3GPP TSG-RAN WG2 Meeting #117-eR2-22xxxx

**Electronic, February 21 – March 3, 2022**

**Title: [draft] LS on Positioning in RRC\_INACTIVE State**

**Release:** Rel-17

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

**Source:** Qualcomm Incorporated (to be RAN2)

**To:** SA2, RAN3

**Cc:**

**Contact Person:**

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**Attachment:: R2-220xxxx**

**1. Overall Description:**

RAN2 has technically endorsed the attached "Low Power Periodic and Triggered 5GC-MT-LR Procedures with SDT" for DL-only and RAT-Independent positioning, for UL-only positioning, and for UL+DL positioning. These procedures are analogous to the "Low Power Periodic and Triggered 5GC-MT-LR Procedures" specified in clause 6.7 of TS 23.273 but making use of the NR Small Data Transmission (SDT) feature in TS 38.300 in RRC\_INACTIVE state instead of the LTE EDT feature in RRC\_IDLE state in TS 36.300 currently used in clause 6.7 of TS 23.273.

RAN2 believes that these procedures may be best captured in TS 23.273 as an alternative to Figure 6.7.1-1 when the Event Reports can be sent using NR SDT. Accordingly, RAN2 would like to ask SA2 whether support can be provided for the attached procedures in TS 23.273 and, if so, to add support to TS 23.273 as part of Release 17.

RAN2 would also like to inform SA2 about the following agreements made:

Agreements:

Exposure of the RRC state of the UE to the LPP layer of the UE for RRC\_INACTIVE UL and DL positioning will not be specified. This does not exclude cross-layer behaviour in implementations.

The RRC state of the UE is not exposed to the LMF for INACTIVE UL and DL positioning.

RAN2 will not make additional effort to make the gNB aware of when to transit the UE to RRC\_INACTIVE (left to gNB implementation and RAN3 solution).

Also, within the attached procedure for DL-only and RAT-Independent, UL-only, UL+DL positioning, we have also considered the scenario of Random Access-based Small Data Transmission without anchor relocation. We understand the LCS and LPP message can be transported between the receiving gNB and last serving gNB with the XNAP message *RRC TRANSFER* message as has been agreed for the discussion for SDT. While for UE-associated NRPPa message *POSITIONING INFORMATION REQUEST and POSITIONING INFORMATION RESPONSE*, they are needed in the case of UL and UL+DL positioning and also need to be forwarded between the receiving gNB and the last serving gNB in case of RA-SDT without anchor relocation. Hence, R2 would like to understand this can be supported under the currently agreed functionalities in RAN3.

**2. Actions:**

**To SA2 group.**

**ACTION:** RAN2 kindly asks SA2 to review the attached "Low Power Periodic and Triggered 5GC-MT-LR Procedures with SDT", determine whether support can be provided for the attached procedure in TS 23.273 and, if so, to add support to TS 23.273 as part of Release 17.

**To RAN3 group**

**Action**: RAN2 respectively asks RAN3 to confirm whether UE-associated NRPPa message POSITIONING INFORMATION REQUEST and RESPONSE can be forwarded between the receiving gNB and the last serving gNB when there is no anchor relocation for positioning in RRC\_INACTIVE.

**3. Date of Next TSG-RAN2 Meetings:**

TSG-RAN2 Meeting #118-e 16-27 May 2022 Electronic Meeting

TSG-RAN2 Meeting #119-e 22-26 August 2022 Electronic Meeting

Editor's Note: The procedures in Annex A, B,C of the discussion template will be attached.