3GPP TSG-RAN WG2 Meeting #118 electronic [R2-2206154](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206154.zip)

Online, May, 2022

Source: Session Chair (InterDigital)

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

**Email discussions:**

* [AT118-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
* [AT118-e][501][Sdata] CP Open issues and CR to 38.331 (ZTE)

CP open issues and CR capturing agreed corrections

Deadline: To be set by rapporteur aiming to have company inputs and proposals by Friday

* [AT118-e][502][Sdata] UP open issues and CR to 38.321 (Huawei)

UP open issues and CR capturing agreed corrections

Deadline: To be set by rapporteur aiming to have company inputs and proposals by Friday

* [AT118-e][503][Sdata] CR 38.300 (Nokia)

CR capturing agreed corrections

Deadline:

* [AT118-e][504][IIoT] CR 38.300 (Nokia)

CR capturing agreed corrections

Deadline:

* [AT118-e][505][IIoT] CP open issues and CR 38.331 (Ericsson)

 CP open issues and CR capturing agreed corrections

Deadline: To be set by rapporteur aiming to have company inputs and proposals by

* [AT118-e][506][IIoT] UP open issues and CR 38.321 (Samsung)

 UP open issues and CR capturing agreed corrections

Deadline: To be set by rapporteur aiming to have company inputs and proposals by Friday

* [AT118-e][507][RA Part] CP open issues and CR 38.331 (Ericsson)

 CP open issues and CR capturing agreed corrections

Deadline: To be set by rapporteur aiming to have company inputs and proposals by

* [AT118-e][508][RA Part] UP open issues and CR 38.321 (ZTE)

 UP open issues and CR capturing agreed corrections

Deadline: To be set by rapporteur aiming to have company inputs and proposals by Friday

* [AT118-e][509][SData] CR to 38.304 (Vivo)
* [AT118-e][510][RA Part] CR to 38.300 (Nokia)
* [AT118-e][511][SData] LS to RAN3 (CATT)
* [AT118-e][512][SData] LS to RAN1 (ZTE)

## 6.5 NR IIoT URLLC

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

Tdoc Limitation: 3 tdocs

WI has been declared 100% complete

### 6.5.1 Organizational

Including LSs, rapporteur correction CR, and any rapporteur inputs (e.g. from ASN.1 ad-hoc meeting).

[R2-2204416](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204416.zip) RE: LS on Time Synchronization IEEE 1588 WG LS in To:RAN, SA Cc:RAN2

=> Withdrawn (replaced by [R2-2206117](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206117.zip))

[R2-2206117](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206117.zip) RE: LS on Time Synchronization IEEE 1588 WG LS in

=> Noted

[R2-2204480](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204480.zip) Reply LS on propagation delay compensation (R4-2207021; contact: Huawei) RAN4 LS in Rel-17 NR\_IIOT\_URLLC\_enh-Core To:RAN1, RAN2

=> Noted

[R2-2204519](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204519.zip) Reply Time Synchronization support in 3GPP (S2-2203229; contact: Ericsson) SA2 LS in Rel-17 IIoT To:ITU-T SG-15 Cc:RAN2

=> Noted

[R2-2205506](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205506.zip) Summary of [Pre118-e][502][IIoT URLLC] 38331 CR and rapporteur resolutions (Ericsson) Ericsson discussion Late

=> Noted

[R2-2205507](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205507.zip) Correction for enhanced IIoT&URLLC support for NR Ericsson CR Rel-17 38.331 17.0.0 3093 - F NR\_IIOT\_URLLC\_enh-Core Late

=> take this as a baseline for further updates

[email discussion]

[R2-2205683](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205683.zip) CR for procedure level alignment of UL skipping Apple CR Rel-17 38.321 17.0.0 1280 - D NR\_IIOT\_URLLC\_enh-Core

[R2-2205710](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205710.zip) Correction for Enhanced NR IIoT and URLLC in 38.321 Samsung CR Rel-17 38.321 17.0.0 1281 - F NR\_IIOT\_URLLC\_enh-Core

### 6.5.2 Control Plane

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed with contributions with CR in the appendix of the contribution

[R2-2205509](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205509.zip) On unresolved RIL issues Ericsson discussion

*Proposal 1 [E039] Only the latest measurement is included in the UE Rx-Tx time difference measurement. No spec change*

- Huawei has an alternative approach to add the time stamp described in 4866

- Nokia, thinks nothing is needed and it was discussed in RAN1. Oppo agreed to not add the time stamp for this issue and this reverts RAN1 agreement.

- Apple, Samsung, catt, Lenovo, sequans agree with Ericssons view.

*Proposal 2 [O501] PropAgree with modification: “If sib9Fallback is included, then UE fallbacks to apply referenceTimeInfo received in SIB9, if any.“*

- Nokia wonders if it is indicated, then why is the UE not reading SIB9, what’s the intention

- CATT provides alternative wording “stop ignoring referenceTimeInfo from SIB9”

*Proposal 3 [O500]. ProReject. It is up-to network implemenation when/if to configure sib9Fallback.*

*Proposal 4 [H703]. ProReject. survivalTimeStateSupport can be configured for a split bearer without duplication. No spec change.*

- Huawei explains that the intetion was not to forbid the split bearer. When split bearer has multiple RLC entities associated to different cell groups but PDCP duplication is not configured then the field should be absent. CATT thinks it is already covered by current spec, as survival time is only configured if duplication is configured.

- LG thinks it is already obvious and clear in the spec.

- Nokia thinks Huawei has a point as there is a coupling and there is a scenario. Intel, Apple, Samsung agree as well.

=> simplify the description - that field is absent if duplication is not configured

*Proposal 5 [E038]. Remove “the UE ignores the field channelAccessPriority-r16” from the field description of cg-COT-SharingList.*

**Agreements**

1. Only the latest measurement is included in the UE Rx-Tx time difference measurement. No spec change
2. Update to *“If sib9Fallback is included, 2> apply referenceTimeInfo* in SIB9
3. It is up-to network implemenation when/if to configure *sib9Fallback*
4. simplify the description - that survival time field is absent if duplication is not configured
5. Remove “the UE ignores the field channelAccessPriority-r16” from the field description of cg-COT-SharingList.

[R2-2206223](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206223.zip) Summary of [AT118-e][505][IIoT] CP open issues and CR 38.331 (Ericsson) Ericsson

* Nokia is concerned with the handover scenario with proposal 1. Ericsson explains that while they agree it was initially discussed and agreed to not consider this optimizations

=> Noted

**Agreements**

1. RAN2 confirms that the fields ta-PDC and sib9Fallback are kept in the RRC message DLInformationTransfer.

2. Multi-TB scheduling in CG is not supported when cg-retransmissionTimer is not configured for unlicensed band in Rel-17. Adopt the TP in [R2-2205508](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205508.zip).

[R2-2204866](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204866.zip) Remaining issue of PDC calculation based on measurements for single pair of RSs Huawei, HiSilicon discussion Rel-17 38.331 NR\_IIOT\_URLLC\_enh-Core

=> Noted

[R2-2206006](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206006.zip) Discussion on ta-PDC and sib9Fallback for IIoT ZTE Corporation, Sanechips discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

Proposal 1: It’s suggested to modify sib9Fallback as below:

sib9Fallback-r17 ~~ENUMERATED {true}~~BOOLEAN OPTIONAL, -- Need ~~RN~~M

- Ericsson thinks that this was discussed in adhoc and at lest it shouldn’t be need M. Not sure about Boolean.

- CATT doesn’t think anything is needed. Nokia, Samsung, oppo, sequans agrees.

=> Not needed

Proposal 2: It’s suggested to modify ta-PDC as below:

ta-PDC-r17 ENUMERATED {activate,deactivate} OPTIONAL, -- Need RNM

=> Not needed

Proposal 3: RAN2 is suggested to further discuss whether it’s better to move ta-PDC and sib9Fallback to RRCReconfiguration message

- Nokia thinks that this has nothing to do with the NAS message so no need to have in DL transfer message, so there may be some point.

- Ericsson points out that this was discussed in previous releases and it ended up where it is now.

- Qualcomm thinks that Nokia is correct but this may create more problems with the sib9fallback

=> Noted

[R2-2204758](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204758.zip) [O500,O501] Clarification on the usage of sib9Fallback OPPO draftCR Rel-17 38.331 17.0.0 F NR\_IIOT\_URLLC\_enh-Core

[R2-2204867](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204867.zip) Resolution of remaining issue of PDC calculation Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3006 - F NR\_IIOT\_URLLC\_enh-Core

[R2-2204868](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204868.zip) Miscellenous corrections to RRC spec for IIoT [H701] [H702] [H703] Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3007 - F NR\_IIOT\_URLLC\_enh-Core

[R2-2205508](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205508.zip) Multi-TB scheduling in UCE Ericsson discussion

This is Rel-18 and should maybe treated in main session

[R2-2205732](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205732.zip) Consideration on meeting very low latency requirement in TDD ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2205734](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205734.zip) [DRAFT] Reply LS on RAN feedback for low latency ZTE Corporation, Sanechips LS out Rel-17 NR\_IIOT\_URLLC\_enh-Core To:SA2 Cc:RAN3

### 6.5.3 User Plane

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed with contributions with CR in the appendix of the contribution

R2-2206222 Summary of IIOT/URLLC User Plane Samsung

[R2-2206467](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206467.zip) Summary of Offline 506: IIOT UP Open Issues Samsung

Agreements

1 Upon survival time state entry, all RLC entities configured for the DRB are activated for duplication (no specification change).

2 When both cg-RetransmissionTimer and autonomousTx are configured and HP is not pending, CGT for de-prioritized CG used for autonomous retransmission is stopped. (no specification change)

3 RAN2 confirms that when PHY prioritization is enabled for overlapping DG/CG in Rel-17 and lch-basedPrioritization is not configured, MAC procedures fall back to Rel-15 behaviour, i.e. DG is always chosen. (no specification change)

4 When a CG-PUSCH transmission is cancelled by a DG-PUSCH with UL-SCH (i.e. MAC PDU is delivered to PHY) in Rel-17, de-prioritization relies on existing Rel-16 LCH-based Prioritization. (no specification change)

5 FFS When a CG-PUSCH transmission is cancelled by a DG-PUSCH without UL-SCH (i.e. MAC PDU is not delivered to PHY) in Rel-17, de-prioritization relies on existing Rel-16 LCH-based Prioritization. The CG is not considered as a de-prioritized uplink grant. (no specification change). Check issue described for UCI only case

6 Condition of simultaneous transmission in CG vs DG collision is relocated to SR vs UL-SCH collision.

7 TP of [R2-2204665](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204665.zip) is agreed as a baseline. RAN2 will further refine the final wording during the CR review.

8 NOTE on SPS HARQ feedback deferral proposed by [R2-2206028](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206028.zip) is not pursued.

9 When the maximum allowed deferral time of HARQ feedback is reached drx-RetransmissionTimerDL is not started. (no specification change)

10 “by configuration of simultaneousPUCCH-PUSCH” is replaced by “by configuration of simultaneousPUCCH-PUSCH or simultaneousPUCCH-PUSCH-SecondaryPUCCHgroup”

11 TP of [R2-2205710](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205710.zip) is not pursued

For online discussion

Proposal 1 (12/15). Upon survival time state entry, all RLC entities configured for the DRB are activated for duplication (no specification change).

Proposal 1a. RAN2 to discuss whether the gNB should keep at least one serving cell for all the RLC entities (i.e. an RLC entity can be activated without any active cell)

*Option 1: all RLC entities configured for the DRB with at least one serving cell activated are activated for duplication (TPs of R2-2205019 and R2-2205020 are baselines).*

*Option 2: all RLC entities configured for the DRB are activated for duplication (no specification change).*

* Samsung explains that according to stage 2 specs at least one RLC entity should be configured. Nokia thinks that rel-17 is a bit different and it is better that the UE ensure that when there is no serving cell activated then it doesn’t activate duplication otherwise we will have a problem. Apple has the same understanding as Nokia and this helps with power consumption and network flexibility. LG also supports option 1, considering that more than two cells can be configured, it may not be always ensured that all SCells are activated. Ericsson thinks that it is possible for the network to activate and ensure that cells are activated and if it cannot then it’s not a problem.
* CATT doesn’t see what the problem is. Samsung thinks that anyways the PDCP PDU will be discarded. Huawei agrees with CATT and we shouldn’t re-have the discussions. Qualcomm also agrees Ericsson, non-issue as it is a misconfiguration from the network and even if it happens a UE implementation should see that the RLC doesn’t have a serving cell activated. Nokia doesn’t think we can leave it to implementation.
* Nokia thinks that we shouldn’t rely on PDCP discard and we should have a common understanding that an RLC entity shouldn’t be activated without an active serving cell.
* ZTE supports option 1 as well.

*When a CG-PUSCH transmission is cancelled by a DG-PUSCH without UL-SCH (i.e. MAC PDU is not delivered to PHY) in Rel-17, de-prioritization relies on existing Rel-16 LCH-based Prioritization. The CG is not considered as a de-prioritized uplink grant. (no specification change)*

* Apple is concerned that a CG PUSCH may be cancelled by a DC PUSCH and we should stop the timer
* Samsung explains that according to the spec the CG PUSCH will not be cancelled and this is more of a RAN1 issue. If we leave as is CSI reporting will not be transmitting and have a preference to down-prioritize the CG.
* CATT doesn’t see the problem, the MAC sees all the UL grant and even if empty they will go through intra-UE prioritization so they will still be treated by MAC.
* Lenovo thinks that Apple’s understanding is correct for autonomous transmission. Apple explains that this also happens when there is no data too. Nokia see some point now after the explanation.
* LG explains that there may be some contradiction between PHY and MAC, when MAC performs prioritization it should consider all scenarios of PHY prioritization and there is no problem. Samsung explains that this is the UCI only case. Apple explains this is a new behavior in R17, the PHY prioritization and LCH based prioritization are independent

=> postponed to next meeting

Proposal 5 (5/11). RAN2 to discuss: when the maximum allowed deferral time of HARQ feedback is reached, drx-RetransmissionTimerDL is started.

* Nokia points out that all network vendors prefer to start the timer. Qualcomm thinks this is going to complicate the UE behavior. Oppo agrees with Qualcomm. Samsung thinks that this doesn’t happen very often. LG thinks that this is to send HARQ feedback, but intention is to send it as early as possible and why does the network need to wait until timer expires. Intel agrees with LG.
* Ericsson thinks that the HARQ feedback may be dropped due to the TDD pattern so they want to send it as soon as possible. Minimal RRC parameter of deferral is 2 slots. And after 2 slots the network may want to schedule the retransmission so the intention is to ensure the UE is listening to the scheduling.

*Proposal 7. (compromise) “by configuration of simultaneousPUCCH-PUSCH” is replaced by “by configuration of simultaneousPUCCH-PUSCH or simultaneousPUCCH-PUSCH-SecondaryPUCCHgroup”*

* CATT explains that this reduces the scope and we take into account the possibility of SR and PUSCH, but intention was to reference to PHY specification to also cover when this happens to multiple PUSCH. Replace the text by “as specified in 38.213”
* Nokia thinks that it is better to describe directly in MAC spec. Apple also thinks it is clearer to specify.

Proposal 10. (6/11), TP of [R2-2205510](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205510.zip) is agreed as a baseline. Further refinement may be needed according to Proposal 1.

Proposal 11. (diverged view) TP of [R2-2205710](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205710.zip) is not pursued.

[R2-2204665](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204665.zip) Correction on Simultaneous PUCCH/PUSCH Transmission CATT discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2204666](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204666.zip) Corrections on the description of simultaneous PUCCH/PUSCH transmission CATT CR Rel-17 38.321 17.0.0 1226 - F NR\_IIOT\_URLLC\_enh-Core

[R2-2204759](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204759.zip) Correction on the simultaneous PUCCH PUSCH transmission OPPO, Samsung draftCR Rel-17 38.321 17.0.0 F NR\_IIOT\_URLLC\_enh-Core

[R2-2204760](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204760.zip) Open issues on the termination of the CGT OPPO discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2205019](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205019.zip) Correction on duplication activation for survival time state entry Nokia, Nokia Shanghai Bell CR Rel-17 38.300 17.0.0 0450 - F NR\_IIOT\_URLLC\_enh-Core

[R2-2205020](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205020.zip) Correction on duplication activation with UL retransmission grant reception Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.0.0 1246 - F NR\_IIOT\_URLLC\_enh-Core

[R2-2205021](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205021.zip) Corrections on HARQ feedback deferral Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.0.0 1247 - F NR\_IIOT\_URLLC\_enh-Core

[R2-2205460](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205460.zip) Clarification on the SPS HARQ deferral Xiaomi Communications draftCR Rel-17 38.321 17.0.0 F NR\_IIOT\_URLLC\_enh-Core Revised

[R2-2205510](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205510.zip) correction for PDCP duplication with survivalTimeSupport Ericsson, Samsung draftCR Rel-17 38.321 17.0.0 NR\_IIOT\_URLLC\_enh-Core

[R2-2205680](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205680.zip) Impact of Rel-17 PHY prioritization on MAC Apple discussion Rel-17 NR\_IIOT\_URLLC\_enh-Core

[R2-2205681](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205681.zip) Draft CR for impact of Rel-17 PHY prioritization on MAC Apple draftCR Rel-17 38.321 17.0.0 F NR\_IIOT\_URLLC\_enh-Core

[R2-2205711](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205711.zip) Correction of HARQ RTT Timer Handling Samsung draftCR Rel-17 38.321 17.0.0 F NR\_IIOT\_URLLC\_enh-Core Late

[R2-2206028](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206028.zip) Clarification on the SPS HARQ deferral Xiaomi Communications, Samsung draftCR Rel-17 38.321 17.0.0 F NR\_IIOT\_URLLC\_enh-Core [R2-2205460](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205460.zip)

## 6.6 Small Data enhancements

(NR\_SmallData\_INACTIVE-Core; leading WG: RAN2; REL-17; WID: RP-212594)

Tdoc Limitation: 3 tdocs

WI has been declared 100% complete

### 6.6.1 Organizational

Including LSs, rapporteur correction CR and any rapporteur inputs (e.g. from ASN.1 ad-hoc meeting).

[R2-2204431](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204431.zip) NAS's trigger for resume for SDT (C1-221891; contact: OPPO) CT1 LS in Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN2

=> Noted

[R2-2204445](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204445.zip) Reply LS on the physical layer aspects of small data transmission (R1-2202656; contact: ZTE) RAN1 LS in Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN2

=> Noted

[R2-2204455](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204455.zip) Reply LS on Security of Small data transmission (S3-220463; contact: Intel) SA3 LS in Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN2 Cc:RAN3

- Treated last meeting and given that RAN2 agreed to DCCH solution there is no impact SA3 and no need for reply LS

=> Noted

[R2-2205552](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205552.zip) [Draft] LS on the L1 related agreements for SDT ZTE Corporation (rapporteur) LS out Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN1

- Nokia thinks there is no need to send the LS at this point

[CB based on other agreements]

[R2-2205834](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205834.zip) Corrections on SDT Nokia, Nokia Shanghai Bell CR Rel-17 38.300 17.0.0 0465 - F NR\_SmallData\_INACTIVE-Core

=> The changes are agreable

=> Wait for other agreements and continue by email

R2-2206475 LS from RAN1

=> Noted and will be updated in specs

R2-2206497 LS from RAN3

=> Noted

### 6.6.2 User plane common aspects

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big critical issues can be discussed in a contribution with CR in the appendix of the contribution

[R2-2206341](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206341.zip) Summary of the AI 6.6.2 for SDT User Plane Huawei, HiSilicon discussion NR\_SmallData\_INACTIVE-Core

[R2-2206342](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206342.zip) Email discussion for AI 6.6.2 for SDT User Plane Huawei, HiSilicon discussion NR\_SmallData\_INACTIVE-Core

Proposals need further discussion

Proposal14: UE doesn’t need to update Bj once being released to RRC\_INACTIVE and no change is needed for SDT. (18/20 support it)

* Lenovo would like to check whether “no change is correct”. Intel doesn’t think that there is a need a change.

Proposal2: MAC spec should cite a reference to R4 spec for the validity of RSRP and take it as a condition for TA-validation.

* LG thinks that we should wait for RAN4. Huawei thinks that we need to check RAN4 spec anyways so we don’t need to repeat.

[flagged]Proposal17: A CG PUSCH occasion which collides with a PRACH or a MsgA PUSCH occasion should not be used, but the current spec already covers this, hence no change is needed. (18/20 support it)

* Apple would like to align with RAN1 – there is no consensus on this. Huawei explains that RAN1 has already made a conclusion on this. Ericsson explains that PRACH is agreed but not msgA and the impact is the same to us so we can agree to this here.

*Proposal1: RAN2 to discuss whether to capture the following pathloss reference derivation procedure in the MAC spec: (8/20 support to capture it)*

* LG explains this issue was discussed several times and that’s why we sent an LS to R4 so there is nothing to do now. Huawei explains that R4 will not specify how it is derived but just requirements. ZTE understood that there is something already reading in R4.

=> Nothing will be specified for now

*Proposal3: R2 to further discuss:*

1. *UE should derive and store the RSRP for pathloss reference when measObject is configured for the servingCell when the UE moves from RRC\_CONNECTED to RRC\_INACTIVE receiving CG-SDT configuration, even if the UE chooses RA-SDT. (In this way, no spec change is required) (8/20 supports it)*

- LG explains that the majority view is that we should remove measObject.

*(b) The pathloss reference for CG-SDT can be updated by any TAC received when CG-SDT is configured, even for the TAC received during RA-SDT procedure. (5/20 supports it)*

=> Not support it

*Proposal5: The BWP procedures for REDCAP UE is captured in the MAC spec for both CG-SDT and RA-SDT (11/20 support it)*

*Proposal7a: Leave the procedure text for SSB selection for CG-SDT to the MAC CR email discussion.*

- Nokia has a TP and Intel is ok with Nokia TP. Nokia explains that there is a problem with second bullet as there is an ‘or’

=> Nokia’s TP is used as a baseline and continue reviewing offline

**Agreements**

1. MAC spec should cite a reference to R4 spec for the validity of RSRP and take it as a condition for TA-validation (review MAC spec). No spec duplication between RAN2 and RAN4.
2. Stop CGT for the HARQ process corresponding to initial CG-SDT when DL acknowledgement is received.
3. RA procedure can be only initiated during subsequent SDT phase after the NW has received the CCCH message during CG-SDT.
4. PDCCH monitoring for CG-SDT and RA-SDT should be explicitly captured in the MAC spec.
5. CG resource cannot be used for RRCResumeRequest transmission for RNAU purpose if there is not ongoing SDT. (19/20 support it)
6. Do not support support uci-onPUSCH for SDT. Inform RAN1 this and any other agreements.
7. R2 confirms on the following. But, No change is required (20/20)

 When CG-SDT-TAT expires while the UE has not received ack for the initial CG-SDT, UE shall trigger SDT failure and go to RRC\_IDLE

 If cg-SDT-TimeAlignmentTimer expires while the CG-SDT procedure is ongoing and the confirmation of the first uplink transmission has been received successfully, UE should not perform any uplink transmission on CG resource except RACH procedure.

1. R2 confirms the following for RSRP threshold for UL carrier selection. But, no change is required.

 Common threshold RSRP-ThresholdSSB-SUL is used for UL carrier selection for RA-SDT and CG-SDT.

 Don’t introduce a common RSRP threshold for UL carrier for a feature combination.

1. R2 confirms that UE does not perform UL carrier reselection for subsequent CG-SDT transmission over CG-SDT resources within one CG-SDT procedure. No change is required.
2. R2 can confirm that it is up to the network how to configure the logicalChannelSR-Mask value for LCHs of DRBs configured for SDT. (20/20)
3. UE doesn’t need to update Bj once being released to RRC\_INACTIVE. FFS whether a change is needed for SDT and Lenovo can give a TP.
4. For RSRP-based TA validation that there is no need for a condition for “if measObject is configured”
5. When sdt-LogicalChannelSR-DelayTimer is configured, the logicalChannelSR-DelayTimer with the value set to sdt-LogicalChannelSR-DelayTimer for logical channel configured with valid logicalChannelSR-DelayTimerApplied (as captured in RRC) is started for regular BSR triggered during SDT procedure. Align with RRC conclusion.
6. During CG-SDT procedure, the UE does not need to select a CG resource corresponding to different SSB as used for the previous CG-SDT transmission if the previously selected SSB is above the cg-SDT-RSRP-ThresholdSSB threshold
7. Triggering of RA-SDT is done in the RRC layer, hence no change is needed in the MAC spec
8. When none of the SSB is above the RSRP threshold for CG-SDT SSB selection, UE triggers legacy SR/RACH when there is UL data available

*Proposal8: During CG-SDT procedure, the UE does not need to select a CG resource corresponding to different SSB as used for the previous CG-SDT transmission only if the previously selected SSB falls below the cg-SDT-RSRP-ThresholdSSB threshold. (14/20 support it)*

- Even if current SSB is good there may be a mismatch between UE and network. As long as the SSB is good the UE should keep it. Huawei thinks that there is no problem.

- Nokia doesn’t think the UE should be bouncing.

- Samsung doesn’t understand what is the problem with re-selection. Lenovo also doesn’t understand as there is a mapping between CG and SSB. In general, we agree that we shouldn’t reselect if not necessarily. LG has compromise

*During CG-SDT procedure, the UE select a CG resource only if the previously selected SSB falls below the cg-SDT-RSRP-ThresholdSSB threshold.*

*Proposal9: Triggering of RA-SDT is done in the RRC layer, hence no change is needed in the MAC spec. (13/20 support it)*

*Proposal12: Do not change the cancellation of PHR from “shall” to “may” when there is no subsequent data transmission. (15/20 support it). FFS the alignment between BSR and PHR cancellation when there is no subsequent data.*

*Proposal13: When none of the SSB is above the RSRP threshold for CG-SDT SSB selection, UE triggers legacy SR/RACH when there is UL data available. (14/20 support it)*

- LG think the behaviour is correct but specifying the trigger directly in spec is not needed, as we already can do this in current spec. Huawei doesn’t think we can rely on legacy trigger. Nokia too since there might not be new BSR trigger.

- Samsung thinks that we agreed to keep the legacy behaviour and the current CR doesn’t capture it properly.

*Proposal18: Capture the UE behavior for the reception of sdt-DRB-ContinueROHC in the RRC spec (7/13)*

*=> Not agreed*

*Proposal19: Legacy TAT will be started/restarted when TAC MAC CE is received during CG-SDT procedure. (12/20 support it)*

- LG explains that this was already captured as agreed before.

=> keep as is

[R2-2204533](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204533.zip) Corrections to RA Trigger during the ongoing CG-SDT procedure Samsung Electronics Co., Ltd draftCR Rel-17 38.321 17.0.0 NR\_SmallData\_INACTIVE-Core

[R2-2204534](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204534.zip) Corrections to UL TA handling upon Contention resolution during CG-SDT Samsung Electronics Co., Ltd draftCR Rel-17 38.321 17.0.0 NR\_SmallData\_INACTIVE-Core

[R2-2204836](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204836.zip) [V537]-[V540] L1 Parameter Correction for CG-SDT vivo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2204973](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204973.zip) Consideration on UP Remaining Issues of SDT CATT discussion NR\_SmallData\_INACTIVE-Core

[R2-2204983](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204983.zip) Editor's correction to MAC spec for Small Data Transmission Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, ZTE Corporation, Sanechips CR Rel-17 38.321 17.0.0 1243 - F NR\_SmallData\_INACTIVE-Core

=> Revised in [R2-2206066](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206066.zip)

[R2-2206066](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206066.zip) Editor's correction to MAC spec for Small Data Transmission Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, ZTE Corporation, Sanechips CR Rel-17 38.321 17.0.0 1243 1 F NR\_SmallData\_INACTIVE-Core

=> Revised in [R2-2206343](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206343.zip)

[R2-2206343](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206343.zip) Editor's correction to MAC spec for Small Data Transmission Huawei, HiSilicon CR Rel-17 38.321 17.0.0 1243 2 F NR\_SmallData\_INACTIVE-Core

[R2-2205045](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205045.zip) Remaining user plane issues of SDT NEC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205152](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205152.zip) Consideration on Stored RSRP for CG-SDT TA validation CATT discussion NR\_SmallData\_INACTIVE-Core

[R2-2205214](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205214.zip) Remaining UP open issues for SDT Lenovo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205217](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205217.zip) TP for RNAU with CG Type 1 and PDCP control PDU transmission Lenovo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205243](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205243.zip) Remaining issues of SDT UP aspects Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205270](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205270.zip) Discussion on remaining UP issues of SDT OPPO discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205271](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205271.zip) Correction for RACH triggered events OPPO draftCR Rel-17 38.300 17.0.0 NR\_SmallData\_INACTIVE-Core

[R2-2205289](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205289.zip) Correction to TA validation for CG-SDT Huawei, HiSilicon CR Rel-17 38.321 17.0.0 1270 - F NR\_SmallData\_INACTIVE-Core

[R2-2205343](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205343.zip) Collison of PUCCH and PUSCH for SDT Sony discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205550](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205550.zip) User plane open issues for SDT ZTE Corporation, Sanechips discussion Rel-17

[R2-2205588](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205588.zip) CG timer use in CG-SDT procedure Ericsson discussion Rel-17 38.321 NR\_SmallData\_INACTIVE-Core

[R2-2205597](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205597.zip) Validation of CG-SDT occasions Ericsson discussion Rel-17 38.321 NR\_SmallData\_INACTIVE-Core

[R2-2205835](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205835.zip) MAC procedure issues Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.0.0 1286 - F NR\_SmallData\_INACTIVE-Core

[R2-2205836](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205836.zip) UP procedure issues Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205940](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205940.zip) Stage-2 corrections for Small Data Transmission Huawei, HiSilicon draftCR Rel-17 38.300 17.0.0 F NR\_SmallData\_INACTIVE-Core

### 6.6.3 Control plane common aspects

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur.

Big critical issues can be discussed in a contribution with CR in the appendix of the contribution

For quick online discussion on week1

[R2-2204532](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204532.zip) Corrections for paging-emergency SIBs-RRCRelease duriing SDT Samsung Electronics Co., Ltd draftCR Rel-17 38.300 17.0.0 NR\_SmallData\_INACTIVE-Core

- Vodafone is supportive of the CR

=> fix editorials

=> Agreeable with the changes above and merge in rapporteur CR

[R2-2206017](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206017.zip) Introduction of Small Data Transmission into 38.304 vivo CR Rel-17 38.304 17.0.0 0251 - B NR\_SmallData\_INACTIVE-Core

=> moved from 6.6.1

=> The CR is revised in [R2-2206065](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206065.zip)

[R2-2206065](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206065.zip) Alignment of DRX for Paging with RRC for SDT vivo CR Rel-17 38.304 17.0.0 0251 1 F NR\_SmallData\_INACTIVE-Core

=> moved from 6.6.1

- Intel would like to avoid impacting legacy behaviour text

- ZTE thinks that the CR doesn’t need to clarify the behaviour but rather reference 38.331. Ericsson also agrees that a reference is enough. Lenovo and Xiaomi are ok to reference to 38.331

- Nokia is good with the intention but doesn’t want to reference to a timer.

=> Reference 331 only and update wording accordingly

=> The CR is updated in [R2-2206224](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206224.zip)

[R2-2206224](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206224.zip) Alignment of DRX for Paging with RRC for SDT vivo CR Rel-17 38.304 17.0.0 0251 1 F NR\_SmallData\_INACTIVE-Core

[email discussion]

T319a duration handling

[R2-2205244](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205244.zip) Remaining issues of SDT CP aspects Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core

**Proposal 2: The longer value of T319a timer, i.e. 6s or above, is not supported.**

[R2-2205548](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205548.zip) Control plane open issues for SDT ZTE Corporation, Sanechips discussion Rel-17

Observation 1: The max value of T319a (4s) is smaller than the max value of the CG-SDT period (5.12s)

**Proposal 1: A note is captured in RRC to clarify that UE can delay the start of the T319a until the lower layers transmit the message including the CCCH payload**

Observation 2: The T319a still has a smaller maximum value than the maximum value of T319 and the subsequent time duration for which the UE may be in non-DRX mode for legacy resume case

**Proposal 2: RAN2 to consider extension of T319a to a maximum of 6sec.**

[R2-2205819](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205819.zip) [I511] T319a maximum range Intel Corporation, Sony discussion Rel-17 NR\_SmallData\_INACTIVE-Core

*Observation 1. UE’s power consumption can drastically increase when using large values of T319a. In our understanding, the maximum value of T319a should be rather short.*

*Observation 2. Companies that prefer larger values of T319a (e.g. 6 or 10sec) aim to allow multiple UL/DL SDT exchanges during a given SDT session vs those that prefer smaller values of T319a (e.g. 1 or 2 sec) aim to reduce UE’s unnecessary power consumption.*

*Observation 3. Considering the concerns raised to the maximum range of T319a on UE’s power consumption and being able to exchange multiple UL/DL SDT during an SDT session, it could also be reconsidered defining T319a to be re-started with every reception and (re)transmission within a given SDT session instead of having to limit the length of a given SDT session.*

***Proposal 1. Define maximum range of T319a up to 3 seconds.***

Discussion

- Apple, Lenovo agrees with QC. ZTE, Vivo is ok with 4s.

- Ericsson thinks that it will help with error cases

- Vodafone sees the power saving benefit with 3s. ZTEs proposal doesn’t fix the problem and its better to keep the 6s.

- ZTE thinks that proposal 1 helps with the battery savings

- CATT thinks 6s is acceptable and proposal 1 from ZTE is not needed

- Huawei thinks that the current timer is fine and doesn’t need to be extended. Proposal 1 from ZTE is acceptable. QC also agrees with P1 and it is good to have such clarification.

- LG prefers maximum of 6s. Xiaomi, InterDigital, Samsung, Nokia is fine with 6s. InterDigital explains that we have the agreement to not restart the timer so we would need a larger timer.

- Nokia is not sure how P1 works as CCCH message can also be lost and network will be out of synch. ZTE acknowledges that it can happen and then you would retransmit and T319a will expire and it is anyways an error case.

- LG, InterDigital is also fine with P1 and Intel is fine with the intention but wants to ensure that it will work with current RACH.

- Samsung thinks that we can update P1 to apply this only for CG-SDT. LG is not sure how RRC would differentiate between the two. ZTE explains that it doesn’t know but it would be a note for UE implementation.

- Apple thinks that P1 should be general to other timers

- Vivo thinks P1 can be left to UE implementation

- Huawei thinks that if we go to larger timers we would need to rediscuss how we use the timer.

- Ericsson, InterDigital and LG really think that 6s is important for error cases and difference between 4s and 6s is negligible for battery savings. Nokia agrees. InterDigital thinks that operator can chose smaller value anyways.

- Apple thinks that if we go to 6s we should introduce a UE capability, as UE power is a concern. ZTE thinks that it could work. Qualcomm thinks that we already compromised to a large value. They would be ok with UE capabilities but we should revisit the short values.

- Intel thinks that UE can also be moving during the 6s and we would have more failures for SDT.

**Agreements**

1 Captured in RRC to clarify that UE can delay the start of the T319a until the lower layers transmit the message including the CCCH payload. FFS how it is captured and whether/how it is limited to CG-SDT

2 Baseline, max timer value is 4s. FFS if there is a compromise for 6s (i.e. have the restart mechanism or UE capability)

3 The UE doesn’t skip the UAC procedure

NAS issues

UAC skipping

[R2-2205221](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205221.zip) TP for the PDCP control PDU transmission and UAC with CG Type 1 Lenovo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

Proposal 4: The access attempt is considered as allowed if the pre-configured CG resources are configured for SDT and the arrival data corresponds to the configured SDT DRB/SRB.

=> Noted

[R2-2205670](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205670.zip) UAC operation during the CG-SDT procedure (RIL A006) Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

Proposal: Skip the UAC procedure if the RRC resume procedure is initiated for CG-SDT.

Discussion

- ZTE thinks that we shouldn’t skip as it is not only for radio conditions and there could be congestion in the network. NEC and large number of companies also agree with ZTE

=> Noted

Other NAS issues

[R2-2205043](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205043.zip) UAC upon non-SDT data arrival NEC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

Proposal 1: Upon arrival of non-SDT data, if requested by NAS layer, UAC procedure should be performed.

- Intel thinks that we with the current spec the UE wouldn’t do UAC and no agreement is needed

=> No change to existing spec is needed

Proposal 2: If the access attempt of the new non-SDT data is barred, the UE does not send UAI indicating arrival of non-SDT data to the network.

=> No change to existing spec is needed

[R2-2205354](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205354.zip) Discussion on the NAS aspects of Small Data Transmission Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

Proposal 1: When the UE is configured with SDT configuration, the NAS layer needs to indicate to the RRC layer whether the UL NAS message belongs to a non-time critical Type 1 NAS message category or to a time critical Type 2 NAS message category.

Proposal 2: Based on this indication from the UE NAS layer, the UE RRC layer shall decide whether it should initiate NAS message transfer using the SDT mechanism or initiate the legacy RRC Resume procedure and transition to RRC\_CONNECTED state before transmitting the NAS message.

Proposal 3: When the UE is configured with SDT configuration, time critical Type 2 NAS procedures should not be initiated using SDT Mechanism in RRC\_INACTIVE state as the SDT procedure will have to be terminated and the UE will have to be transitioned to RRC\_CONNECTED state in the middle of the NAS procedure followed by a RRCReconfiguration procedure which will cause additional delay that will not be acceptable for time critical call such as an emergency call

Proposal 4: RAN 2 to inform CT1 about the need of such indication as discussed in proposal above through a LS

*Discussion*

- Intel remembers that the discussion in the past it was concluded that we don’t specify the interaction and if there is a need it has to come from CT1. There was a lot of divergence in CT1 and conclusion that it was up to UE implementation. Huawei thinks that they thought that RAN2 should discuss any issues.

- Apple thinks that this is very difficult for RAN2 to discus it. Vivo also thinks that there was no consensus in CT1 so we should leave it to there. Vodafone agrees

- ZTE thinks that it is late at this stage to agree. Maybe we can have a little note that the UE is allow to not initiate an SDT in case there is emergency. ZTE explains that if emergency is configured in SRB2 then it may trigger SDT. Intel thinks that it is up to the UE to initiate SD. Nokia is ok with the note. Intel thinks that the initiation of SDT is relaxed and it can always decide what it does. Ericsson is ok with the note if srb2 configured for srb2.

- Huawei asks if we can send an LS to identify this scenario to CT1. Intel explains that we have send already 2 LSs to CT1

- LG asks if it is allowed for the UE to terminate the ongoing SDT procedure. ZTE confirms. Huawei explains that there is a penalty associated to it anchor relocation.

=> Noted

[R2-2206481](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206481.zip) Report of summary 501 ZTE

Proposals that may need further discussion

Proposal 1: For the start of T319a, capture the following note (10/19)

Note: The UE, in case of CG-SDT, delays the start of the timer T319a until lower layers transmit the CCCH message

- Nokia thinks that the note should be normative and it should be the same for RACH. Nokia thinks that we may have synchronization issues.

- Apple doesn’t see the need the need for RA SDT and wants to align with T319. Apple explains that the procedure is different from legacy.

Proposal 2: Extend the T319a value to 6 s and add a UE Capability for this new code point (9/19 prefer, 17/19 can accept)

- Nokia is concerned with the UE capability as the network need to handle the different behaviors. Ericsson indicates the capability makes it unusable in practice.

- Apple thinks that the capability is needed. Qualcomm and Huawei as well.

=> No agreement to extend to 6s (keep to 4s)

Proposal 3: Update the following note in section 5.2.2.3.1 as below:

NOTE: The UE in RRC\_CONNECTED is only required to acquire broadcasted *SIB1* if the UE can acquire it without disrupting unicast or MBS multicast data reception, i.e. the broadcast and unicast/MBS multicast beams are quasi co-located. While the T319a is running, UE is only required to acquire broadcasted *SIB1 and MIB* if the UE can acquire it without disrupting unicast or MBS multicast data reception, i.e. the broadcast and unicast/MBS multicast beams are quasi co-located.

=> Agreed with multicast removed

Proposal 4: For I507 the following modification is made (9/15)

*3> for each ~~of the~~ RLC bearer that is not suspended ~~that is part of the UE configuration~~:*

*4> re-establish the RLC entity as specified in TS 38.322 [4];*

=> Agreed

Proposal 6: Add the notes to clarify that it is up to UE implementation to determine whether the pending data in UL is mapped to SDT radio bearers.Similar note also added for non-SDT data arrival indication

**Agreements**

* 1. Make the change such that SRB1 uses stored configuration
	2. Updates to SRS-PosRRC-InactiveConfig (see I512) should be discussed as part of CB in positioning session considering the comments made about the RAN3 impacts
	3. Inform RAN1 that the sdt-CG-SearchSpace-r17 doesn’t exist in RRC and instead we configure the new search space using the RRCRelease message (but no new name is introduced) – (8/9)
	4. No choice structure is introduced for the separate search space configuration for SDT we can inform RAN1 about this
	5. Capture the following in normative text “The UE, in case of SDT, the UE starts the timer T319a when lower layers transmit the CCCH message”. FFS if there is synchronization issues
	6. Add the notes to clarify that it is up to UE implementation to determine whether the pending data in UL is mapped to SDT radio bearers.Similar note also added for non-SDT data arrival indication
	7. UE starts legacy TAT upon moving to RRCResume if the TAT is not running (as implemented in R2-2205549)
	8. SDUs of SRB2 are discarded upon RRCReject
	9. (For H562) implement it in RAN2 container – inform RAN3
	10. Clarify that the RLC configuration (including the logicalChannelGroup, logicalChannelSR-DelayTimerApplied, logicalChannelSR-Mask) is restored from the UE Inactive AS context – detailed wording can be discussed as part of CR review.

Proposal 8: UE starts legacy TAT upon moving to RRCResume if the TAT is not running (as implemented in R2-2205549) – 14/16

Proposal 9: SDUs of SRB2 are discarded upon RRCReject (9/15)

Proposal 13: (For H562) RAN2 waits for RAN3 discussion to conclude regarding the separate container vs Xn signalling for the missing SDT-Config

- Intel has a different understanding than ZTE. RAN3 created a field but the final decision is up to RAN2. Intel thinks that it is better to be defined as part of the handover preparation and it better to be under RRC control. Huawei has same view as Intel and RAN3 didn’t consider that we are using this for delta signaling. RRC internal message is better for delta signaling. ZTE indicates that delta signaling is possible for both options. Huawei and Intel agrees that it can be done in both places but it makes basestation implementation difficult. Ericsson indicates that both work but sympathizes with Intel and Huawei.

=> Implement this in RAN2 container and indicate to RAN3 that we are doing it this way.

Proposal 15: Clarify that the RLC configuration (including the logicalChannelGroup, logicalChannelSR-DelayTimerApplied, logicalChannelSR-Mask) is restored from the UE Inactive AS context – detailed wording can be discussed as part of CR review.

Proposal 16: Discuss need R (6/8) vs need S (2/8) for sdt-DRB-ContinueROHC and sdt-LogicalChannelSR-DelayTimer

- Huawei thinks that the only difference is that for need S we just need to describe UE behaviour. InterDigital also agrees that Need S is correct as long we describe UE behaviour. If we use Need R we should remove the UE behaviour. ZTE explains that it is for the absence case. Huawei explains that absence and not configured is the same for Need S and Need R fields, only difference is for Need M fields

=> highlight to overall RRC rapporteur

[R2-2204835](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204835.zip) [V534][V536] RRC Procedural Corrections for SDT vivo discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2204972](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204972.zip) Further considerations upon reception of RRC Release CATT discussion NR\_SmallData\_INACTIVE-Core Late

[R2-2204984](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204984.zip) [H549] Correction for restoring the logical channel configuration from UE context Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3022 - F NR\_SmallData\_INACTIVE-Core

[R2-2204985](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2204985.zip) [H559] Correction for transitition to RRC\_CONNECTED for SDT Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3023 - F NR\_SmallData\_INACTIVE-Core

[R2-2205044](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205044.zip) [W002][W005] Control plane issues of SDT NEC discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205355](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205355.zip) [H562] Correction for internode message for SDT Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3073 - F NR\_SmallData\_INACTIVE-Core

[R2-2205459](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205459.zip) RIL(X304) Clarification on the cell configured for CG-SDT Xiaomi Communications discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205549](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205549.zip) SDT RRC Corrections ZTE Corporation (rapporteur) CR Rel-17 38.331 17.0.0 3100 - F NR\_SmallData\_INACTIVE-Core Late

[R2-2205551](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205551.zip) RRC RIL issue summary for SDT ZTE Corporation (rapporteur) report Late

[R2-2205590](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205590.zip) Actions on receiving indication of failure to perform SDT procedure Ericsson discussion Rel-17 38.331 NR\_SmallData\_INACTIVE-Core

[R2-2205668](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205668.zip) SDT related RIL Issues (RIL A000, A001, A002, A003, A004, A005,A007) Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205669](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205669.zip) SDT TAT related RIL Issue (RIL A019) Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205788](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205788.zip) SDT CP procedure issues Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SmallData\_INACTIVE

[R2-2205818](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205818.zip) [I503] Reception of RRCRelease for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205820](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205820.zip) [I505] Search space for pdcch-Config of CG-SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205821](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205821.zip) [I508] Introduction of SDT in resume procedure Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205822](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205822.zip) [506] Signaling allowed during SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205823](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205823.zip) [I507] Clarify the reference to “part of the UE configuration” in the procedural text Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205824](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205824.zip) [I512] [I010] SRS Positioning configuration provided for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2205825](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205825.zip) [I513] Clarification of SRB1 configuration used for SDT Intel Corporation discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2206125](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206125.zip) Discussion on Need S versus Need R for some SDT fields (RIL: H551, H556) Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2206335](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206335.zip) Actions on receiving indication of failure to perform SDT procedure Ericsson discussion Rel-17 38.331 NR\_SmallData\_INACTIVE-Core

## 6.18 RACH indication and partitioning

Tdoc Limitation: 2 tdocs

Expected to cover WIs SDT, CovEnh, RedCap, RAN slicing. RA specific aspects from the different WI should be covered in this AI given the RA experts are all there.

### 6.18.1 Common signalling framework

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed in a contributions with CR in the appendix of the contribution

R2-2206221 Summary of control plane issues Ericsson

*Proposal 1*

- Huawei thinks we shouldn’t call it RACH common and change the name to something more appropriate. Ericsson proposes additional RACH config?

*Proposal 2 Delete the extension marker and the field laterThanRel17Features from FeatureCombination IE and use spare fields for future extendibility.*

- Nokia asks if we would somehow define how we use the spares for future. Ericsson confirms that we just put them as spares and have possibility to extend in the future. Xiaomi prefers not to use any extension marker to the spare value. CATT explains that we need to discuss the number of spare values. Ericsson explains that the extension markers one IE above it makes it more complex.

*Proposal 3 Add a non-critical extension (i.e., extension marker) in the FeatureCombinationPreambles IE.*

*Proposal 4 RAN2 to discuss whether to add msgA-RSRP-Threshold (without SSB suffix).*

- Huawei explains that this is based on the SDT agreement that the threshold can be different. Vivo agrees with Huawei and if configured the UE should use this threshold. Maybe we need to also include the threshold for CE.

*Proposal 5 RAN2 to discuss whether to allow partition-specific PUSCH resources.*

- Huawei explains that this would be beneficial for SDT. Vivo and LG also agrees. Ericsson has a clarification that we can decided not to provide then we can use the general one provided

*Proposal 6 Adopt the proposal in L019 but add an extension marker in IE FeatureSpecificParameters, rather than in the featureSpecificParameters-wrapper in this IE.*

- LG doesn’t think we need 6

*Proposal 8 Discuss addition of the fields feature-RA-PrioritizationForAccessIdentity-r17 and ra-PrioritizationForAccessIdentity-r16 and verify if it is clear how the UE selects.*

- LG is not sure we need specific parameters for slicing and there is still discussions, prefer to come back after slicing discussion.

- Nokia indicates that RA prioritization can work independently without RA partitioning and will be configure for slice group ID and it is different from legacy prioritization. If we further introduce this then we have a clash.

*Proposal 10 RAN2 to discuss RIL Z379 futher.*

- ZTE questions the need for new IE, feature agnostic RACH resources that are not available for legacy UEs. Ericsson explains that this is needed anyways.

=> Noted

Agreement

1. Use SetupRelease-structure, similar to the legacy RACH config. And call the field/IEs "list" as they provide a list of additional RACH configurations. Update IE name accordingly
2. Delete the extension marker and the field laterThanRel17Features from FeatureCombination IE and use spare fields for future extendibility. FFS the number of spare values
3. Add a non-critical extension (i.e., extension marker) in the FeatureCombinationPreambles IE
4. Add msgA-RSRP-Threshold (without SSB suffix) in partition
5. Allow partition-specific msgA PUSCH resources. If not provided we use the general PUSCH
6. rsrp-ThresholdMsg3 is put in BWP-UplinkCommon, editor’s note is removed, and field description is added.
7. FFS pending slicing discussion - add fields feature-RA-PrioritizationForAccessIdentity-r17 and ra-PrioritizationForAccessIdentity-r16 and verify if it is clear how the UE selects. Ask question in email discussion for other non-slicing features
8. Change the name of the field "featureCombinationPreambles" to "featureCombinationPreamblesList"

[R2-2206432](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206432.zip) Report of [AT118-e][507][RA Part] CP open issues (Ericsson)

=> Noted

Agreements

1   Adopt H537 with the additional correction.

2   Implement H902 with the addition of “and all RACH configurations” in field description.

3   Implement H904 with the addition from HW. Discuss additional changes for legacy text with CR

4  Adopt the text proposal using 4 spares in FeautureCombination IE.

5 dd extension markers in FeatureCombinationPreambles (outside wrapper sequence of featureSpecificParameters).

6 Adopt the proposal in H904 to capture that the field is mandatory if there are both 2-step and 4-step RA resources for a particular feature combination in a BWP.

7 No additions or changes are introduced for signalling which configuration to use when fallback from CFRA in 38.331, at this point based on the previous agreement.

8 Adopt the text proposals for rsrp-ThresholdMsg3 in BWP-UplinkCommon above with the editorial correction “The field is mandatory if both set(s) of Random Access resources with MSG3 repetition indication and set(s) of Random Access resources without MSG3 repetition indication are configured in the BWP. It is absent otherwise”.

9 The IE feature-RA-PrioritizationForAccessIdentity is not added for general RA partitioning

10 As a baseline no RACH partitioning specific capability is defined

Discussions

Proposal 4           Adopt the text proposals for rsrp-ThresholdMsg3 in BWP-UplinkCommon above with the editorial correction “The field is mandatory if both set(s) of Random Access resources with MSG3 repetition indication and set(s) of Random Access resources without MSG3 repetition indication are configured in the BWP. It is absent otherwise”.

* ZTE and Vivo thinks this is reasonable. LG prefers to set the value to infinity to minimize the exceptional cases as much as possible. ZTE also thought originally that it would have been nice and prevent MAC changes but it would be a bit risky as in some old implementation there are problems where conditions still pass when we set values to infinity, so would like to avoid this. Oppo wonders if we need to update the MAC specifications. ZTE confirms and has already implemented it.
* Huawei has a preference for proposal 4 as it adds less overhead

Proposal 5           Discuss addition of the fields feature-RA-PrioritizationForAccessIdentity-r17 and ra-PrioritizationForAccessIdentity-r16 and verify if it is clear how the UE selects.

* Nokia explains that this is a newly agreed optimization that is bringing new issues. For slicing we have agreed that we will have prioritization for slicegroupID and now we have a clash. It might be better to not have this optimizations for this feature and just keep it for slicing. Huawei and LG agree with Nokia.

Proposal 10         As a baseline no RACH partitioning specific capability is defined. RAN2 to discuss further if additional capabilities are needed in addition to the per feature capabilities.

* Ericsson explains that the majority feel that existing feature capabilities are enough.
* Qualcomm thinks that a capability is required as for example for RedCap the UE can read the RA config in SIB1 and can perform access on common RA and doesn’t need RICS.
* ZTE had in mind that if the UE supports a feature that requires RA partitioning then the UE has to support RICS. C
* Huawei agrees with ZTE and understands Qualcomm but not sure why we need the capability as the UE would have to support the indication if it supports the combination of features. LG agrees with Huawei and ZTE.

[R2-2206431](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206431.zip) CR#3177 38.331 Correction for features applicable for RACH Partitioning

[R2-2206433](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206433.zip) RIL -list

[R2-2205469](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205469.zip) [C153] The extension solution with bit string for FeatureCombination CATT discussion Rel-17 NR\_cov\_enh-Core, NR\_slice-Core, NR\_SmallData\_INACTIVE-Core, NR\_redcap-Core Late

[R2-2205677](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205677.zip) Clarification on the RACH partition selection (RIL A022) Apple discussion Rel-17 NR\_SmallData\_INACTIVE-Core, NR\_cov\_enh-Core, NR\_redcap-Core, NR\_slice-Core

[R2-2206105](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206105.zip) Feature extension without using extension marker LG Electronics Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core, NR\_slice-Core, NR\_redcap-Core, NR\_cov\_enh-Core

[R2-2206126](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206126.zip) Miscellaneous corrections to RRC specifications for RACH partitioning (RIL: H538, H900, H901, H902) Huawei, HiSilicon draftCR Rel-17 38.331 17.0.0 F NR\_SmallData\_INACTIVE-Core, NR\_slice-Core, NR\_redcap-Core, NR\_cov\_enh-Core

[R2-2206127](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206127.zip) Corrections on handling of per feature combination parameters (RIL: H535, H536, H542, H903, H904) Huawei, HiSilicon draftCR Rel-17 38.331 17.0.0 F NR\_SmallData\_INACTIVE-Core, NR\_slice-Core, NR\_redcap-Core, NR\_cov\_enh-Core

### 6.18.2 Common aspects of RACH procedure

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed with contributions with CR in the appendix of the contribution

[R2-2206482](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2206482.zip) [AT118-e][508][RA Part] UP open issues and CR 38.321 (ZTE) – Report ZTE

Agreements

1 Delete the following notes from MAC spec and incorporate corresponding text into RRC (e.g. field descriptions)

NOTE 4: The network configures the same value for rsrp-ThresholdSSB-SUL in all BWPs. So, the UE can obtain this parameter from any Random Access configuration.

NOTE: On a given BWP, the network configures the same value for rsrp-ThresholdMsg3. So, the UE can obtain this parameter from any Random Access configuration within the BWP selected for the Random Access procedure.

2 Indicating a non-triggered feature is not allowed (no changes to MAC spec)

3 Merge other changes in R2-2205840 (except the Issue 7 and issues related to proposal 3) into the running CR

4 Merge changes in R2-2205553 into the running CR

– Note that some alignment with other agreeable TPs is needed and will be done by rapporteur (for all the agreeable proposals)

1. Merge changes in R2-2205941 into the running CR
2. Changes in R2-2205470 and in R2-2205942 are not pursued. Any further small clarification needed can be done during CR review phase.

8 For the fallback cases from CFRA to CBRA, RedCap UE should select the RedCap specific RACH resource, if it is configured (adopt the text similar to the one in R2-2205941)

May need some online discussion but likely agreeable

Proposal 1: Changes in R2-2205470 and in R2-2205942 are not pursued

* Huawei felt that the companies were quite ok with a potential clarification, but if we don’t want to change that much we should clarify that the resources there are selected and not available. ZTE indicates that some updates were done and we can discuss in the CR.

Proposal 3: For the fallback cases from CFRA to CBRA, RedCap UE should select the RedCap specific RACH resource, if it is configured (adopt the text similar to the one in R2-2205941)

**Relation between resource selection in RA and SDT**

[R2-2205470](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205470.zip) Consideration on UP Remaining Issues of RACH common CATT discussion Rel-17 NR\_cov\_enh-Core, NR\_slice-Core, NR\_SmallData\_INACTIVE-Core, NR\_redcap-Core

Proposal 1: SUL selection in RA-SDT should be considered in the RACH common procedure.

[R2-2205942](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205942.zip) Correction to RACH procedure with SDT applicability Huawei, HiSilicon draftCR Rel-17 38.321 17.0.0 F NR\_SmallData\_INACTIVE-Core, NR\_slice-Core, NR\_redcap-Core, NR\_cov\_enh-Core

[R2-2205486](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205486.zip) Correction on fallback cases from CFRA to CBRA for RedCap UE LG Electronics Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core, NR\_slice-Core, NR\_redcap-Core, NR\_cov\_enh-Core

Proposal 1: Clarify in section 5.27.1 that UE selects Random Access resource according to 5.1.1b (instead of UE just checking the availability of RA-SDT resources), i.e. SDT is only initiated when the feature indication associated with the selected set of Random Access resources includes SDT.

Proposal 2: In 5.1.1, clarify that the selection of the set of Random Access resources takes place only in case they were not selected previously during SDT validity check.

General framework

[R2-2205876](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205876.zip) Feature Prioritization for RACH Partitioning Ericsson discussion Rel-17

[R2-2205553](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205553.zip) MAC Corrections for RACH partitioning ZTE Corporation (rapporteur) CR Rel-17 38.321 17.0.0 1273 - F NR\_redcap-Core, NR\_SmallData\_INACTIVE-Core, NR\_cov\_enh-Core, NR\_slice-Core

[R2-2205839](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205839.zip) Introduction of RACH partitioning Nokia, Nokia Shanghai Bell CR Rel-17 38.300 17.0.0 0466 - F NR\_SmallData\_INACTIVE-Core

[R2-2205840](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205840.zip) RACH partitioning MAC issues Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.0.0 1288 - F NR\_SmallData\_INACTIVE-Core

[R2-2205941](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_118-e%5CDocs%5CR2-2205941.zip) Various corrections to MAC spec for RACH partitioning Huawei, HiSilicon draftCR Rel-17 38.321 17.0.0 F NR\_SmallData\_INACTIVE-Core, NR\_slice-Core, NR\_redcap-Core, NR\_cov\_enh-Core