**3GPP TSG-RAN WG2 Meeting #112e DRAFT R2-2010841**

**eMeeting, 02 – 13 November 2020**

**Title: [DRAFT]** LS on physical layer aspects of small data transmission

**Response to:** -

**Release:** Release 17

**Work Item:** NR\_SmallData\_INACTIVE-Core

**Source:** ZTE [TSG RAN WG2]

**To:** TSG RAN WG1

**Contact Person:**

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**Send any reply LS to: 3GPP Liaisons Coordinator,** **mailto:3GPPLiaison@etsi.org**

**1. Overall Description:**

RAN2 has started work on the NR Small Data Enhancements WI (RP-201305). The objectives of this WI include solutions for RACH based small data transmission (RA-SDT) and Configured Grant based small data transmissions (CG-SDT). RAN2 would like to highlight the following agreements reached so far and respectfully request RAN1’s input on the specific aspects mentioned below.

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| Some relevant agreements:For RA-SDT1. For RACH based solutions, upon successful completion of contention resolution, the UE shall monitor the C-RNTI.

For CG-SDT1. The configuration of configured grant resource for UE uplink small data transfer is contained in the RRCRelease message. Configuration is only type 1 CG with no contention resolution procedure for CG.
2. The configuration of configured grant resource can include one type 1 CG configuration.
3. The configuration of configured grant resource for UE small data transmission is valid only in the same serving cell.
4. The UE can use configured grant based small data transfer if at least the following criteria is fulfilled (1) user data is smaller than the data volume threshold; (2) configured grant resource is configured and valid; (3) UE has valid TA. FFS for the candidate beam criteria.
5. From RAN2 point of view: An association between CG resources and SSBs is required for CG-based SDT. FFS up to RAN1 how the association is configured or provided to the UE. Send an LS to RAN1 to start the discussion on how the association can be made. Mention that one option RAN2 considered was explicit configuration with RRC Release message
6. A SS-RSRP threshold is configured for SSB selection. UE selects one of the SSB with SS-RSRP above the threshold and selects the associated CG resource for UL data transmission.

For RA-SDT and CG-SDT1. When UE is in RRC\_INACTIVE, it should be possible to send multiple UL and DL packets as part of the same SDT mechanism and without transitioning to RRC\_CONNECTED on dedicated grant.
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**For RA-SDT:**

As noted above, RAN2 has agreed that the UE in RRC\_INACTIVE should be able to send multiple UL and DL packets as part of the same SDT mechanism and the UE has to monitor the PDCCH addressed to the C-RNTI after successful completion of the RACH procedure during RA-SDT. RAN2 respectfully requests RAN1 to provide input on configuration of the coreset and search space for monitoring the PDCCH addressed to the C-RNTI in the above case.

**For CG-SDT:**

As noted above, RAN2 has agreed that an association between type 1 CG resource(s) and SSB(s) is required for CG-based SDT considering the multi-beam operation. Providing such configuration explicitly in the *RRCRelease* message with *suspendConfig* is being considered by RAN2. RAN2 respectfully requests RAN1 to provide input on configuration of such association between the type 1 CG resources and the SSBs.

**2. Actions:**

**To RAN1 group.**

**ACTION:** RAN2 respectfully requests RAN1 to take the above into account and provide input for:

* Configuration of the coreset and search space for monitoring the PDCCH addressed to the C-RNTI after successful completion of the RACH procedure during RA-SDT.
* Configuration of association between the type 1 CG resource(s) for CG-SDT and SSB(s)

**3. Date of Next TSG-RAN WG2 Meetings:**

3GPP RAN2#113-e 25 Jan – 05 Feb 2021 Electronic Meeting