3GPP TSG-RAN WG2 Meeting #113 bis electronic [R2-2104304](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104304.zip)

Online, April 12 – April 20, 2021

Source: Session Chair (InterDigital)

Title: Report for Rel-17 Small data and URLLC/IIoT

**Email discussions:**

* [AT113bis-e][500] Organizational Diana – URLLC/IIoT, Small data]

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
* [AT113bis-e][501][SDT] UP SDT open issues (LG)

Scope:

* + - Discuss open UP SDT open issues AI 8.6.2

Intended outcome:

* + - Agreeable Proposals in [R2-2104395](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104395.zip)

Deadline for providing comments:

* + - Companies inputs April 15th 2300 UTC
    - Rapporteur Proposals – April 16th 0800 UTC
    - Comments on Proposals and final proposals – April 19th 1200 UTC
* [AT113bis-e][502][SDT] Reply LS to RAN3 (Ericsson)

Intended outcome

* + - Agreeable Reply LS to RAN3

Deadline for providing comments:

* + - Companies inputs April 19th
    - Final LS – April 20th
* [AT113bis-e][503][SDT] LS to SA3 (InterDigital)

Intended outcome

* + - Agreeable LS to SA3

Deadline for providing comments:

* + - Companies inputs April 19th
    - Final LS – April 20th
* [AT113bis-e][504][SDT] LS to CT1 (Intel)

Intended outcome

* + - Agreeable LS to CT1

Deadline for providing comments:

* + - Companies inputs April 19th
    - Final LS – April 20th

Post meeting long email discussions

* [POST113bis-e][505][R17 IIoT] URLLC in UCE (LG)

Scope:

* + - Discuss remaining open issues related to URLLC in UCE based on inputs submitted to 8.5.3.
    - Agreeable Proposals

Deadline: as set per RAN2 chair

* [POST113bis-e][506][R17 IIoT] Enhancements based on QoS (CATT)

Scope:

* + - Discuss remaining open issues related to RAN enhancements on new QoS based on inputs submitted to AI 8.5.4.
    - Agreeable Proposals

Deadline: as set per RAN2 chair

* [POST113bis-e][507][SDT] Scope TBD and will be shared on the reflector

## 8.5 NR IIoT URLLC

(NR\_IIOT\_URLLC\_enh-Core; leading WG: RAN2; REL-17; WID: RP-210854)

Time budget: 0 TU

Tdoc Limitation: 2 tdocs

Email max expectation: 0 threads

THIS FEATURE WILL NOT BE TREATED in 113bis-e online and offline (i.e. no in-meeting email discussions). However, two post-meeting email discussions to get company views will be triggered for 8.5.3 and 8.5.4 (see below)

### 8.5.1 Organizational

Rapporteur input

No input expected

[R2-2102631](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102631.zip) LS on gNB-based propagation delay compensation (R3-211136; contact: Nokia) RAN3 LS in Rel-17 NR\_IIOT\_URLLC\_enh To:RAN1, RAN2 Cc:-

### 8.5.2 Enhancements for support of time synchronization

Including requirements and scope.

No input expected

This AI will not be treated in 113bis-e and no email discussion will be triggered on this topic during or post April meeting.

### 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

This AI will NOT be treated in 113bis-e and NO in meeting email discussions will be triggered.

Contributions on this topic can be submitted, but is not required, and a post April meeting email discussion is expected to be triggered to get company inputs on the remaining open issues.

[R2-2102685](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102685.zip) CG Harmonization for Unlicensed Controlled Environment Qualcomm Incorporated discussion Rel-17

[R2-2102725](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102725.zip) URLLC in UCE CATT discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2102992](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102992.zip) HARQ Process Prioritization of Configured Grant for IIoT in NR-U Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2103059](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103059.zip) Remaining issues about uplink enhancements for URLLC in UCE Huawei, HiSilicon discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2103072](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103072.zip) Uplink enhancements for URLLC in unlicensed controlled environments Intel Corporation discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2103126](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103126.zip) Issue of Prioritizing Initial Transmission over Retransmission on a CG vivo discussion

[R2-2103211](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103211.zip) Consideration on URLLC over NRU OPPO discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2103297](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103297.zip) Enhancements for URLLC in unlicensed controlled environments Lenovo, Morotola Mobility discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2103428](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103428.zip) Harmonizing UL CG enhancements in NR-U and URLLC Ericsson discussion Rel-17

[R2-2103441](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103441.zip) Further Consideration on the UL transmission in UCE ZTE Corporation, Sanechips discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2103492](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103492.zip) CG Harmonization for NR-U and IIoT/URLLC in Unlicensed Controlled Environments III discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2103566](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103566.zip) Prioritization of UL transmissions in unlicensed URLLC Sony Europe B.V. discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2103648](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103648.zip) CG Harmonization for UCE Samsung discussion Rel-17

[R2-2103688](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103688.zip) Discussion on the remaining issue for uplink enhancements for URLLC in UCE CMCC discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2103797](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103797.zip) IIoT operation in unlicensed controlled environments InterDigital discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2104103](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104103.zip) Further details on harmonization LG Electronics UK discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2104224](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104224.zip) Remaining issues of CG harmonization Xiaomi Communications discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

=> Revised in [R2-2104288](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104288.zip)

[R2-2104288](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104288.zip) Remaining issues of CG harmonization Xiaomi Communications discussion Rel-17 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]

This AI will NOT be treated in 113bis-e and NO in meeting email discussions will be triggered.

Contributions on this topic can be submitted taking into account SA2 progress, but is not required, and a post April meeting email discussion is expected to be triggered to get company inputs on the remaining open issues.

[R2-2102686](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102686.zip) RAN Enhancement to support new QoS Qualcomm Incorporated discussion Rel-17

[R2-2102726](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102726.zip) Handling of Survival Time CATT discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2102993](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102993.zip) RAN Enhancement for New QoS Parameters Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2103060](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103060.zip) RAN enhancements based on new QoS related parameters Huawei, HiSilicon discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2103125](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103125.zip) Discussion on RAN enhancement to support survival time vivo discussion

[R2-2103196](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103196.zip) Topics on new QoS handling Fujitsu discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core [R2-2000418](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2000418.zip)

[R2-2103212](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103212.zip) RAN enhancement based on new QoS OPPO discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2103329](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103329.zip) Further considerations on new QoS ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd discussion NR\_IIOT\_URLLC\_enh-Core [R2-2100328](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2100328.zip)

[R2-2103420](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103420.zip) Discussion on RAN enhancements based on Survival Time III discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core [R2-2100449](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2100449.zip)

[R2-2103429](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103429.zip) RAN enhancements based on new QoS related parameters Ericsson discussion Rel-17

[R2-2103432](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103432.zip) Entering and operating in the Survival Time state Samsung Electronics GmbH discussion

[R2-2103689](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103689.zip) Discussion on the RAN support for new QoS parameters CMCC discussion Rel-17 NR\_IIOT\_URLLC\_enh

[R2-2103735](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103735.zip) RAN2 Enhancements for Support of QoS Parameters Intel Corporation discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2103798](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103798.zip) Enhancements based on new QoS requirements InterDigital discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2103896](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103896.zip) Discussion on entering and exiting survival time state Futurewei Technologies discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2104097](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104097.zip) View on survival time mechanisms LG Electronics UK discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2104225](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104225.zip) Clarification on the survival time Xiaomi Communications discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2104265](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104265.zip) RAN enhancements based on new QoS TCL Communication Ltd. discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

## 8.6 Small Data enhancements

(NR\_SmallData\_INACTIVE-Core; leading WG: RAN2; REL-17; WID: RP-210870)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

Email max expectation: 4 threads

FFS whether RACH partitioning should be initially done as a common design for multiple WIs: RAN slicing, RedCap, Small Data Transmission, CovEnh? Or whether coordination should be attempted once each WI has produced CRs.

### 8.6.1 Organizational

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

Including [Post113-e][501][502][503][504]

[R2-2102620](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102620.zip) Reply LS on physical layer aspects of small data transmission (R1-2102125; contact: ZTE) RAN1 LS in Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN2

=> Noted

[R2-2102634](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102634.zip) Reply LS on small data transmission (R3-211280; contact: Ericsson) RAN3 LS in Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN2 Cc:-

- Ericsson would like to reply to say that we haven’t discussed the processing and RAN3 would have to progress this further.

=> Noted

[R2-2103527](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103527.zip) Stage-2 running CR Introduction of SDT Nokia, Nokia Shanghai Bell CR Rel-17 38.300 16.5.0 0357 - B NR\_SmallData\_INACTIVE-Core

=> Noted and to be reviewed over email after the meeting

[R2-2102707](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102707.zip) Report from email discussion [POST113-e][501][SDT] Selection criteria and overall Procedure Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

=> Noted

Proposal 1:

- Sony is asking if this threshold is optional

- Vivo asks if this is L1 RSRP or L3 RSRP. Samsung thinks this is the same as carrier based selection, i.e. L1-based. Xiaomi asks whether it is cell level or SS

Proposal 4 (20/6): RSRP threshold for carrier selection is specific to SDT (i.e. separately configured for SDT)

- Nokia is not sure we need SDT specific RSRP and what the use case is. Samsung explains that if SDT is configured only on one UL carrier then the network can direct the UE to that UL carrier for SDT.

- CATT doesn’t think there needs to be a link between carrier selection and SDT

- Intel thinks that this point overlaps with 504 email discussion. Intel would like to confirm that we do not modify the legacy cell selection mechanism.

- Ericsson thinks that it would be good to control the carrier selection

- Huawei agrees with Nokia and thinks that we need to discuss CG and RA with 504.

- LG thinks that this depends whether we do carrier selection first or SDT selection

Proposal 6 (18/8): Data volume threshold is the same for CG-SDT and RA-SDT

- Xiaomi thinks that CG configuration is UE specific so it should be aligned between common RA and CG configuration.

- Nokia thinks that since we don’t do switching between CG and RA there is no reason to not keep them independent. Panasonic agrees with Nokia. Huawei thinks that this targets different use cases and it’s simple to provide separate configuration.

- Qualcomm sees little benefit and if we have different thresholds we’d have a problem on how to select.

- ZTE explains that this is just an overall threshold on whether SDT is allowed or not and we would end up mixing the CG and RA selection. This threshold will be larger than the CG TB or RA TB. Apple, InterDigital, Lenovo, LG agrees with ZTE. Lenovo also thinks that the SDT selection step will be simple. LG thinks we need to keep it simple, we already have enough selection criteria.

- Vivo also agrees with ZTE and this is also for the network to determine whether the UE should do subsequent transmissions.

|  |
| --- |
| **Agreements:**   1. RSRP threshold is used to select between SDT and non-SDT procedure, if configured (RSRP refers to the same RSRP measured for carrier selection). 2. RSRP threshold to select between SDT and non-SDT procedure is used for both CG-SDT and RA-SDT 3. RSRP threshold to select between SDT and non-SDT procedure is same for both CG-SDT and RA-SDT 4. RSRP threshold for carrier selection is specific to SDT (i.e. separately configured for SDT). This is optional for the network. 5. Confirm that cell selection mechanism is not modified 6. RSRP threshold for RA type selection is specific to SDT (i.e. separately configured for SDT) 7. Data volume threshold is the same for CG-SDT and RA-SDT (can be checked further in stage 3 if we obtain majority support)   8 *FFS on the order and missing pieces (e.g. failure, fallback) of the high level procedure. The details of the procedures are left for stage 3. FFS on the procedure below, but copied for information.*  A. Upon arrival of data only for DRB/SRB(s) for which SDT is enabled, the high level procedure for selection between SDT and non SDT procedure is as follows:  If CG-SDT criteria is met: UE selects CG-SDT. UE initiate SDT procedure  Else if RA-SDT criteria is met: UE selects RA-SDT. UE initiate SDT procedure  Else: UE initiate non SDT procedure.  B. CG-SDT criteria is considered met, if all of the following conditions are met,  1) available data volume <= data volume threshold  2) RSRP is greater than or equal to a configured threshold  FFS 3) CG-SDT resources are configured on the selected UL carrier and are valid  C. RA-SDT criteria is considered met, if all of the following conditions are met,  1) available data volume <= data volume threshold  2) RSRP is greater than or equal to a configured threshold  3) 4 step RA-SDT resources are configured on the selected UL carrier and criteria to select 4 step RA SDT is met; or 2 step RA-SDT resources are configured on the selected UL carrier and criteria to select 2 step RA SDT is met   1. Switching from SDT to non-SDT is supported. 2. FFS Switching from CG-SDT to RA-SDT is not allowed   11 UE switches from SDT to non-SDT in following cases:  - Case 1 (27/0): UE receive indication from network to switch to non-SDT procedure.  - Network can send RRCResume. FFS whether network can send indication in RAR/fallbackRAR/DCI to switch to non-SDT procedure.  - FFS Case 2 (18/9): Initial UL transmission (in msgA/Msg3/CG resources) fails configured number of times |

[R2-2103022](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103022.zip) Summary of General and other control plane open issues for SDT (email: [Post 113-e][502]) Rapporteur (ZTE) discussion

Proposal 2: When data arrives on non-SDT bearer during SDT, then the UE shall send a DCCH message. The detailed contents of the message are FFS (new message/using an existing message etc) (21/4)

- LG thinks that there are cases where DCCH doesn’t work.

- Huawei doesn’t think that the problems with CCCH are properly characterized.

Proposal 2: When data arrives on non-SDT bearer during SDT, then the UE shall send a DCCH message. The detailed contents of the message are FFS (new message/using an existing message etc) (21/4)

- If non-SDT data arrives during SDT, then the RRC layer will generate a DCCH message and submit it to the lower layers. The MAC layer will include this in UL after contention resolution. If contention resolution fails a new RACH procedure will be triggered by MAC (same as today) and the DCCH message can be sent after RACH procedure is complete.

Proposal 3: gNB can only configure MN terminated MCG bearer type for SDT (25/0)

=> Noted

**Agreements**

1gNB can only configure MN terminated MCG bearer type for SDT

2 Non-SDT radio bearers are only resumed upon receiving RRCResume (same as today)

3 Down-scope to two solutions (CCCH or DCCH) and ask SA3 about security issues (explain that CCCH message will be repeated in same cell and ask if there is a question)

[R2-2103897](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103897.zip) DRAFT Reply LS on small data transmission Ericsson LS out Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN3

- Need to add that MAC and RLC need to be in the same entity and a different assumption would have impact.

=> The LS is revised in [R2-2104398](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104398.zip)

[R2-2104398](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104398.zip) DRAFT Reply LS on small data transmission Ericsson LS out Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN3

=> add a comment that this is a RAN2 assumption. It is up to RAN3 to make the final decisions, however, if RAN3 needs another solution to please let RAN2 know.

=> The LS will be updated in [R2-21044](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104398.zip)00

[R2-2104490](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104490.zip) DRAFT Reply LS on physical layer aspects of small data transmission (Reply to [R2-2102620](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102620.zip)) ZTE Corporation LS out Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN1

=> Not treated

### 8.6.2 User plane common aspects

Overall user plane procedure for SDT (including triggering and thresholds, HARQ, and MAC CEs), data volume computation,. suppression of PDCP status report, RSRP threshold for SDT selection, switching between CG/RA, and any other user aspects included in Post113-e][501][503] which cannot be concluded as part of the email

Email discussion summary expected for this AI durin 113bis-e

[R2-2104395](C:\\Users\\panidx\\OneDrive - InterDigital Communications, Inc\\Documents\\3GPP RAN\\113bise\\Docs\\R2-2104395.zip) Summary of UP SDT open issues LG

=> Noted

**Agreements**

1 The UE performs PDCP re-establishment implicitly, i.e. without explicit indication for PDCP re-establishment, when the UE initiates SDT procedure.

2 As in legacy, whether to support ROHC continuity is explicitly configured by the network.

3 PDCP duplication is not supported for SDT

4 connected mode DRX is not supported for SDT

5 PHR functionality is supported for SDT. FFS on PHR procedure

6 SR resource is not configured for SDT. When the BSR is triggered by SDT data, the UE will trigger RA because SR resource is not available, same as legacy

**For potential agreement:**

Proposal 6: Data volume used for SDT selection criteria is calculated as the total sum of Buffer Size across SDT RBs. (15/2/5/5)

Proposal 7: PHR functionality is supported for SDT. (21/8)

- LG explains then next step is to discuss the details.

Proposal 9: SR resource is not configured for SDT. When the BSR is triggered by SDT data, the UE will trigger RA-SDT because SR resource is not available, same as legacy (14/13).

For further discussion:

Proposal 2: RAN2 discuss further whether the UE can implicitly disable PDCP status report when the UE initiates SDT procedure. (13/14)

Proposal 5: RAN2 discuss further whether the RLC failure handling should be supported for SDT. (11/13)

Proposal 8: RAN2 discuss further whether and how the LCH restriction is used for SDT (12/12/12).

Left for RAN1 decision:

Proposal 11: Whether to support BFD and BFR for SDT is up to RAN1 decision.

Not treated

[R2-2102708](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102708.zip) User Plane Common Aspects of RACH and CG based SDT Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102750](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102750.zip) Discussion on user plane issues of SDT OPPO discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102755](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102755.zip) Discussion on User Plane Aspect of Small Data Transmission vivo discussion NR\_SmallData\_INACTIVE-Core [R2-2100139](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2100139.zip)

[R2-2102840](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102840.zip) User plane aspects for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103018](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103018.zip) User plane open issues for SDT ZTE Corporation, Sanechips discussion

[R2-2103102](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103102.zip) Analysis on UP common aspects of SDT CATT discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103197](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103197.zip) Support of CA and PDCP CA duplication Fujitsu discussion Rel-17 NR\_SmallData\_INACTIVE-Core [R2-2100419](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2100419.zip)

[R2-2103319](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103319.zip) The UP common issues for small data transmissions Lenovo, Motorola Mobility discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103430](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103430.zip) Discussion on user plane common aspects of NR small data transmission Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core [R2-2101221](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2101221.zip)

[R2-2103444](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103444.zip) Discussion on data volume threshold for small data transmission PANASONIC R&D Center Germany discussion

[R2-2103454](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103454.zip) Avoid triggering RA during subsequent SDT ASUSTeK discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103521](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103521.zip) Common aspects for SDT Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103528](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103528.zip) User Plane common aspects Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103531](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103531.zip) User plane common aspects for SDT Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103583](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103583.zip) Some aspects of User Plane for SDT in NR Sony Europe B.V. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103672](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103672.zip) Discussion on small data transmission Google Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103674](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103674.zip) Discussion on beam operations for small data transmission Google Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103714](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103714.zip) Remaining issues on transmission type selection and overall procedure CMCC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103870](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103870.zip) User plane aspects on the SDT procedure Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103990](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103990.zip) Consideration on overall SDT procedure and criteria LG Electronics Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2104206](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104206.zip) On the overall and detailed procedure of SDT China Telecommunications discussion

[R2-2104220](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104220.zip) Discussion on data volume calculation Xiaomi Communications discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2104263](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104263.zip) Discussion on Small Data Transmission TCL Communication Ltd. discussion Rel-17

### 8.6.3 Control plane common aspects

Cell reselection and failure handling, handling of subsequent data transmissins (including, how to indicate presence of subsequent data, etc) handling of non-SDT DRBs (including whether to resume or not non-SDT), CP data over SDT, SDT termination and data loss prevention and any other control plane aspects included in [Post113-e][501][502][503] which cannot be concluded as part of the email

[R2-2103971](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103971.zip) Report of [Post113-e][503][SDT] T319, cell reselection and re-establishment InterDigital discussion Rel-17 NR\_SmallData\_INACTIVE-Core

Proposal 7

- Intel thinks that we should discuss further whether the UE goes to Idle or stays in INACTIVE.

- LG thinks this is a corner case and we shouldn’t optimize behaviour. Ericsson, Lenovo, vivo, oppo, QC, agrees with LG.

- ZTE thinks that we shouldn’t use different mechanisms and using the same behaviour as 6. Samsung doesn’t think proposal 7 depends on 6 as it depends on SA3.

=> Noted

**Agreements:**

1. SDT failure detection timer is started upon initiation of SDT procedure
2. T319 legacy is not started if RRCResumeRequest or RRCResumeRequest1 is transmitted …
3. T319 legacy stop conditions also apply to SDT failure detection timer
4. RRC re-establishment procedure is not supported for SDT

5 An LS is sent to SA3 to verify feasibility/impacts of re-using same NCC/I-RNTI value temporarily for RRC Resume procedure in new cell during SDT procedure (include same cell question from 502]

6 FFS - RAN2 to select between the following options for cell re-selection during ongoing SDT procedure next meeting: 1) UE transitions to IDLE, possibly performing high-layer retransmission (8/25); or 2) UE remains in INACTIVE and sends RRC Resume to new cell

7 FFS Upon SDT failure detection timer expiry, the same procedure as T319 expiry is used (e.g. transition to IDLE as in the case of expiry of the T319 timer and attempts RRC connection setup) (18/8)

**Requires online discussion for next meeting**

Proposal 3: RAN2 to decide whether SDT failure detection timer: 1) has an extended duration to accommodate subsequent SDT (13/25); or 2) is restarted upon (re)transmission or reception of small data (12/25) [CB next Tuesday or postpone it to next meeting]

[R2-2104396](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104396.zip) LS to SA3 on Small data transmissions – email discussion 503 (InterDigital)

- Intel would have liked to add PDCP count as the CCCH solution would break the assumption that we shouldn’t do key reuse

=> Update the following question: *Can a CCCH message reusing the I-RNTI and resumeMAC-I be transmitted again in the same cell after SDT initiation, e.g. similar to legacy RRC Reject case (but without having received RRC Reject at the UE)?*

=> The LS is approved in R2-2104401 with the change above

[R2-2104397](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104397.zip) LS to CT1 on Small data transmission – email discussion 504 (Intel)

- LG thinks that companies want to remove question 1 and question 2.

- ZTE thins that we have no question but we are asking feedback. We don’t need to explicitly ask about all three, we can solicit any inputs. Vivo agrees with ZTE

- Ericsson also had same feeling about question 1 and question 2. Focus the question for 3.

- Huawei and QC are fine to remove question 1 and question 2

=> Remove question 1 and 2

=> Email discussion to continue and to be approved Wednesday

[R2-2104399](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104399.zip) Report of email discussion 504 Intel

=> Noted

Not treated

[R2-2102709](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102709.zip) Control Plane Common Aspects of RACH and CG based SDT Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102751](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102751.zip) Discussion on control plane issues of SDT OPPO discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102756](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102756.zip) Discussion on RRC-Controlled Small Data Transmission vivo discussion NR\_SmallData\_INACTIVE-Core [R2-2100140](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2100140.zip)

[R2-2102841](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102841.zip) Signalling and NAS-AS interaction for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102842](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102842.zip) Fallback and failure handling for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102900](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102900.zip) New timers for SDT failure detection Langbo discussion Rel-17 NR\_SmallData\_INACTIVE-Core Late

=> Withdrawn

[R2-2102991](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102991.zip) Handling of non-SDT traffic arrival PANASONIC R&D Center Germany discussion

[R2-2103019](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103019.zip) Control plane aspects of SDT ZTE Corporation, Sanechips discussion

[R2-2103103](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103103.zip) Considerations on Some Common Control Plane Issues CATT discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103151](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103151.zip) Handling of non-SDT data arrival Potevio Company Limited discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103198](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103198.zip) RAN paging reception and response during SDT Fujitsu discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103257](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103257.zip) Handling of non-SDT data during SDT ETRI discussion

[R2-2103299](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103299.zip) Discuss on solutions for arriving of non-SDT data during SDT NEC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103405](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103405.zip) Consideration on CP issues for small data transmission Lenovo, Motorola Mobility discussion Rel-17

[R2-2103431](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103431.zip) Discussion on control plane common aspects of NR small data transmission Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core [R2-2101223](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2101223.zip)

[R2-2103455](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103455.zip) Beam management in SDT ASUSTeK discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103497](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103497.zip) SDT control plane aspects Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE

[R2-2103522](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103522.zip) CP aspects for SDT Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103568](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103568.zip) Discussion on subsequent SDT in NR, timer handling, and support for SRB1/2 Sony Europe B.V. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103715](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103715.zip) Non-SDT data transmission CMCC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103796](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103796.zip) Subsequent small data transmission InterDigital discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103867](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103867.zip) Non-SDB handling during the SDT procedure Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103868](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103868.zip) Control plane aspects on the SDT procedure Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103904](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103904.zip) Control plane common aspects for SDT Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103970](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103970.zip) CP and configuration aspects for small data InterDigital discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103972](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103972.zip) [Draft] LS to SA WG3 on re-use of same NCC and I-RNTI value for RRC Resume procedure in different cells during small data transmission procedure. InterDigital LS out Rel-17 NR\_SmallData\_INACTIVE-Core To:SA3

[R2-2103989](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103989.zip) Discussion on switching to non-SDT procedure LG Electronics Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103991](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103991.zip) Discussion on cell reselection during SDT LG Electronics Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2104204](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104204.zip) Resuming non-SDT RBs and indication LG Electronics Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core Late

[R2-2104221](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104221.zip) Discussion on the support of the RRC-less SDT Xiaomi Communications, Intel Corporation, ASUSTeK, Fujitsu, MediaTek, Apple, Spreadtrum Communications discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2104222](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104222.zip) Technical details of the RRC-less SDT Xiaomi Communications, ASUSTeK, Fujitsu, Spreadtrum Communications discussion Rel-17 NR\_SmallData\_INACTIVE-Core

### 8.6.4 Aspects specific to RACH based schemes

RA resource configuration and selection, PDCCH monitoring after successful SDT RA completion, RAN2 specific details of context fetch/data forwarding with and without anchor relocation

Not treated

[R2-2102710](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102710.zip) Details of RACH bsaed Small Data Transmission Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102752](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102752.zip) Discussion on RACH based SDT OPPO discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102757](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102757.zip) Supporting Small Data Transmission via RA Procedure vivo discussion NR\_SmallData\_INACTIVE-Core [R2-2100141](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2100141.zip)

[R2-2102847](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102847.zip) Fallback issue for 2-step RA based small data transmission Sharp discussion NR\_SmallData\_INACTIVE-Core [R2-2100413](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2100413.zip)

[R2-2103020](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103020.zip) Open issues for RACH based SDT ZTE Corporation, Sanechips discussion

[R2-2103104](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103104.zip) Considerations on Procedures without Anchor Relocation CATT discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103105](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103105.zip) Analysis on Search Space of RA-SDT CATT discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103252](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103252.zip) Discussion on RACH-based SDT Spreadtrum Communications discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103264](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103264.zip) PDCCH monitoring in subsequent data transmission period Asia Pacific Telecom co. Ltd, FGI discussion

[R2-2103403](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103403.zip) Analysis on open issues of RA based SDT Lenovo, Motorola Mobility discussion Rel-17

[R2-2103433](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103433.zip) Discussion on RACH based NR small data transmission Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core [R2-2101231](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2101231.zip)

[R2-2103456](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103456.zip) Discussion on RO configuration between SDT and non-SDT ASUSTeK discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103519](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103519.zip) RACH based SDT Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103529](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103529.zip) Details of context fetch and data forwarding Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103580](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103580.zip) Discussion on context fetch and anchor relocation Sony Europe B.V. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103716](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103716.zip) Anchor relocation and context fetch CMCC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103869](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103869.zip) Subsequent data transmission for SDT Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103903](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103903.zip) Small data transmission with RA-based schemes Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

### 8.6.5 Aspects specific to CG based schemes

This AI will not be treated in RAN2#113bis-e (only the email discussion [504] in AI 8.6.1 will be treated)

CG resources, configuration and selection, validity of CG resources, multiple CG configurations, handling of beam selection for CG (including association between CGs and SSBs) etc, any other aspects included in [Post113-e][504][SDT] which cannot be concluded as part of the email

[R2-2103533](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103533.zip) Report from [POST113-e][504][SDT] CG Open Issues Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

The following proposals are potentially easily agreeable:

Proposal3: UE start a window after CG/DG transmission for CG-SDT (24/24). FFS whether to design a new timer or to reuse an existing timer.

- InterDigital explains in the UP email discussion companies don’t think DRX is needed so we can agree with the new timer. LG clarifies that we may not need new mechanism.

Proposal4: Support retransmission by dynamic grant for CG-SDT. (24/24)

Proposal5: Support multiple HARQ processes for uplink CG-SDT. (18/24)

Proposal6: CG resource availability delay is not considered as a criterion for CG validation. (18/20)

Proposal7: UL carrier selection is performed before CG-SDT transmission. (23/24)

**Agreements:**

1 CG-SDT resources can be configured at the same time on NUL and SUL

2 Implicit release of CG-SDT resource is not supported

3 UE start a window after CG/DG transmission for CG-SDT. FFS whether to design a new timer or to reuse an existing timer.

4 Support retransmission by dynamic grant for CG-SDT.

5 Support multiple HARQ processes for uplink CG-SDT.

6 CG resource availability delay is not considered as a criterion for CG validation.

7 UL carrier selection is performed before CG-SDT selection

*8 FFS CG-SDT resource can be configured on BWPs other than initial BWP*

The following proposals need further discussion for next meeting:

Proposal8: RAN2 should further discuss whether to support CG configuration request.

Proposal9: Release of CG-SDT configuration by system information indication is not supported. (5/21)

Proposal10: *CG-SDT resource can be configured on BWPs other than initial BWP configured by system information* (17/24).

- Nokia would like to discuss how it impacts the paging if it moves to another BWP. Huawei explains that there is network implementation to solve this problem. Qualcomm also sees some issues.

Proposal11: RAN2 should further discussion whether to support autonomous retransmission for CG-SDT.

*Proposal12: Support L1-ACK feedback for CG-SDT. (14/24) Send an LS to RAN1 on this.*

- Nokia doesn’t support this and there has been no motivation. Huawei explains that subsequent transmissions are supported with CG. This is also linked with the agreement related to the multiple HARQ processes. ZTE asks why this is different to CG-DFI but support asking RAN1.

Proposal13: UE does not select any SSB if none of the SSBs’ RSRP is above the RSRP threshold. (18/23) FFS the UE behavior when none of the SSB’s RSRP is above the threshold

Not treated

[R2-2102711](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102711.zip) Details of Configured Grant based Small Data Transmission Samsung Electronics Co., Ltd discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102753](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102753.zip) Discussion on CG based SDT OPPO discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2102758](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102758.zip) Supporting Small Data Transmission via CG configuration vivo discussion NR\_SmallData\_INACTIVE-Core

[R2-2102843](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2102843.zip) On Configured Grant aspects for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103021](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103021.zip) Open issues for CG based SDT ZTE Corporation, Sanechips discussion

[R2-2103199](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103199.zip) PDCCH monitoring after TAT expiry Fujitsu discussion Rel-17 NR\_SmallData\_INACTIVE-Core [R2-2000420](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2000420.zip)

[R2-2103265](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103265.zip) CG-SDT based on beam operation Asia Pacific Telecom co. Ltd, FGI discussion

[R2-2103367](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103367.zip) Aspects specific to CG based SDT Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE

[R2-2103404](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103404.zip) Consideration on CG based small data transmission Lenovo, Motorola Mobility discussion Rel-17

[R2-2103434](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103434.zip) Discussion on CG based NR small data transmission Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core [R2-2101233](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2101233.zip)

[R2-2103457](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103457.zip) Beam selection for CG-SDT ASUSTeK discussion Rel-17 NR\_SmallData\_INACTIVE-Core [R2-2101752](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2101752.zip)

[R2-2103520](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103520.zip) Details of CG based SDT Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103532](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103532.zip) Small data transmission with CG-based scheme Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103581](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103581.zip) Details of CG-based scheme for SDT in NR Sony Europe B.V. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2103795](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2103795.zip) CG-based SDT InterDigital discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2104223](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104223.zip) Remaining issues of CG SDT Xiaomi Communications discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2104241](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\113bise\Docs\R2-2104241.zip) On CG Resource Configuration in Small Data enhancement China Telecommunications discussion