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TSG R2(99)J47

Source:	RAN WG2
To:	RAN WG1
Subject:	Liaison on LCS (in response to liaison from WG1)

WG2 thanks WG1 for the liaison R2-(99)D91 (TSGR1#8(99)H51) in response to questions on LCS.

The following notes may provide guidance for WG1 in furthering its work on LCS.

Measurements for network assisted GPS –

"What kind of measurements are required for the network assisted GPS method in L1 is not clear yet. WG1 asks for

The generic information flow for GPS assisted location methods is outlined in section 6.2.4.1.2 of the "Stage 2 Functional Specification of Location Services in UTRAN" (Document TS25.305). These information elements should be used as a guide for the commands, responses and information to be used for the GPS (and other satellite) measurement methods. An outline of the GPS assisted methods may also be found in section 4.4.3 of document TS25.305.

WG2 is continuing to study details of network assisted GPS methods.

During the RAN WG2 Ad Hoc on LCS (Sophia Antipolis; 25-26 November 1999), the timing difference between the GPS system and the UTRAN (inter-system measurement) was identified as an important measurement which can benefit both the network assisted GPS and OTDOA-IPDL LCS methods. WG2 requests WG1 to include this measurement in TS 25.215 for Release '99. This measurement is optional in LMUs. This measurement may be optionally included in the UE.

In the network assisted GPS methods the inter-system measurement may be used to reduce the signal search space and hence reduce the user delay in obtaining a location fix. Typically, a timing assistance accuracy of several microseconds is required for an acceptable location fix user delay. The relationship between GPS time and UTRAN timing is to be defined as GPS-UTRAN-Reference-Time in a similar way as in GSM 04.31 Annex A Section 4.2.4.

Round Trip Time (RTT) measurements –

"WG1 has identified the RTT (Round Trip Time) measurement to be very useful for LCS. The additional complexity to support RTT is expected to be very small. RTT can be used to improve cell-coverage based methods and as backup and reliability indicator for other methods (e.g. GPS and IPDL). The UE Rx-Tx time difference measurement is needed both as a prerequisite to RTT and for other purposes. WG1 proposes that the UE Rx-Tx difference and RTT measurements be included in R99 also by WG2."

WG2 has noted the opportunity to make use of RTT measurements as part of the location process. These measurements are also being standardised for additional purposes within UTRAN operations, and the standard signalling with the UE may be used for either UTRAN related or LCS related operations. These signalling elements are (or will be) included for Release'99 in the measurements document 25.302 [the RTT measure is discussed in section 9.3.1 however, the UE Rx-Tx difference measure is not (yet) described].

CPICH Power level –

"Since the IPDL method uses the CPICH to determine the OTDOA, it is of relevance what the power of that signal is. The parameter agreed in WG1 is 10 % of the total BS power. WG1 requests WG2 to indicate whether this is a reasonable level."

The choice of the power level for the CPICH is generally outside the scope of WG2 expertise. WG2 notes that operators may set this level based on their deployment, geography and expected traffic patterns. Thus the level of the CIPCH may be set by means of a parameter sent as part of signalling over the Iub interface.

PE method (TSGR1#8(99)G57) –

"Panasonic presented the PE method for LCS [2]. It was decided that this would be better to discuss in WG2. See [1] TSGR1#8(99)g57, Positioning method proposal, Panasonic."

The PE method outlined in contribution to WG2 R2-(99)E48 (TSGR1#8(99)G57) is being reviewed in WG2. Signaling to support the method will be considered beyond Release '99.

WG1 may wish to evaluate whether supporting measurements can be included in Release '99.