**3GPP TSG RAN WG2 #115-e draft-R2-21xxxxx**

**e-Meeting, Aug 16th – 27th, 2021**

**Title: draft-LS on agreements related to SDT**

**Response to:**

**Release: Rel-17**

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

**Source: to be RAN2**

**To: RAN1**

**Cc:**

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# 1 Overall description

RAN2 has made the following agreements as part of the discussions for SDT WI:

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| --- |
| ***Agreements for RA-SDT:*** 1. SDT related RACH resources are configured via system information, i.e., SIB1
2. At least the following parameters can be RA-SDT specific.
	* + SSB selection related parameters, i.e., rsrp-ThresholdSSB, msgA-RSRP-ThresholdSSB.
		+ Power control related parameters, i.e., preambleReceivedTargetPower/gA-PreambleReceivedTargetPower, powerRampingStep/msgA-PreamblePowerRampingStep, msg3-DeltaPreamble/msgA-DeltaPreamble.
		+ Preamble group related parameters, i.e., msg3-DeltaPreamble/msgA-DeltaPreamble, messagePowerOffsetGroupB for 2-step RA-SDT and 4-step RA-SDT.
3. For shared ROs case, all the following configurations can be allowed: (28/28)
* 4-step RA-SDT shares ROs with 4-step RA and/or 2-step RA
* 2-step RA-SDT shares ROs with 4-step RA and/or 2-step RA
* 2-step RA-SDT shares ROs with 4-step RA-SDT and/or 4-step RA and/or 2-step RA.
1. RA prioritization related parameters cannot be configured for RA-SDT, i.e., powerRampingStepHighPriority, scalingFactorBI
2. UE selects any SSBs if there is no qualified SSB for RA-SDT, like in legacy. No optimizations are considered.
3. No new timer (other than the SDT failure detection timer) is introduced to control the PDCCH monitoring during subsequent transmissions in RA-SDT
4. RA-SDT can be configured on initial BWP. FFS for non-initial BWP
5. If none of the SSBs’ RSRP is above the RSRP threshold of CG-SDT criteria in the type selection phase, UE should select RA-SDT if RA-SDT criteria is met

***Agreements for CG-SDT:*** 1. UE should release CG-SDT resource (if stored) when UE initiates RRC resume procedure from another cell which is different from the cell in which the RRCRelease is received.2. The C-RNTI previously configured in RRC\_CONNECTED state is used for UE to monitor PDCCH in CG-SDT. 3. CS-RNTI based dynamic retransmission mechanism can be reused for CG-SDT. FFS whether CS-RNTI is the same one as the one previously configured in RRC\_CONNECTED or a new CS-RNTI one is provided to the UE4. During the subsequent new CG transmission phase, for the purpose of CG resource selection, UE re-evaluates the SSB for subsequent CG transmission. FFS what happens if no SSBs are valid or if no sample is available5. From RAN2 perspective, at least the following parameters should be included in the CG-SDT configuration. FFS whether these parameters are common for multiple CG-SDT configurations or per CG-SDT configuration.* The new TA timer in RRC\_INACTIVE;
* The RSRP change threshold for TA validation mechanism in SDT (details dependent on RAN1);
* The SSB RSRP threshold for beam selection (i.e. UE selects the beam and associated CG resource for data transmission).
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RAN2 would like to ask RAN1 the following questions:

Q1: For both RA-SDT and CG-SDT, RAN2 assumes that common PUCCH resources (i.e. those that are shared with non-SDT UEs) can also be used for HARQ-ACK feedback for Msg4 /MsgB and subsequent SDT transmissions. Can RAN1 confirm this?

Q2: For RA-SDT and CG-SDT, for Msg4 /MsgB and subsequent SDT transmissions, does RAN1 think there is a need for any other PUCCH resources than the above and if needed, can RAN1 define these?

Q3: Is there any other L1 configuration needed for both RA-SDT and CG-SDT to support the subsequent data transmissions from RAN1 perspective?

In addition to the above, RAN2 discussed support of RA-SDT configuration on non-initial BWP. Some companies supported RA-SDT for non-initial BWP as this will reduce the congestion on initial BWP, whilst others expressed concerns on the complexity and paging monitoring. For this issue, RAN2 would like to ask RAN1 the following question:

Q4: Do RAN1 have any concerns to support RA-SDT on the non-initial BWP?

NOTE: It has already been agreed in RAN2 that *CG-SDT resource can be configured on either initial BWP or separate SDT BWP*, if confirmed by RAN1.

Q5: Does RAN1 think that BFD/BFR procedure is required for SDT and if needed, can RAN1 define the necessary procedure to support this?

# 2 Actions

**To RAN1**

**ACTION:** RAN2 respectfully asks RAN1 to take the above information into account in their specification work, inform RAN2 if RAN1 has any concerns with RAN2 agreements, and answer the following questions:

Q1: For both RA-SDT and CG-SDT, RAN2 assumes that common PUCCH resources (i.e. those that are shared with non-SDT UEs) can also be used for HARQ-ACK feedback for Msg4 /MsgB and subsequent SDT transmissions. Can RAN1 confirm this?

Q2: For RA-SDT and CG-SDT, for Msg4 /MsgB and subsequent SDT transmissions, does RAN1 think there is a need for any other PUCCH resources than the above and if needed, can RAN1 define these?

Q3: Is there any other L1 configuration needed for both RA-SDT and CG-SDT to support the subsequent data transmissions from RAN1 perspective?

Q4: Do RAN1 have any concerns to support RA-SDT on the non-initial BWP?

Q5: Does RAN1 think that BFD/BFR procedure is required for SDT and if needed, can RAN1 define the necessary procedure to support this?

# 3 Dates of next TSG RAN2 meeting

The dates of the next RAN2 meetings can be found at the following link:

<https://portal.3gpp.org/Home.aspx?tbid=380&SubTB=380#/>