3GPP RAN WG2 Meeting #113bis-e R2-210xxxx

eMeeting April 12th – April 20th, 2021

Title: [Draft] LS to CT1 on Small data transmission

Release: Release 17

Work Item: NR\_SmallData\_INACTIVE-Core

Source: Intel Corporation [to be RAN2]

To: CT1

CC: SA2

**Contact Person:**

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Attachments: None

**1. Overall Description:**

RAN2 is working on small data transmission in RRC\_INACTIVE where multiple UL and DL packets can be exchanged between the network and the UE without UE transitioning to RRC\_CONNECTED with WID (RP-210870).

RAN2 agreed to the following points and would like to ask CT1 to inform RAN2 of any feedback:

1. SDT is transparent to NAS layer (i.e. NAS generates one of the existing resume causes and AS decides SDT vs non-SDT access)
2. Small data transmission (SDT) with RRC message is supported as baseline.
   1. For small data when the UE receives RRC release with Suspend config, the UE at least performs the following actions (i.e. same action as in legacy): SRBs and DRBs are suspended except SRB0.
   2. Upon initiating RESUME procedure for SDT initiation (i.e. for first SDT transmission), the UE shall re-establish at least the SDT PDCP entities and resume the SDT RBs that are configured for small data transmission (along with the SRB1).
   3. The first UL SDT message (i.e. MSG3 for 4-step RACH, MSGA payload for 2-step RACH and the CG transmission for CG) may contain at least the following contents (depending on the size of the message): CCCH message (needs to be included); data from one or more RBs which are configured by the network for small data transmission.
   4. Support configuring of SRB1 and SRB2 for small data transmission for carrying RRC and NAS messages.
   5. Small data transmission is configured by the network on a per DRB basis.
   6. RAN2 design assumes that *RRCRelease* message is sent at the end to terminate the SDT procedure from RRC point of view.
   7. 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.
3. The UE behaviour for handling of non-SDT data arrival after sending the first UL data packet is fully specified (i.e. not left to UE implementation)
   1. Non-SDT radio bearers are only resumed upon receiving *RRCResume* (same as today)
   2. Switching from SDT to non-SDT is supported. UE receive indication from network to switch to non-SDT procedure. Network can send *RRCResume* to transit the UE to RRC\_CONNECTED during an ongoing SDT session.

RAN2 also have an additional question:

RAN2 agreed that only radio bearers configured for SDT are resumed and additional UL and DL data can be exchanged between UE and network as part of a given SDT session while the UE is still in RRC\_INACTIVE (i.e. without transition to RRC\_CONNECTED). In this case, if new UL data or NAS message becomes available for non-SDT radio bearers (which are suspended), would it be possible that NAS triggers another request to transition into RRC\_CONNECTED and provides access category, access identities and resume cause.

**2. Actions:**

**To CT1:**

**ACTION:** RAN2 kindly asks CT1 to provide feeback, if any, on the RAN2 agreed points above and provide a response to the question.

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

TSG-RAN WG2#114- e May 19th – 27th, 2020 Online meeting