**3GPP TSG RAN WG2#127bis R2-24xxxxx**

**Hefei, China, 14 – 18 October 2024**

**Title:** LS on Additional Measurements for SL-TDOA and SL-TOA

**Response to:** -

**Release:** Rel-18

**Work Items:** NR\_pos\_enh2

**Source:** [To be: RAN WG2]

**To:** RAN WG1

**CC:** -

**Contact Person:**

#### Name: Sven Fischer

E-mail Address: sfischer@qti.qualcomm.com

**Attachment:** -

**1. Overall Description:**

RAN2 observed that the LS in R2-2407909 (R1-2407387) with the latest RAN1 feature list for Rel-18 NR (R1-2407385) contains the following note:

|  |
| --- |
| For NR\_pos\_enh2, with regards to FGs 41-1-7a and FG 41-1-7b, RAN1 respectfully informs RAN2 that UE capability components have been specified, but there is no corresponding report specified in the *ProvideLocationInformation* message of TDOA and TOA methods. |

However, there was no specific action for RAN2 other than “take into account the RAN1 NR UE features”. RAN2 discussed the above issue at RAN2#127bis and have the following questions for RAN1:

Question 1: Is RAN2 requested to add signalling to enable a SL-TDOA/SL-TOA capable UE to report additional measurements (up to 3 additional SL-TDOA/SL-TOA measurements according to UE capabilities)?

Question 2: If the answer to Question 1 is ‘yes’, what should the additional SL-TDOA/SL-TOA measurements comprise? Do the additional SL-TDOA/SL-TOA measurements include the SL-RSTD/SL-RTOA measurements only (as FGs 41-1-7a and FG 41-1-7b seems to imply), or can the additional SL-TDOA/SL-TOA measurements also include the SL-PRS RSRP/RSRPP measurements together with other currently reported information such as SL-PRS Resource ID (*sl-PRS-ResourceId-r18*), LOS/NLOS indicator (*los-NLOS-Indicator-r18*), additional paths measurements (*sl-TDOA-AdditionalPathList-r18*/*sl-TOA-AdditionalPathList-r18*), timing quality (*sl-TimingQuality-r18*), and/or time stamp (*sl-TimeStamp-r18*)?

Question 3: If additional SL-RSTD/SL-RTOA (and probably SL-PRS RSRP/RSRPP) measurement reporting is required, should the encoding of the additional SL-RSTD/SL-RTOA (and probably SL-PRS RSRP/RSRPP) measurements be defined relative to the 1st/main SL-RSTD/SL-RTOA measurement (or 1st/main SL-PRS RSRP/RSRPP measurement)? I.e., analogous to LPP additional measurement reporting where the e.g., additional RSTD measurements are defined relative to the 1st/main RSTD measurement (e.g., *nr-RSTD-ResultDiff* in LPP). If so, what would be the value range of the additional SL-RSTD/SL-RTOA (and probably SL-PRS RSRP/RSRPP) measurements relative to the 1st/main SL-RSTD/SL-RTOA (and probably SL-PRS RSRP/RSRPP) measurement?

**2. Actions:**

**To RAN WG1**

**ACTION:** RAN2 respectfully asks RAN1 to provide answers to the above questions.

**3. Date of Next RAN WG1 Meetings:**

TSG-RAN WG2 Meeting #128 November 18 to 22, 2024 Orlando, US

TSG-RAN WG2 Meeting #129 February 17 to 21, 2025 Athens, GR