3GPP TSG-RAN WG3#125bis R3-245686

Hefei, China, 14-18 October 2024

Agenda Item: 9.1

Source: Qualcomm

Title: Summary of Discussion on NBIoT UE location

Document for: Discussions & Approval

# Introduction

**MME may send the coarse location back to the eNB per-UE and only once after UE attach by Initial UE Context Setup Request message?**

**FFS on other critical issues if any**

CB: # 4\_NBIoTNTN

* Discuss the open issues above
* Other critical corrections if agreeable

(moderator - QC)

Summary of offline disc [R3-245686](file:///C%3A%5CUsers%5Cpkadiri%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CAQ4QUYTS%5CInbox%5CR3-245686.zip)

# For Chairman’s notes

<TBD>

# 3 Discussion

## 3.1 UE Location Information from MME to eNB

Based on online and further offline discussions with multiple companies, moderator proposes following solution as compromise:

Step 1 : eNB will send 2 bit indication to MME.

* Bit 1 : eNB requests MME (if available at MME) to provide UE coarse location one time upon receiving request from eNB.
* Bit 2 : eNB requests MME to provide any subsequent updated UE Coarse Location Information to eNB when available at MME.

Step 2: when MME has UE coarse location information available, based on eNB requested information in step, MME will send UE coarse location information to eNB.

**Question 1**: Do companies agree with above compromised solution? Please provide any additional comments if any additional enhancements needed.

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| Company | Yes/No | Comments |
| QC | Yes | As compromise, we are OK with above approach to make progress using 2 bit approach. |
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**Question 2**: If answer to the Question 1 is “Yes”, can we agree to use the following messages for one time transfer of UE location?

* eNB requests for coarse UE location in NGAP Initial UE message (using bit 1 as proposed above)
* MME sends coarse UE location in NGAP UE Context Setup Request message

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| Company | Yes/No | Comments |
| QC | Yes |  |
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**Question 3**: If answer to Question 1 is “Yes”, do companies agree to use the following NGAP messages for subsequent transfer of updated UE location based on eNB request? If any other message please mention it in the comments section.

* eNB requests for coarse UE location in NGAP Initial UE message (using bit 2 as proposed above)
* MME sends coarse UE location in NGAP UE Context Modification Request message

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| Company | Yes/No | Comments |
| QC | Yes |  |
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**Question 4**: If any other alternative NGAP messages are needed, please provide details in comments .

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| Company | Comments |
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## 3.2 Other Corrections

**Question 5**: As per [R3-245339](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_125-bis%5CDocs%5CR3-245339.zip) and [R3-245485](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_125-bis%5CDocs%5CR3-245485.zip), Nokia, E/// and HW proposes to modify text in TS 36.300 on Mapped Cell ID as below –

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| 23.21.6 SignallingThe Cell Identity, as defined in TS 36.413 [25] and TS 36.423 [42], corresponds to a Mapped Cell ID, irrespective of the orbit of the NTN payload or the types of service links supported, except the following cases:- For a BL UE or a UE in enhanced coverage, the Cell Identity included within the target identification of the handover messages allows identifying the correct target cell.The mapping between Mapped Cell ID(s) and geographical area(s) is configured in the RAN and Core Network.NOTE 1: A specific geographical location may be mapped to multiple Mapped Cell ID(s), and such Mapped Cell IDs may be configured to indicate different geographical areas (e.g. overlapping and/or with different dimensions). |

Are companies ok with the changes proposed in the draftCR in [R3-245339](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_125-bis%5CDocs%5CR3-245339.zip) and [R3-245485](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_125-bis%5CDocs%5CR3-245485.zip)? Please comment.

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| Company | Yes/No | Comments |
| QC | See Comments | Prefer to align 36.300 with similar text in 38.300. The text rewording can be first discussed in 38.300 NR NTN.  |
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**Question 6**: As per R3-245482, E///, Thales and HW proposes to add the below text in TS 36.305 as below –

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| 5.3.3 Evolved Serving Mobile Location Centre (E-SMLC)The E-SMLC manages the support of different location services for target UEs, including positioning of UEs and delivery of assistance data to UEs. The E-SMLC may interact with the serving eNode B for a target UE in order to obtain position measurements for the UE, including uplink measurements made by the eNode B and downlink measurements made by the UE that were provided to the eNode B as part of other functions such as for support of handover. The E-SMLC may also interact with the serving eNode B to indicate to the serving eNode B the need to direct the UE to transmit SRS (see 5.2.2) signals to enable the uplink positioning method and to acquire the target UE configuration data needed by the LMUs to calculate the timing of these signals.The E-SMLC will select a set of LMUs to be used for the UTDOA positioning. The E-SMLC interacts with the selected LMUs to request timing measurements.The E-SMLC may interact with a target UE in order to deliver assistance data if requested for a particular location service, or to obtain a location estimate if that was requested.The E-SMLC may interact with multiple eNode B's to provide location assistance data information for broadcasting. The assistance data information for broadcast may optionally be segmented and/or ciphered by the E-SMLC. The E-SMLC may also interact with MMEs to provide ciphering key data information to the MME as described in greater detail in TS 23.271 [2].For positioning of a target UE, the E-SMLC decides on the position methods to be used, based on factors that may include the LCS Client type, the required QoS, UE positioning capabilities, and eNode B positioning capabilities. The E-SMLC then invokes these positioning methods in the UE and/or serving eNode B. The positioning methods may yield a location estimate for UE-based position methods and/or positioning measurements for UE-assisted and network-based position methods. The E-SMLC may combine all the received results and determine a single location estimate for the target UE (hybrid positioning). Additional information like accuracy of the location estimate and velocity may also be determined.For NTN, the E-SMLC is configured by the OAM with satellite related information (described in TS 36.300 [x]). |

Do companies think draftCR R3-245482 is needed? If yes please provide reasoning.

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| Company | Yes/No | Comments |
| QC |  | It is unclear which feature or correction this CR is addressing. Needs further discussion.  |
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