3GPP TSG RAN WG4 Meeting #100-e R4-2115368

Electronic Meeting, August 16 – 27, 2021

**Title:** Reply LS on UE/TRP Tx/Rx timing error mitigation

**Response to:** R4-2107610 (R1-2104111)

**Release:** Rel-17

**Work Item:** NR\_pos\_enh-Core

**Source:** RAN WG4

**To:** RAN WG1

**Cc:**

**Contact person:**

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**Attachments: None**

# 1 Overall description

In LS R4-2107610 (R1-2104111), RAN1 provides the following agreements on mitigating TRP/UE Tx/Rx timing error for TDOA together with the definition of UE/TRP Tx/Rx timing errors and TEGs.

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| --- |
| Agreement:   * Support the following for mitigating TRP Tx timing errors and/or UE Rx timing errors for DL TDOA   + Support a UE to provide the association information of RSTD measurements with UE Rx TEG(s) to the LMF when the UE reports the RSTD measurements to the LMF if the UE has multiple TEGs   + Support a TRP providing the association information of DL PRS resources with Tx TEGs to the LMF if the TRP has multiple TEGs   + Support the LMF to provide the association information of DL PRS resources with Tx TEGs to a UE for UE-based positioning if the TRP has multiple TEGs   + FFS: the details of the signalling, procedures, and UE capability * Send an LS to RAN4 to check if there is any issue to support the above enhancements |

RAN4 discussed the agreements above and the definition of UE/TRP Tx/Rx/RxTx TEG provided in the LS, and the following views are provided from RAN4 side:

* It is RAN4 understanding that “DL measurements” in the definition of Rx TEGs refers to TOA measurements (i.e., reference cell and target cell TOA measurements can be associated with different TEGs).
* It is RAN4 understanding that TEG framework enables association information without limiting implementation to ensure that the timing error difference between measurements/transmissions associated to the same TEG are within a certain margin.
* It is not necessary to know the absolute timing error for UE/TRP Tx/Rx TEG.
* The above mechanism for timing error mitigation defined by RAN1 is feasible for both UE Rx/Tx and gNB Rx/Tx.
* UE/TRP may group the timing errors for UE/TRP Rx/Tx (e.g., based on RF chains and antenna panel) such that timing error difference in the same group is within a certain margin
* RAN4 will further study on RRM requirements for timing error mitigation mechanism, timing error grouping method, criteria and margin.
* RAN4 will further study if any specific UE behavior will be defined.
* RAN4 will further discuss the time variation of TEGs.

# 2 Actions

**To RAN WG1**

**ACTION:** RAN4 kindly asks RAN1 to take the information above into consideration.

# 3 Dates of next TSG RAN WG4 meetings

TSG RAN WG4 Meeting #101-e Nov. 1 – 12, 2021 Electronic Meeting