a minimum maximum range of 50 km.

2. The positioning of the receiver window is considered sufficiently accurate if the indicated one way propagation delay, which was measured on the RACH, is provided with a 3 chip granularity.

Having cells with a range of 50km means that Tp <= 166.6μs. This corresponds to 640 chips.

If we assume a 3 chip granularity, with an 8 bit field a Tp of up to 765 chips can be indicated, which corresponds to a maximum cell range of 59.7 km.

3. PROPOSAL

It is proposed that in ref [2], the propagation delay field description is updated with:

Description: Round-trip air interface delay as measured during RACH access
Value range: 0 – 765 chips
Granularity: 3 chips
Field length: 8 bits

4. REFERENCES

[1]: TSG RAN WG3#6(99)A05: “Use of the propagation delay for the uplink synchronisation” (Nokia)

[2]: TS 25.435 TSG RAN: “UTRAN Iub Interface User Plane Protocols for COMMON TRANSPORT CHANNEL Data Streams”