**3GPP T****SG-RAN WG3 Meeting #117-e R3-22oooo**

**Electronic Meeting, August 15th – 24th, 2022**

Title: [Draft] LS on SRS-PosRRC-InactiveConfig configuration signalling

Response to: -

Release: Rel-17

Work Item: NR\_pos\_enh

Source: RAN3

To: RAN2

Cc:

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Attachments:

**1. Overall Description:**

In supporting the *SRS-PosRRC-InactiveConfig-r17* configuration in a split CU-DU architecture that RAN2 has defined for UL positioning measurements during INACTIVE by the periodic deferred 5GC-MT-LR procedure (which is configured by suspend configuration via *RRCRelease* message), RAN3 has agreed the following:

* The sub-fields under *SRS-PosRRC-InactiveConfig-r17* are all under the responsibility of DU.
* *SRS-PosRRC-InactiveConfig-r17* is for UL positioning during INACTIVE, which is triggered by LMF (i.e. Positioning Information Exchange procedure over NRPPa).
* In order for CU to configure *SRS-PosRRC-InactiveConfig-r17* to the UE (via *RRCRelease* message), the enhancement on the F1AP Positioning Information Exchange procedure is necessary, so that DU can generate the SRS configuration taking into the *Requested SRS Transmission Characteristics* IE account in the POSITIONING INFORMATION REQUEST message.

RAN3 also discussed whether an explicit querying mechanism from CU is needed to retrieve *SRS-PosRRC-InactiveConfig-r17* from DU.

Related to the above querying discussion, RAN3 understands that, beyond what RAN2 has endorsed for UL positioning in the Annexes of RAN2's LS to RAN3 (R2-2203949) and what has been captured into TS 23.273 Sections 6.7.3, 6.7.4, and 6.7.5 that describe the deferred Low Power Periodic and Triggered 5GC-MT-LR procedures using SDT only when LCS event is detected while the UE is in INACTIVE state and the UE is moved back to INACTIVE state,

1. A periodic LCS event configured by a deferred MT-LR procedure doesn't discriminate RRC INACTIVE or CONNECTED state of the UE. Once a periodic deferred MT-LR is configured, LCS event can be detected when the UE is in RRC CONNECTED state.
2. During SDT, the serving gNB can decide to move the UE into any RRC state (unless RA-SDT without anchor relocation is used where the last serving gNB is prohibited to move the UE directly into RRC CONNECTED).

Based on the above understandings, RAN3 thinks that the procedures shown in Annex are also possible and thus the explicit querying mechanism from CU under discussion in RAN3 (over F1AP Positioning Information Exchange procedure) is necessary. Namely, if the UE is to be moved to RRC CONNECTED, the DU needs to provide SRS configuration based on CONNECTED mode configuration instead of the INACTIVE container. DU should be able to distinguish which contribution to provide and thus the explicit query is necessary.

RAN3 would like to ask RAN2 whether the above RAN3 understandings are aligned with RAN2 and also under the scope of Rel-17.

**2. Actions:**

**To RAN2 group.**

**ACTION:** RAN3 respectfully asks RAN2 to take the above into account and to provide answers accordingly.

**3. Date of Next RAN WG3 Meetings:**

RAN3 Meeting #117bis-e October 10 – 18, 2022 Electronic Meeting

RAN3 Meeting #118 November 14 – 18, 2022 Canada

Annex

LCS event is detected during RRC CONNECTED and LCS event report is sent, and then when the serving gNB receives NRPPa Positioning Information Request message from LMF for UL positioning, the serving gNB may have decided to move the UE to INACTIVE state:



**Figure 1: Low Power Periodic and Triggered 5GC-MT-LR Procedure when event is detected during RRC CONNECTED and LCS event report is sent, then gNB decides to move the UE into INACTIVE**

LCS event is detected during INACTIVE and LCS event report is sent using SDT, and then the serving gNB later may decide to move the UE to RRC CONNECTED state:



**Figure 2: Low Power Periodic and Triggered 5GC-MT-LR Procedure with SDT when event is detected during RRC INACTIVE and then gNB decides to move the UE into RRC CONNECTED**