**3GPP** **TSG CT WG1 Meeting #131-e C1-214938**

**Electronic meeting, 19-27 August 2021**

Title: Reply LS on Small data transmission

**Response to: LS R2-2104644/C1-214014 on Small data transmission from RAN2**

Release: Release 17

Work Item: 5GProtoc17, <NR\_SmallData\_INACTIVE-Core>

Source: CT1

To: RAN2

CC: SA2

**Contact Person:**

Name: Vivek Gupta

E-mail Address: vivek\_g\_gupta at apple dot com

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

Attachments: None

**1. Overall Description:**

CT1 thanks RAN2 for their LS on Small data transmission in C1-214014 / R2-2104644. CT1 would like to provide the following feedback on points agreed by RAN2.

a) Given the agreements from RAN2 LS that:

*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)*

Different companies in CT1 have different understanding of "*SDT is transparent to NAS layer*". There is consensus in CT1 that NAS layer is oblivious to whether pending uplink NAS signallling or data requires SDT or non-SDT DRBs when NAS requests the lower layers to transition to RRC\_CONNECTED state. CT1 understands that such determination of DRBs to use is done by access stratum. However, there was no consensus in CT1 about the nature of NAS impacts to support SDT.

A Rel-16 UE does not support data or signalling transmission while in RRC\_INACTIVE state. Hence, to support the SDT mechanism RAN2 has in mind, some companies believe there will be some NAS impacts and additional or new interactions between AS and NAS in order to send multiple UL and DL packets, while the access stratum remains in RRC\_INACTIVE state and the NAS remains in 5GMM\_CONNECTED mode with RRC inactive indication. On the other hand, some companies believe there will be no such impacts to support SDT.

CT1 would like RAN2 to also note that the NAS layer needs to transition to 5GMM-IDLE mode if UE radio capability update is needed during ongoing SDT transfer.

b) Regarding additional question from RAN2:

*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.*

CT1 would like to point out that once small data transmission is initiated the UAC parameters (access category and access identity) for subsequent UL data for non-SDT DRBs to use will be the same as those for UL data for SDT DRBs. Further, NAS is agnostic to DRBs, and as such cannot differentiate whether pending uplink data or signalling requires SDT or non-SDT DRBs. So for the use case specified above, if new UL data or NAS message becomes available for non-SDT radio bearers which are not established, the current behaviour (of NAS in 5GMM\_CONNECTED mode with inactive indication) applies, i.e. any new pending UL data associated with a PDU session with no suspended user plane resources, will require the Service Request procedure to be initiated and NAS will need to provide UAC parameters based on the reason for that Service Request.

**2. Actions:**

**To RAN2:**

**ACTION:** CT1 kindly asks RAN2 to take the above into account and provide feeback, if any.

**3. Date of Next CT1 Meetings:**

TSG-CT WG1#132-e Oct 11th – 15th, 2021 Online meeting

TSG-CT WG1#133-e Nov 11th – 19th, 2021 Online meeting