3GPP TSG-RAN WG2 Meeting #113 electronic [R2-2101954](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101954.zip)  
Online, Jan 25 – Feb 5, 2021

Source: Session Chair (InterDigital)

Title: Report for Rel-17 Small data and URLLC/IIoT and Rel-16 NR-U, Power Savings, and 2step RACH

**Email discussions:**

* [AT113-e][500] Organizational Diana – URLLC/IIoT, Small data, NR-U, 2-step RACH, Power Savings

Scope:

* + - Share plans for the meetings and list of ongoing email discussions for the sessions related to URLLC/IIoT, Small data and NR-U, 2-step RACH, and power saving
    - Share meetings notes and agreements for review and endorsement
* [AT113-e][501][NR-U] CRs on NR-U Control Plane (Qualcomm)

Scope:

* + - Discuss submitted CRs in the CP AI. Rapporteur will do preliminary assessment on criticality and need to have the CRs and companies can provide their views.

Intended outcome:

* + - Agreeable CRs

Deadline for providing comments:

* + - Companies comments/text suggestions and on need/criticality of the CRs– Jan. 27th
    - Rapporteur to make suggestions on which CRs should be pursued further and any possible merges – Jan. 28st
    - Updated CRs (the ones agreed to be pursued) from responsible companies Jan. 29nd
* [AT113-e][502][NR-U] CRs on NR-U User Plane (Ericsson)

Scope:

* + - Discuss submitted CRs in the UP AI. Rapporteur will do preliminary assessment on criticality and need to have the CRs and companies can provide their views.

Intended outcome:

* + - Agreeable CRs

Deadline for providing comments:

* + - Companies comments/text suggestions and on need/criticality of the CRs– Jan. 27th
    - Rapporteur to make suggestions on which CRs should be pursued further and any possible merges – Jan. 28st
    - Updated CRs (the ones agreed to be pursued) from responsible companies Jan. 29nd
* [AT113-e][503][2sRA] CRs on 2sRA User Plane (ZTE)

Scope:

* + - Discuss submitted CRs in the UP AI. Rapporteur will do preliminary assessment on criticality and need to have the CRs and companies can provide their views.

Intended outcome:

* + - Agreeable CRs

Deadline for providing comments:

* + - Companies comments/text suggestions and on need/criticality of the CRs– Jan. 27th
    - Rapporteur to make suggestions on which CRs should be pursued further and any possible merges – Jan. 28st
    - Updated CRs (the ones agreed to be pursued) from responsible companies Jan. 29nd
* [AT113-e][504][2sRA] CRs on 2sRA Control Plane (Ericsson)

Scope:

* + - Discuss submitted CRs in the CP AI. Rapporteur will do preliminary assessment on criticality and need to have the CRs and companies can provide their views.

Intended outcome:

* + - Agreeable CRs

Deadline for providing comments:

* + - Companies comments/text suggestions and on need/criticality of the CRs– Jan. 27th
    - Rapporteur to make suggestions on which CRs should be pursued further and any possible merges – Jan. 28st
    - Updated CRs (the ones agreed to be pursued) from responsible companies Jan. 29nd
* [AT113-e][507][IIoT] Summary of TSN (Ericsson)

Scope:

* + - Identify set of open issues for TSN that need to be addressed based on company contributions and identify any agreeable aspects to be discussed in the first week session
    - Get company inputs on opens issues (to be kicked off after first session)

Intended outcome:

* + - Set of issues that should be discussed in the first session and any proposals that could be agreeable
    - Set of additional issues that should be addressed but with lower priority

Deadline for providing comments:

* + - Companies comments on the summary: January 25th
* [AT113-e][505][IIoT] URLLC in unlicensed (InterDigital)

Scope:

* + - Identify set of open issues for UCE that need to be addressed based on company contributions and identify any agreeable aspects to be discussed in the first week session
    - Get company inputs on opens issues (to be kicked off after first session)

Intended outcome:

* + - Set of issues that should be discussed in the first session and any proposals that could be agreeable
    - Set of additional issues that should be addressed but with lower priority

Deadline for providing comments:

* + - Companies comments on the summary: January 25th
* [AT113-e][506][IIoT] QoS RAN enhancements (Nokia)

Scope:

* + - Identify set of open issues for UCE that need to be addressed based on company contributions and identify any agreeable aspects to be discussed in the first week session
    - Get company inputs on opens issues (to be kicked off after first session)

Intended outcome:

* + - Set of issues that should be discussed in the first session and any proposals that could be agreeable
    - Set of additional issues that should be addressed but with lower priority

Deadline for providing comments:

* + - Companies comments on the summary: January 25th
* [AT113-e][508][R16-PowSav] CR [R2-2100456](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100456 .zip)on 38.331 (Vivo)

Scope:

* + - Discuss submitted CR [R2-2100456](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100456.zip), agree on which corrections are acceptable and update CR with acceptable changes only.

Intended outcome:

* + - Agreeable CRs for email approval

Deadline for providing comments:

* + - Companies comments/text suggestions and on need/criticality of the CRs– Jan. 28th
    - Updated CRs (the ones agreed to be pursued) from responsible companies Jan. 29nd
* [AT113-e][509][SData] Control Plane and CBs (ZTE)

**Scope:**

1. Further discussion on pending proposals (and those marked for CB) for email discussion R2-2101162

Tdoc summary and identification of possible proposals to agree/discuss for these topics

2. Discussion on Handling of non-SDT

When non-SDT bearers are resumed

- when SDT is initiated

- only upon RRC resume by UE

What to do when non-SDT arrive and DRBs are suspended

- trigger legacy RRC resume procedure

- introduce a MAC indication to indicate non-SDT arrival

2. Whether we use RRC Resume or new RRC message/indication of SDT?

3. How to handle RRC release for subsequent data – sending a release before SDT phase or RRCRelease at the end of the SDT phase.

**Intended outcome:**

* + - Agreeable proposals

**Deadline for providing comments:**

* + - Companies comments/inputs – Feb. 1st
    - Proposals by rapporteur – Feb. 2nd

# 6 Rel-16 NR Work Items

Essential corrections. While high maintenance intensity is expected, Rel-16 corrections are treated separately per WI.

Tdoc Limitation: 40 tdocs in total for all sub agenda items, or the restriction for each sub-AI, whichever is more restrictive.

## 6.3 NR-based Access to Unlicensed Spectrum

(NR\_unlic-Core; leading WG: RAN1; REL-16; started: Dec 18; Closed June 20; WID: RP-192926). Documents in this agenda item will be handled in a break out session.).

Tdoc Limitation: 4 tdocs. See also tdoc limitation for Agenda Item 6

### 6.3.1 General and Stage-2 Corrections

Including incoming LSs, Wi or TS rapporteur inputs, etc.

[R2-2100006](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100006.zip) Reply LS on UE capability on wideband carrier operation for NR-U (R1-2009385; contact: MediaTek) RAN1 LS in Rel-16 NR\_unlic-Core To:RAN4 Cc:RAN2

[R2-2100228](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100228.zip) Discussion on differentiation of Rel-16 features for NR operation in shared spectrum Huawei, HiSilicon discussion Rel-16 NR\_unlic-Core

### 6.3.2 User plane

R2-2102077 Report on [AT113-e][502][NR-U] CRs on NR-U User Plane (Ericsson)

[R2-2100217](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100217.zip) Handling of deprioritized CG PDU when both cg-RetransmissionTimer and lch-basedPrioritization are configured CATT CR Rel-16 38.321 16.3.0 1008 - F NR\_unlic-Core

=> The CR is not pursued

[R2-2101669](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101669.zip) Corrections on the start of the configuredGrantTimer Beijing Xiaomi Mobile Software CR Rel-16 38.321 16.3.0 1044 - F NR\_unlic-Core

=> The CR is not pursued

### 6.3.3 Control plane

R2-2102076 Report of [AT113-e][501][NR-U] CRs on NR-U Control Plane Qualcomm

[R2-2100183](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100183.zip) Correction on RSSI and channel occupancy measurements Samsung Electronics Co., Ltd CR Rel-16 38.331 16.3.1 2306 - F NR\_unlic-Core

=> Companies agree with the problem and that it needs to be fixed

*Discussion: It can be further discussed online whether to use the alternative location suggested by Ericsson*

[R2-2100870](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100870.zip) Discussion on NR-U RSSI/CO measurement Apple, xiaomi discussion Rel-16 NR\_unlic-Core

=> No changes to NR-U RSSI reporting procedures are introduced

=> **Discuss**: A new UE capability in LTE RRC for NR-U RSSI reporting is not needed in Rel-16. This can be further discussed online.

[R2-2100871](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100871.zip) Clarification on NR-U RSSI measurement procedure Apple CR Rel-16 38.331 16.3.1 2360 - F NR\_unlic-Core

=> The CR is agreed

[R2-2101163](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101163.zip) RRC Corrections for NR-U (Rel-16) ZTE Corporation, Sanechips CR Rel-16 38.331 16.3.1 2387 - F NR\_unlic-Core

=> The CR is agreed

[R2-2101164](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101164.zip) Corrections to UE capability for NR-U (Rel-16) ZTE Corporation, Sanechips CR Rel-16 38.306 16.3.0 0502 - F NR\_unlic-Core

=> Update the CR with following modifications:

1) Use “DRS window” instead of “discovery burst window”

2) Change to “… DCI 2\_0 to read available RB set indicator”

=> The CR is revised in R2-2102082

R2-2102082 Corrections to UE capability for NR-U (Rel-16) ZTE Corporation, Sanechips CR Rel-16 38.306 16.3.0 0502 - F NR\_unlic-Core

[R2-2101269](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101269.zip) Correction to search space switch configuration Ericsson CR Rel-16 38.331 16.3.1 2396 - F NR\_unlic-Core

=> The CR is not pursued

[R2-2101491](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101491.zip) Correction on description of measResultForRSSI and of conditional presence SharedSpectrum Huawei, HiSilicon CR Rel-16 38.331 16.3.1 2415 - F NR\_unlic-Core

=> The CR is not pursued

## 6.9 UE Power Saving in NR

(NR\_UE\_pow\_sav-Core; leading WG: RAN1; REL-16; started: Mar 19; Completed Jun 20; WID: RP-200494).

Tdoc Limitation: 4 tdocs. See also tdoc limitation for Agenda Item 6

### 6.9.1 General and Stage-2 corrections

Including incoming LSs, rapporteur inputs, etc

### 6.9.2 User plane Corrections

### 6.9.3 Control plane Corrections

[R2-2100456](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100456.zip) CR on 38.331 for power saving vivo CR Rel-16 38.331 16.3.1 2325 - F NR\_UE\_pow\_sav-Core

=> The first change in R2-2100456 is not needed.

=> The second change in R2-2100456 is revised as: “…the UE shall not relax measurements on high priority frequencies beyond “Thigher\_priority\_search” unless both low mobility and not at cell edge criteria are fulfilled (see TS 38.133 [14], clause 4.2.2.7 and TS 38.304 [20], clause 5.2.4.9.0)”.

=> The third change in R2-2100456 is agreed.

=> The CR is revised in R2-2102083.

R2-2102083 CR on 38.331 for power saving vivo CR Rel-16 38.331 16.3.1 2325 - F NR\_UE\_pow\_sav-Core

## 6.11 2-step RACH for NR

(NR\_2step\_RACH-Core; leading WG: RAN1; REL-16; started: Dec 18; Completed: June 20; WID: RP-200085).

Tdoc Limitation: 4 tdocs, See also tdoc limitation for Agenda Item 6

### 6.11.1 General and Stage-2 Corrections

[R2-2101813](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101813.zip) Correction on the allowed uplink transmission without TA Huawei, HiSilicon, Nokia (Rapporteur) CR Rel-16 38.300 16.4.0 0343 - F NR\_2step\_RACH-Core

=> The CR is agreed

### 6.11.2 User plane corrections

R2-2102078 Summary of [AT113-e][503][2sRA] CRs on 2sRA User Plane and stage-2 (ZTE) ZTE

[R2-2100349](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100349.zip) Correction on Usage of RA-RNTI in 2-step RA procedure vivo CR Rel-16 38.321 16.3.0 1015 - F NR\_2step\_RACH-Core

=> The CR is not pursued

[R2-2100350](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100350.zip) Correction on UL-SCH resource in 2-step RA procedure vivo CR Rel-16 38.321 16.3.0 1016 - F NR\_2step\_RACH-Core

=> The CR is not pursued

[R2-2101512](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101512.zip) 38321 CR Correction on available UL-SCH resource LG Electronics Inc. CR Rel-16 38.321 16.3.0 1037 - F NR\_2step\_RACH-Core

=> The CR is updated with LG to provide an updated CR with the modification as below (for Note 2 in 5.4.5 and Note 1 5.22.1.6)

=> The CR is revised in R2-2102079

R2-2102079 38321 CR Correction on available UL-SCH resource LG Electronics Inc. CR Rel-16 38.321 16.3.0 1037 - F NR\_2step\_RACH-Core

[R2-2101811](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101811.zip) Correction on BSR for two-step RA Huawei, HiSilicon CR Rel-16 38.321 16.3.0 0981 1 F NR\_2step\_RACH-Core [R2-2010402](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2010402.zip)

=> The CR is not pursued

**Discussion related to 350, 512, 811**

=> RAN2 aims to clarify the Note 2 in section 5.4.5 and Note 1 in 5.22.1.6 to capture the missing scenarios

[R2-2101838](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101838.zip) Conditions to stop an ongoing RA procedure Asia Pacific Telecom, FGI CR Rel-16 38.321 16.3.0 1054 - F NR\_2step\_RACH-Core Withdrawn

=> The CR is not pursued

[R2-2101857](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101857.zip) Conditions to stop an ongoing RA procedure Asia Pacific Telecom, FGI CR Rel-16 38.321 16.3.0 1055 - F NR\_2step\_RACH-Core

=> The CR is not pursued

### 6.11.3 Control plane corrections

R2-2102080 Report of [AT113-e][504][2sRA] CRs on 2sRA Control Plane (Ericsson) Ericsson

[R2-2101059](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101059.zip) Corrections to conditions for 2-step RA Lenovo, Motorola Mobility CR Rel-16 38.331 16.3.1 2381 - F NR\_2step\_RACH-Core

=> Merge with [R2-2101812](file:///C:\\Users\\panidx\\Documents\\3GPP%20RAN\\113e\\Docs\\R2-2101812.zip)

[R2-2101165](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101165.zip) Correction for 2-step CFRA ZTE Corporation, Sanechips CR Rel-16 38.331 16.3.1 2388 - F NR\_2step\_RACH-Core

=> The CR is not according to the common understanding that CFRA 2-Step RA only applies to reconfiguration with sync (HO)

=> Discuss if a clarification in 38.331 is useful to restrict CFRA 2-Step RA to PCell change?

[R2-2101812](file:///C:\\Users\\panidx\\Documents\\3GPP%20RAN\\113e\\Docs\\R2-2101812.zip) Correction on C-RNTI replacement for 2-step RA Huawei, HiSilicon CR Rel-16 38.331 16.3.1 2440 - F NR\_2step\_RACH-Core

=> A correction is needed in Rel-16 to avoid Integrity verification failure at the reception of successRAR

=> replace the C-RNTI with the C-RNTI used in the cell the UE has received the *RRCRelease* message (see TS 38.321 [3])

=> The CR is revised in R2-2102081 and includes the corrections in [R2-2101059](file:///C:\\Users\\panidx\\Documents\\3GPP%20RAN\\113e\\Docs\\R2-2101059.zip)

R2-2102081 Correction on C-RNTI replacement for 2-step RA Huawei, HiSilicon, Lenovo? CR Rel-16 38.331 16.3.1 2440 - F NR\_2step\_RACH-Core

# 8 Rel-17 NR Work Items

## 8.5 NR IIoT URLLC

(NR\_IIOT\_URLLC\_enh-Core; leading WG: RAN2; REL-17; WID: RP-201310)

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

Email max expectation: 2-3 threads

Focus to clarify the scope, understand the dependencies to other groups, get proposals on the table.

### 8.5.1 Organizational

Rapporteur input

[R2-2100043](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100043.zip) Reply LS on Use of Survival Time for Deterministic Applications in 5GS (R3-207211; contact: Nokia) RAN3 LS in Rel-17 FS\_IIoT To:SA2, RAN2 Cc:SA1

=> Noted

[R2-2100066](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100066.zip) LS on Clarification on URLLC QoS Monitoring (S2-2007825; contact: Huawei) SA2 LS in Rel-16 5G\_URLLC To:RAN3, CT4 Cc:SA5, RAN2

=> Noted

[R2-2100715](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100715.zip) Revised Rel-17 NR IIoT/URLLC Work Plan Nokia Work Plan Rel-17 NR\_IIOT\_URLLC\_enh

=> Noted

### 8.5.2 Enhancements for support of time synchronization

Including requirements and scope.

[R2-2102071](C:\\Users\\panidx\\Documents\\3GPP RAN\\113e\\Docs\\R2-2102071.zip) Summary on Enhancements for support of time synchronization (8.5.2) Ericsson

Mobility issue

*Proposal 1 RAN2 to discuss if there is a UE clock drift issue.*

-

*Proposal 2 RAN2 to discuss if the source and the target gNB are tightly synchronized to the same master clock.*

- ZTE thinks that there is time error between source and target gNB. Vivo thinks that there is no issue to resolve. Intel thinks that there is no need to reopen this discussion in Rel-17 and there is no clock drift issue and source and target gNB are tightly synchronized.

- Nokia thinks that for mobility and HO interruption issue the clock drift doesn’t create any problems, but for other cases we may need to discuss.

- Mediatek agrees that there is no clock drift issue and they are non-comparable with the delays related to HO. The delay has to be more than 1s to notice anything. It is clear from SA2 that the master clock is distributed to source and target. Sequans agrees with Mediatek. ZTE indicates that it could be a different clock. Ericsson thinks it would be useless to have different clocks and it is a fundamental assumption. CMCC agrees with Ericsson for the scenarios.

- Samsung thinks that even if there is a clock drift there should be no spec impact.

- Samsung thinks that we may need some enhancements for 2.

- Qualcomm thinks that similar to Rel-16 there is no issue and for proposal 2 we will have a master clock and they should be tightly synchronized. Interdigital agrees with QC.

- Huawei explains that there is no issue as we discussed this issue with PDC.

- CATT thinks that the conclusion from Rel-16 hasn’t changed even if the requirements are a little tighter. The gNBs have to be under the same master clock and this was taken into account in our assumption in the last meeting.

**Assumptions:**

- There is no UE clock drift issue to be addressed

- The source and target gNB are tightly synchronized to the same master clock within the budget and there is no need to optimize anything for HO.

**Agreements**

- gPTP message interruption during mobility is not considered in the Rel-17 IIoT WI (i.e. no further specification impact are considered)

- RAN2 to confirm which PDC option to choose is up-to RAN1 to decide

***These proposals don’t need to be move to offline email discussion***

*Proposal 3 RAN2 to discuss the need to transfer reference time between gNBs.*

*Proposal 4 RAN2 to discuss the need for a UE to indicate the reference time delivery periodicity to the gNB*

*Proposal 5 RAN2 to discuss if it is beneficial to transfer to the target gNB from the source gNB that the UE needs reference time delivery.*

*Proposal 6 RAN2 to confirm that there is no RAN2 spec impacts to support the transfer of UE’s need for reference time between gNBs.*

RAN2 can confirm online if the below proposal can be agreed; otherwise, it is moved to the email discussion.

Proposal 7 gPTP message interruption during mobility is not considered in the Rel-17 IIoT WI.

Propagation delay compensation (PDC)

In rapporteur’s understanding, the below proposal is agreed in the last meeting. However, there are numerous papers submitted, and so rapporteur propose to confirm this.

Proposal 8 RAN2 to confirm which PDC option to choose is up-to RAN1 to decide.

This will be discussed in long email discussion after RAN1 progresses

Rapporteur then proposes to discuss issues that are independent of the PDC option. The proposal 7 is a baseline and should be agreeable, while the proposal 8 is to confirm that the discussion on the details are postponed till PDC option is chosen.

Proposal 9 gNB can inform UEs of whether the to-be-adopted PDC option is used or not.

Proposal 10 After PDC option is chosen, RAN2 to further discuss the details of the indication and other impacts.

Rapporteur proposes to discuss the proposal 9 in the email discussion.

Proposal 11 For UE-side PDC, RAN2 to collect views and down-select the below options:

 gNB enable/disable UE-side PDC

 UE request a PD estimation update

 UE autonomously conduct PDC if a network-configured threshold is met

 Other options?

Others

Lastly, rapporteur proposes to discuss the below proposal in the email discussion, as it is the first time the issue was identified. It is good to collect companies views first

Proposal 12 RAN2 to further discuss the need of gNB knowing sync requirement of a UE.

[R2-2100215](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100215.zip) Discussion on the time synchronisation enhancements Huawei, HiSilicon discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100221](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100221.zip) Discussion on Time Synchronization in Rel-17 CATT discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2100232](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100232.zip) Propagation Delay Compensation Enhancements Ericsson discussion Rel-17

[R2-2100267](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100267.zip) Propagation Delay Compensation for TSN QUALCOMM Europe Inc. - Italy discussion Rel-17

[R2-2100327](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100327.zip) Further considerations on time synchronization and PDC ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd discussion NR\_IIOT\_URLLC\_enh-Core [R2-2009060](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2009060.zip)

[R2-2100417](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100417.zip) Remaining aspect to support time synchronization Fujitsu discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core [R2-2009130](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2009130.zip)

[R2-2100425](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100425.zip) Some considerations on propagation delay compensation China Telecom discussion

[R2-2100615](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100615.zip) RAN Enhancements for Support of Timing Synchronization Intel Corporation discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100716](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100716.zip) Time Synchronization Signalling and Mobility Impact Analysis Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2100781](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100781.zip) Discussion on uplink time synchronization for TSN NTT DOCOMO, INC. discussion Rel-17 [R2-2010532](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2010532.zip)

[R2-2100829](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100829.zip) Discussion on time sync maintenance during mobility vivo discussion

[R2-2100844](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100844.zip) Consideration of TSN time synchronization in handover scenario OPPO discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100941](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100941.zip) Propagation Delay Compensation for TSN CANON Research Centre France discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2101119](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101119.zip) Discussion on enabling UE side propagation delay compensation Lenovo, Motorola Mobility discussion Rel-17

[R2-2101322](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101322.zip) On propagation delay compensation MediaTek Inc. discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2101490](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101490.zip) Mobility aspects of time synchronization Sequans Communications discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core [R2-2010173](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2010173.zip)

[R2-2101666](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101666.zip) Propagation delay compensation and synchronization Samsung discussion Rel-17

[R2-2101671](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101671.zip) Mobility issue on time synchronization Beijing Xiaomi Mobile Software discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2101721](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101721.zip) Enhancements for support of time synchronization for TSN CMCC discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2101809](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101809.zip) Enhancements for support of time synchronization and PDC TCL Communication Ltd. discussion Rel-17

[R2-2101862](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101862.zip) Discussion on enhancements for support of time synchronization LG Electronics Inc. discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

### 8.5.3 Uplink enhancements for URLLC in unlicensed controlled environments

RAN2 aspects related to URLLC in unlicensed controlled environments. Initial discussion on potential impacts, including requirements and scope

[R2-2102072](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2102072.zip) Summary of URLLC over unlicensed controlled environment InterDigital

=> Noted

R2-2102073 Offline discussion on URLLC over unlicensed controlled environment [RAN2#113-e][505] InterDigital

[R2-2100214](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100214.zip) Uplink enhancements for URLLC in UCE Huawei, HiSilicon discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100222](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100222.zip) Analysis on IIoT in Unlicensed Spectrum CATT discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2100233](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100233.zip) Harmonizing UL CG enhancements in NR-U and URLLC Ericsson discussion Rel-17

[R2-2100268](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100268.zip) CG Harmonization for Unlicensed Controlled Environment QUALCOMM Europe Inc. - Italy discussion Rel-17

[R2-2100717](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100717.zip) Support of URLLC in Unlicensed Spectrum Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2100758](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100758.zip) Transmission Handling in UCE Sharp discussion

[R2-2100759](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100759.zip) Autonomous transmission/Retransmission in Unlicensed Controlled Environments Sharp discussion

[R2-2100830](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100830.zip) Simultaneous configuration of LCH based prioritization and CGRT vivo discussion

[R2-2100891](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100891.zip) Consideration on URLLC over NR-U OPPO discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100904](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100904.zip) Considerations in unlicensed URLLC Sony discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core Withdrawn

[R2-2100905](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100905.zip) Prioritization of UL transmissions in unlicensed URLLC Sony discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100920](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100920.zip) CG Harmonization for NR-U and IIoT/URLLC in Unlicensed Controlled Environments III discussion NR\_IIOT\_URLLC\_enh

[R2-2100921](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100921.zip) Enhancements for URLLC in unlicensed controlled environments Lenovo, Motorola Mobility discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2101133](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101133.zip) Enhancements for URLLC in unlicensed controlled environments Lenovo, Motorola Mobility discussion Rel-17 Late

=> Withdrawn

[R2-2101321](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101321.zip) Remaining issues on configured grant harmonization MediaTek Inc. discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core Late

[R2-2101508](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101508.zip) IIoT operation in unlicensed controlled environments InterDigital discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2101520](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101520.zip) IIOT CG operation on shared spectrum LG Electronics UK discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2101531](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101531.zip) Considerations on UL Enhancement on the shared spectrum Channel ZTE Corporation, Sanechips discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2101614](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101614.zip) Discussion on uplink enhancements for URLLC in unlicensed controlled environments CMCC discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2101667](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101667.zip) LCH based Prioritization in UCE Samsung discussion Rel-17

[R2-2101672](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101672.zip) LBT failure and LCH based priority Beijing Xiaomi Mobile Software discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2101757](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101757.zip) Uplink enhancements for URLLC in unlicensed controlled environments Intel Corporation discussion NR\_IIOT\_URLLC\_enh-Core

### 8.5.4 RAN enhancements based on new QoS

RAN enhancements based on new QoS related parameters if any, e.g. survival time, burst spread, decided in SA2. [RAN2, RAN3]

[R2-2102254](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2102254.zip) Summary of Agenda Item 8.5.4: RAN enhancements based on new QoS Nokia

*Proposal 1a: RAN2 confirms communication service availability is not needed on top of survival time.*

- Qualcomm doesn’t agree. Nokia thinks that no matter what CSA is the network should do its best from RAN perspective to not violate survival time. Ericsson also doesn’t think we need it and survival time is optional. CMCC also doesn’t think we need this parameter and doesn’t help the RAN side to perform scheduling. Lenovo, Samsung also thinks like Nokia. Huawei has some sympathy with Qualcomm so the network should know how hard it should it try.

- Qualcomm thinks that it is impossible for the network to meet survival time but how hard should the network try. If we want to replace wireline we need to be very reliable and we need all the possible mechanisms.

- Intel thinks that as long as there is no new requirements from SA1/SA2 we don’t need to define anything new.

*Proposal 1b: RAN2 further discusses whether Burst Ending Time should be added as a new QoS parameter.*

*Proposal 1c: RAN2 does not consider burst spread until SA2 provides further clarification.*

*Proposal 1d: RAN2 further discusses whether QoS relating to service reliability is needed.*

*Proposal 2b: RAN2 may further discuss whether survival time should be considered in UCE.*

- Nokia thinks that this should be de-prioritized. CATT thinks that the design criteria shouldn’t be for UCE, but for CE. InterDigital thinks it should be configured but we don’t need to consider optimizations.

*=>* Noted

**Agreements**

- Assumption: communication service availability is not needed on top of survival time [confirm over email and clarify what CSA is]

*-* RAN2 confirms that specification enhancement for survival time support may only needed for uplink. Downlink is addressed by implementation and no specification impacts.

*-* Support for survival time in UCE is up to network configuration.

R2-2102074 Offline on RAN enhancements QoS [AT113-e][506] Nokia

[R2-2100216](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100216.zip) RAN enhancements based on new QoS related parameters Huawei, HiSilicon discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100223](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100223.zip) Discussion on Survival Time CATT discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2100234](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100234.zip) RAN enhancements based on new QoS related parameters Ericsson discussion Rel-17

[R2-2100269](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100269.zip) RAN Enhancement to support new QoS QUALCOMM Europe Inc. - Italy discussion Rel-17

[R2-2100328](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100328.zip) Further considerations on new QoS ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core [R2-2009062](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2009062.zip)

[R2-2100418](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100418.zip) Topics on new QoS handling Fujitsu discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100449](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100449.zip) Discussion on RAN enhancements based on Survival Time III discussion Rel-17 NR\_IIOT\_URLLC\_enh [R2-2010438](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2010438.zip)

[R2-2100614](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100614.zip) Support for Survival Time and Burst Spread Intel Corporation discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100718](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100718.zip) Views on RAN Enhancement for New QoS Parameters Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2100831](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100831.zip) Disucussion on RAN enhancement to support survival time vivo discussion

[R2-2100856](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100856.zip) Scheduling Assistance Information for support of new QoS Apple discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100857](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100857.zip) Reliability enhancements for CG/SPS Apple discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100892](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100892.zip) RAN enhancement based on new QoS OPPO discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2100922](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100922.zip) Discussion on the support of survival time Lenovo, Motorola Mobility discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2101066](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101066.zip) Open issues with survival time and proposal for way forward Samsung Electronics GmbH discussion

[R2-2101134](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101134.zip) Discuss on the mechanism to guarantee the survival time Lenovo, Motorola Mobility discussion Rel-17 Late

=> Withdrawn

[R2-2101509](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101509.zip) Enhancements based on new QoS requirements InterDigital discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2101521](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101521.zip) Implication of survival time LG Electronics UK discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2101615](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101615.zip) Discussion on the support of new QoS parameters in RAN CMCC discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2101673](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101673.zip) RAN impacts of the survival time Beijing Xiaomi Mobile Software discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

## 8.6 Small Data enhancements

(NR\_SmallData\_INACTIVE-Core; leading WG: RAN2; REL-17; WID: RP-201305)

Time budget: 1.5 TU

Tdoc Limitation: 4 tdocs

Email max expectation: 3 threads

### 8.6.1 Organizational

In coming LSs, rapporteur input for email discussions summaires etc (tdocs in this don’t count towards tdoc limit).

[R2-2100930](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100930.zip) Report from email discussion [POST112-e][550][SDT] Further details of CG aspects Lenovo, Motorola Mobility report Rel-17 NR\_SmallData\_INACTIVE-Core

*Following proposals are potentially easily agreeable (clear majority view):*

*Proposal 1: CG-SDT resource configuration is provided to UEs in RRC\_Connected only within the RRCRelease message, i.e. no need to also include it in RRCReconfiguration message (23/26).*

- Intel thinks that the importance is to be able to provide delta configuration.

- Vivo would like to provide a CG to the INACTIVE UE.

*Proposal 2: CG-PUSCH resources can be separately configured for NUL and SUL (26/26)*

*­*- Lenovo indicates that we would need to discuss whether we can have it in both. Nokia explains that in the Rel-16 it was agreed to have both and there are some CRs to fix the misalignments with stage 2, which already aligns. Ericsson thinks we still need to discuss after we see how it is fix. ZTE thinks that there is a use case to allow in both as the network doesn’t know since the UE is in INACTIVE

*Proposal 3: RRCRelease message (or similar) is used to reconfigure or release the CG-SDT resources while UE is in RRC\_INACTIVE (26/26)*

*Proposal 4: For CG-SDT the subsequent data transmission can use the CG resource or DG (i.e dynamic grant addressed to UE’s C-RNTI). Details on C-RNTI, can be the same as the previous C-RNTI or may be configured explicitly by the network can be discussed in stage 3. (24/26)*

*Proposal 5: TAT-SDT is started upon receiving the TAT-SDT configuration from gNB, i.e. RRCrelease message, and can be (re)started upon reception of TA command. Details of the UL timing maintenance procedure, e.g. TA handling for contention-based RACH-SDT, can be addressed in stage 3. (24/26)*

­- Vivo asks if TAC refers to MAC CE or RAR. Lenovo explains that it is both and if the timer is already started, we can handle it like in connected. This is why we have the details are FFS.

- Xiaomi thinks we need to two timers. Lenovo is not sure why we need two timers and we haven’t discussed this before.

*Proposal 6: Introduce a TA validation mechanism for SDT based on RSRP change, i.e. RSRP-based threshold(s) are configured. Details of the TA validation procedure can be further discussed, e.g. RSRP-based threshold are applied to SS-RSRP. (20/26)*

- Nokia thinks we need to ask RAN1 if RSRP changes the TA changes before we agree. LG would like to link the RSRP to the SDT validation rather than TA validation. The concerns is whether the UE would release the CG if TA and if we release the CG that is not efficient. We should release the CG only if the TA really expires.

- Huawei thinks this is reasonable and it is legacy design.

- Ericson thinks can confirm and we can ask RAN1

=> Noted

**Agreements**

1. CG-SDT resource configuration is provided to UEs in RRC\_Connected only within the RRCRelease message, i.e. no need to also include it in RRCReconfiguration message
2. CG-PUSCH resources can be separately configured for NUL and SUL. FFS if we allow them at the same time. This depends on the alignments CRs for Rel-16.
3. RRCRelease message is used to reconfigure or release the CG-SDT resources while UE is in RRC\_INACTIVE
4. For CG-SDT the subsequent data transmission can use the CG resource or DG (i.e dynamic grant addressed to UE’s C-RNTI). Details on C-RNTI, can be the same as the previous C-RNTI or may be configured explicitly by the network can be discussed in stage 3
5. TAT-SDT is started upon receiving the TAT-SDT configuration from gNB, i.e. RRCrelease message, and can be (re)started upon reception of TA command.
6. From RAN2 point of view, assume similar to PUR, that we introduce a TA validation mechanism for SDT based on RSRP change, i.e. RSRP-based threshold(s) are configured. Ask RAN1 to confirm. FFS on how to handle CG configuration when TA expires or when is invalid due to RSRP threshold. Details of the TA validation procedure can be further discussed.
7. As a baseline assumption, it’s a network configuration issue whether to support multiple CG-SDT configurations per carrier in RRC\_INACTIVE (i.e. we will not restrict network configuration for now).
8. FFS Discuss further in stage 3 how to specify the agreement that CG-SDT resources are only valid in one cell (i.e. cell in which RRCRelease is received)
9. UE releases CG-SDT resources when TAT expires in RRC\_Inactive state

*Further discussion is required for the following proposals:*

*Proposal 7: It’s a network configuration issue whether to support multiple CG-SDT configurations per carrier in RRC\_INACTIVE.*

- vivo thinks that a single CG-SDT is sufficient

- Xiaomi thinks we need multiple CGs for different traffic patterns.

- Nokia thinks that we should first discuss functionality. Samsung thinks that for multiple beam we will need to wait for RAN1 and service we don’t need it. Lenovo doesn’t think this is really needed but it is network configuration whether to configure restriction.

*Proposal 8: Discuss further in stage 3 how to specify the agreement that CG-SDT resources are only valid in one cell (i.e. cell in which RRCRelease is received)*

*Proposal 9: UE releases CG-SDT resources when it has no valid TA in RRC\_Inactive state, e.g. expiry of TAT-SDT (13/26)*

*UE releases CG-SDT resources when TAT expires in RRC\_Inactive state*

- Vivo thinks we can reuse

- Qualcomm, Fujitsu thinks we can store the CG resource and not release. Huawei thinks that when the TA expires the CG can be reused when it gets a new TA. We should align that the UE release the CG occasion. Xiaomi agrees.

- Ericsson thinks that the UE is forced to do RA and it can get a CG configuration anyways. Nokia and ZTE agrees with Ericsson.

- LG, Lenovo, CATT, Sony and Samsung agrees with proposal.

- ZTE thinks releasing the config is the simplest and it is important for UE to no use it automatically upon TA being expired.

- Intel is fine with the proposal and perhaps it is not a big deal as the network can confirm or delete in the response.

- Apple thinks that we should align with TEI.

*Proposal 12: RAN2 to discuss further whether the BWP associated with CG-SDT resources can be configurable, e.g. UE specific dedicated UL BWP (14/25)*

*Proposal 13: In case Option 2 is supported, UL BWP associated with the CG-SDT resources is signalled within in the RRCRelease message. (19/20)*

*Proposal 10: Further discuss whether to support a UE request mechanism for CG-SDT resources.*

*Proposal 11: Further discuss the support of an implicit CG-SDT resource release mechanism.*

[R2-2101162](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101162.zip) Email discussion summary #551: Common aspects between CG and RACH ZTE Corporation, Sanechips report

*Proposal 1: For RA-SDT, up to two preamble groups (corresponding to two different payload sizes for MSGA/MSG3) may be configured by the network (22/29)*

­- Huawei thinks that this is not flexible enough, however more groups are not desired and we would like to use other mechanism to allow flexible TBS is desirable. LG agrees we should allow flexibility but this is small data so we should keep it simple.

- ZTE is concerned that we don’t have RAN1 TUs so we should be careful.

- Sony thinks that we should improve spectral efficiency.

*Proposal 3: Upon initiating SDT procedure the UE performs carrier selection as per legacy procedure (29/29)*

- Samsung asks if the assumption is that you can SDT in both. If SDT is there in only one, what happens.

*Proposal 4: Upon initiating SDT, after the carrier selection, if valid CG-SDT resource exists, then CG-SDT is chosen, otherwise UE proceeds to RA-SDT procedure (29/29)*

*Proposal 5: If RACH procedure is initiated for SDT (i.e. RA-SDT initiated), the UE first performs RACH type selection as in legacy (i.e. Rel-16) (27/29)*

Not discussed

*Proposal 2: For SDT DRBs, if further data arrives during the SDT phase, then BSR may be triggered according to existing triggering conditions (i.e. no new BSR triggers are necessary for this)*

NOTES Diana: non-SDT DRBs discussed with papers

*Proposal added to be discussed before proposal 6: Proposal x: is RSRP threshold is used to select between SDT and non-SDT RA procedure (RRC level check?)*

Proposal 6: Once RA-SDT is initiated, after selecting the RACH type, the UE uses the RACH resources configured for SDT to perform random access (i.e. no further RSRP threshold is used for SDT vs non-SDT selection at this stage) – (19/29)

**Agreements**

1 For RA-SDT, up to two preamble groups (corresponding to two different payload sizes for MSGA/MSG3) may be configured by the network

*2 [CB]* UE performs carrier selection as per legacy procedure and then the UE determines whether SDT can be initiated.

*3 [CB]* Upon initiating SDT, after the carrier selection, if valid CG-SDT resource exists, then CG-SDT is chosen, otherwise UE proceeds to RA-SDT procedure.

*4* If RACH procedure is initiated for SDT (i.e. RA-SDT initiated), the UE first performs RACH type selection as specified in MAC (i.e. Rel-16). FFS whether threshold is SDT specific or not

R2-2102075 Report of offline discussion on CBs and control plane issues [509]

[CB] LS to RAN1 – ZTE

### 8.6.2 User plane common aspects

Overall user plane procedure for SDT (including triggering and thresholds). Handling of data arrival for other DRBs. Suppression of PDCP status report, any other user aspects included in [POST112-e][551] which cannot be concluded as part of the email

[R2-2100139](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100139.zip) Discussion on User Plane Aspect of Small Data Transmission vivo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

Proposal 11: In NR SDT, the UE does not expect to be scheduled a DL UP data without integrity protection before scheduling for network verification information

[R2-2100146](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100146.zip) User Plane Common Aspects of RACH and CG based SDT Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100294](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100294.zip) User plane common aspects of SDT CATT discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100365](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100365.zip) Common User plane aspects for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100419](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100419.zip) Identified issue in [Post111-e][926]: CA and PDCP CA duplication Fujitsu discussion Rel-17 NR\_SmallData\_INACTIVE-Core [R2-2009132](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2009132.zip)

[R2-2100749](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100749.zip) Handling of new arriving data during SDT NEC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101136](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101136.zip) The UP common issues for small data transmissions Lenovo, Motorola Mobility discussion Rel-17

[R2-2101145](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101145.zip) Handling of non-SDT DRB MediaTek Inc. discussion

[R2-2101160](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101160.zip) User plane common aspects of SDT ZTE Corporation, Sanechips discussion

[R2-2101176](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101176.zip) Common aspects for SDT Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101183](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101183.zip) User plane common aspects for SDT Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101203](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101203.zip) User Plane common aspects Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101221](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101221.zip) Remaining issues on user plane aspects of NR small data transmission Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101370](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101370.zip) Non-SDB handling during the SDT procedure Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101674](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101674.zip) Collision between SDT and RACH Beijing Xiaomi Mobile Software discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101750](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101750.zip) Handling non-SDT data arrival during subsequent SDT ASUSTeK discussion Rel-17 NR\_SmallData\_INACTIVE-Core

### 8.6.3 Control plane common aspects

Cell reselection and failure handling, handling of subsequent data transmissins (including when to send RRCRelease, how to indicate presence of subsequent data, etc) and any other control plane aspects included in [POST112-e][551] which cannot be concluded as part of the email

How to handle RRC release

Handling of T319

Cell reselection

[R2-2101311](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101311.zip) SDT control plane aspects Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE

Proposal 1: RRC Resume Request (Msg3/MsgA) is used as a baseline for SDT. New RRC message can be considered if seen beneficial.

Proposal 2: RRC Release message can be used as Msg4 / MsgB for SDT

Proposal 3: Msg4 / MsgB can multiplex a ciphered downlink data with the RRC Release message.

Proposal 4: Subsequent UL/DL data transfer can be completed before the network responses with RRC message to RRC Resume Request including small data

[R2-2100147](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100147.zip) Control Plane Common Aspects of RACH and CG based SDT Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

*Proposal 1: In RRC based SDT, discuss and agree on one of the following:*

*Option 1: RRCResumeRequest/RRCResumeRequest1 message is transmitted in Msg3/MsgA/CG.*

*Option 2: RRCResumeRequestSDT/RRCResumeRequest1SDT messages are defined for RRC based SDT.*

*- The RRCResumeRequestSDT includes Short Resume Identity and resumeMAC-I. Short Resume Identity is optional and is included only for RACH based SDT.*

*- The RRCResumeRequest1SDT includes Long Resume Identity and resumeMAC-I.*

*- RRCResumeRequestSDT is transmitted in Msg3/MsgA/CG*

*- RRCResumeRequest1SDT is transmitted in Msg3/MsgA*

[R2-2100139](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100139.zip) Discussion on User Plane Aspect of Small Data Transmission vivo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

*Proposal 11: In NR SDT, the UE does not expect to be scheduled a DL UP data without integrity protection before scheduling for network verification information*

Handling of non-SDT data arrival

[R2-2101311](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101311.zip) Proposal 5: If data becomes available for non-SDT DRBs during SDT procedure the SDT procedure shall be aborted and normal RRC Resume shall be triggered

[R2-2100282](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100282.zip) Discussion on SDT UP issues OPPO discussion Rel-17 NR\_SmallData\_INACTIVE-Core

*Proposal 4 SDT DRBs are resumed upon the initiation of SDT. Non-SDT DRBs are resumed upon the reception of RRCResume by UE.*

*Proposal 5 To handle the available non-SDT data during an SDT procedure, an assistance information can be included in one of UL SDT to inform the network of the non-SDT data arrival. The assistance information can be a new MAC CE, which is generated by the indication from upper layer.*

***Discussion on whether new RRC message or SDT indication is needed***

***Discussion on Handling of non-SDT***

*- when non-SDT bearers are resumed*

*1. when SDT is initiated*

*2. only upon RRC resume by UE*

*- What to do when non-SDT arrive and DRBs are suspended*

*1. trigger legacy RRC resume procedure*

*2. introduce a MAC indication to indicate non-SDT arrival*

T319 timer

[R2-2101578](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101578.zip) Small data transmission failure timer InterDigital, Asia Pacific Telecom, Ericsson, ETRI, FGI, Sharp, Sony discussion Rel-17 NR\_SmallData\_INACTIVE-Core

*Proposal 1: UE (re)-starts the SDT failure detection timer upon transmitting or retransmitting a small data PDU in INACTIVE state.*

*Proposal 2: UE (re)-starts the SDT failure detection timer upon receiving a downlink transmission in INACTIVE state.*

*Proposal 3: UE stops the SDT failure detection timer upon receiving RRCResume, RRCSetup, RRCRelease, RRCRelease with SuspendConfig or RRCReject with suspend.*

*Proposal 4: Upon expiry of the SDT failure detection timer, UE transitions into IDLE mode and initiates RRC establishment procedure.*

[R2-](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-.zip) 2100147

*Proposal 5: A new timer is started in RRC upon initiation of SDT procedure. This timer is not re-started for every UL/DL transmission/reception during the SDT procedure.*

Cell reselection

[R2-2100295](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100295.zip) Considerations on control plane common aspects CATT discussion Rel-17 NR\_SmallData\_INACTIVE-Core

Proposal 8: UE enters RRC\_IDLE if cell reselection happens during SDT

[R2-2100366](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100366.zip) Common Control plane aspects for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

Proposal 1: Data loss and duplication should be prevented during an SDT session.

Proposal 2: UE should continue in INACTIVE after cell reselection during an SDT session.

[R2-2100140](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100140.zip) Duscussion on RRC-Controlled Small Data Transmission vivo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100147](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100147.zip) Control Plane Common Aspects of RACH and CG based SDT Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100283](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100283.zip) Discussion on SDT CP issues OPPO discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100668](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100668.zip) Discussion on the general aspects for small data transmission Spreadtrum Communications discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100764](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100764.zip) Some open issues of SDT procedure Potevio Company Limited discussion NR\_SmallData\_INACTIVE-Core

[R2-2100817](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100817.zip) T319-like timer for the SDT procedure PANASONIC R&D Center Germany discussion

[R2-2100826](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100826.zip) Discussion on how to handle cell reselection for the case of SDT ITRI discussion NR\_SmallData\_INACTIVE-Core

[R2-2100906](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100906.zip) Discussion on subsequent SDT in NR, and timer handling Sony discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101112](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101112.zip) Consideration on CP issues for small data transmission Lenovo, Motorola Mobility discussion Rel-17

[R2-2101146](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101146.zip) Subsequent Transmission of Small data in INACTIVE MediaTek Inc. discussion

[R2-2101161](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101161.zip) Control plane common aspects of SDT ZTE Corporation, Sanechips discussion

[R2-2101177](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101177.zip) CP aspects for SDT Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101184](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101184.zip) Control plane common aspects for SDT Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101223](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101223.zip) Remaining issues on control plane aspects of NR small data transmission Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101368](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101368.zip) Subsequent data transmission for SDT Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101369](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101369.zip) Control plane aspects on SDT procedure Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101407](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101407.zip) RRC-less SDT NEC Telecom MODUS Ltd. discussion

[R2-2101507](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101507.zip) Subsequent small data transmission InterDigital discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101513](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101513.zip) Subsequent data transmission and indication for non-SDT DRBs LG Electronics Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101619](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101619.zip) SDT type selection and switch procedure CMCC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101675](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101675.zip) Discussion on the RRC-less SDT Beijing Xiaomi Mobile Software discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101867](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101867.zip) Handling of the subsequent data ITL discussion

[R2-2101947](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101947.zip) New timer for SDT failure detection LG Electronics Inc. discussion NR\_SmallData\_INACTIVE-Core

### 8.6.4 Aspects specific to RACH based schemes

RA resource configuration, RAN2 specific details of context fetch/data forwarding with and without anchor relocation

[R2-2100141](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100141.zip) Supporting Small Data Transmission via RA Procedure vivo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100148](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100148.zip) Details of RACH bsaed Small Data Transmission Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100284](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100284.zip) Discussion on RACH based SDT OPPO discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100296](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100296.zip) Considerations on transition into RRC\_CONNECTED during subsequent SDT CATT discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100367](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100367.zip) Fallback, RACH resource partitioning and identification of SDT access Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100413](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100413.zip) Fallback issue for 2-step RA based small data transmission SHARP Corporation discussion NR\_SmallData\_INACTIVE-Core

[R2-2100669](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100669.zip) Discussion on small data transmission for RACH-based scheme Spreadtrum Communications discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100907](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100907.zip) Discussion on context fetch and anchor relocation Sony discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100908](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100908.zip) Details of RA-based schemes for SDT in NR Sony discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101137](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101137.zip) Analysis on open issues of RA based SDT Lenovo, Motorola Mobility discussion Rel-17

[R2-2101159](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101159.zip) Consideration on RACH based small data transmission ZTE Corporation, Sanechips discussion

[R2-2101174](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101174.zip) RACH configuration for SDT Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101204](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101204.zip) Details on RACH specific schemes Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101214](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101214.zip) Small data transmission with RA-based scheme Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101231](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101231.zip) Discussion on RACH based NR small data transmission Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101505](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101505.zip) RACH-based SDT precedure InterDigital discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101620](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101620.zip) Remaining issues on RACH based scheme CMCC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101621](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101621.zip) Anchor relocation and context fetch CMCC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101751](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101751.zip) Discussion on RO configuration between SDT and legacy RA ASUSTeK discussion Rel-17 NR\_SmallData\_INACTIVE-Core

### 8.6.5 Aspects specific to CG based schemes

Configuration of CG resources, Validity of CG resources, handling of beam selection for CG etc, any other aspects included in [POST112-e][550] which cannot be concluded as part of the email

[R2-2100142](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100142.zip) Supporting Small Data Transmission via CG Configuration vivo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100145](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100145.zip) Details of Configured Grant based Small Data Transmission Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100285](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100285.zip) Discussion on CG based SDT OPPO discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100297](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100297.zip) Analysis on CG-based SDT CATT discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100368](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100368.zip) Handling of configured grant for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100420](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100420.zip) Open issue in [Post112-e][550][STD]: PDCCH monitoring Fujitsu discussion Rel-17 NR\_SmallData\_INACTIVE-Core [R2-2009131](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2009131.zip)

[R2-2100775](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100775.zip) Discussion on beam operations for small data enhancements Google Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100777](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100777.zip) Discussion on CG-based small data transmission Google Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100782](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100782.zip) Separate BWP for Small Data Transmission LG Electronics discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100784](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100784.zip) CG Resource validity and MAC PDU rebuilding on SDT LG Electronics discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2100909](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2100909.zip) Details of CG-based scheme for SDT in NR Sony discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101111](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101111.zip) Consideration on CG based small data transmission Lenovo, Motorola Mobility discussion Rel-17

[R2-2101138](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101138.zip) Consideration on CG based small data transmission Lenovo, Motorola Mobility discussion Rel-17 Late

=> Withdrawn

[R2-2101147](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101147.zip) Aspects specific to CG based schemes Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE

[R2-2101151](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101151.zip) RRC-less SDT over CG MediaTek Inc. discussion [R2-2009055](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2009055.zip)

[R2-2101158](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101158.zip) Configured grant based small data transmission ZTE Corporation, Sanechips discussion

[R2-2101175](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101175.zip) Details of CG based SDT Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101213](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101213.zip) Small data transmission with CG-based scheme Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101233](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101233.zip) Discussion on CG based NR small data transmission Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101371](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101371.zip) CG based SDT procedure Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101466](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101466.zip) CG resource release for SDT ETRI discussion

[R2-2101506](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101506.zip) CG-based SDT selection and configuration InterDigital discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101622](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101622.zip) Consideration on CG resource configuration CMCC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101676](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101676.zip) Retransmission issue not included in the CG email discussion Beijing Xiaomi Mobile Software discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101752](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101752.zip) Beam selection for CG-SDT ASUSTeK discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101753](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101753.zip) Discussion on RNTI for CG-based SDT ASUSTeK discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2101835](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101835.zip) Discussion on CG-SDT configuration Asia Pacific Telecom, FGI discussion

[R2-2101837](file:///C:\Users\panidx\Documents\3GPP%20RAN\113e\Docs\R2-2101837.zip) Beam operation for CG-SDT Asia Pacific Telecom, FGI discussion