**3GPP TSG-RAN WG2 Meeting #112e DRAFT R2-2010839**

**eMeeting, 02 – 13 November 2020**

**Title: [DRAFT]** LS to RAN3 on small data transmission

**Response to:** -

**Release:** Release 17

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

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

**To:** TSG RAN WG3

**Contact Person:**

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**1. Overall Description:**

RAN2 has started work on the NR Small Data Enhancements WI (RP-201305). The objectives of this WI include solutions for UE AS Context fetch and data forwarding with and without anchor re-location.

In RAN2 the assumption is that the details of the procedures and possible adaptations related to UE AS context handling for SDT is handled and decided in RAN3. To benefit in those discussions for this Work Item, RAN2 would like to highlight the following related agreements reached so far in RAN2.

**Agreements:**

* RAN2 confirm that RACH based SDT is supported with and without UE context relocation(RAN2 #112e)
* From RAN2 perspective, stored “configuration” in the UE Context is used for the RLC bearer configuration for any SDT mechanism (RACH and CG). (RAN2 #111e)
* Inform RAN3 on UE SDT data handling impact including using a stored RLC configuration. (RAN2 #112e)
* The configuration of configured grant resource for UE small data transmission is valid only in the same serving cell (RAN2 #112e).
* UL/DL transmission following UL SDT without transitioning to RRC\_CONNECTED is supported (RAN2 #111e).
* 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. (RAN2 #111e).
* For both RACH and CG based solutions, new keys are generated using the stored security context and the NCC value received in the previous RRCRelease message (i.e. same as legacy procedure) and these new keys are used for generating the data of DRBs that are configured for SDT (RAN2 #112e).

SDT can be initiated by the UE in RRC INACTIVE state either in the same cell/gNB where the UE received RRC Release with suspend configuration, or in another cell/gNB (in case of RACH based SDT), when the UE reselects to a different cell whilst in INACTIVE state. In addition, RAN2 also agreed that the first UL message (i.e. MSG3 for 4-step RACH and MSGA payload for 2-step RACH and the CG transmission for CG) may contain DRB data from one or more DRBs which are configured by the network for SDT per DRB basis.

The RLC configuration used for the DRB data in this first UL message will be based on the stored configuration. RAN2 assumption is that the RLC PDU will be processed in the target gNB. RAN2 would like to also note that how this frame work could be used is left up to RAN3 and requests RAN3 to provide any feedback on this aspect from RAN3 perspective.

UE can also send or receive subsequent packets to/from the network on dedicated grant, using the stored RLC configuration, without transitioning to RRC CONNECTED state. The discussion leading to the above agreements included aspects of handling of SDT data as a result of using a stored UE AS context and that depending on when or if a UE AS context exchange is made irrespective of performing an anchor relocation, the SDT data may incur additional latency as the deciphering cannot be made in the receiving target node.

RAN2 would like RAN3 to take the above aspects into consideration in their work and specify the context fetch and data forwarding related procedures to support SDT data transmission with and without anchor relocation.

**2. Actions:**

**To RAN3 group.**

**ACTION:** RAN2 respectfully requests RAN3 to take the above into account and specify the context fetch and data forwarding related procedures to support SDT data transmission with and without anchor relocation and provide any feedback on the above RAN2 agreements.

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

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