3GPP TSG-RAN WG2 Meeting #120 [R2-2xxxxxx](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2xxxxxx.zip)

Toulouse, France, November, 2022

Source: Session Chair (InterDigital)

Title: Report from Session on NES, UAV, Small Data, Rel-15-17 UP, Rel-17 Small Data, IIoT/URLLC, and RACH partitioning

**Email discussions:**

* [AT120][300] Organizational Diana – NES and UAV]

Scope:

* + - Share plans for the meetings and list of ongoing email discussions for the sessions related to Rel-17 URLLC/IIoT, Small data, RA Partitioning, R15-16 UP, Rel-18 UAV and NES
    - Share meetings notes and agreements for review and endorsement

Closed

* [PRE1120][305][NES] Summary of Others – 8.3.6 (Huawei)
* [AT120][301][NES] Summary of DTX/DRX – 8.3.2 (InterDigital)
* [AT120][302][NES] Summary of SSB/SIBless/Paging – 8.3.3 (Ericsson)
* [AT120][303][NES] Summary of Cell Selection/Reselection – 8.3.4 (Apple)
* [AT120][304][NES] Summary of Connected Mode Mobility – 8.3.5 (Nokia)

Post Meeting

* [AT120][306][NES] Merged TP (Huawei)

- Scope; agree to RAN2 TP capturing agreements from RAN2

- Agree to LS to RAN1

- Deadline- Nov 21

Post Short email discussion

* [AT120][307][R17 SDT] Correction CR to 38.331 (ZTE)
* [AT120][308][R17 SDT] Correction CR to 38.321 (Huawei)
* [AT120][309][R17 SDT] Repetition capability CR (Intel) – 4 days
* [AT120][310][R18 URLLC] Response LS to SA2 on low latency (Huawei)
* [AT120][311][ R18 URLLC] Response LS to SA2 on TSS notification (Huawei)

# 5 NR Rel-15 and Rel-16

Essential corrections only.

Tdoc Limitation: 10 tdocs in total for all sub agenda items.

### 5.1.2 User Plane corrections

User Plane corrections will be handled in a break out session

[R2-2212117](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212117.zip) Alignment of procedural text for PDCP control PDU handling Huawei, HiSilicon CR Rel-17 38.323 17.2.0 0107 - A NR\_newRAT-Core

[R2-2212118](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212118.zip) Alignment of procedural text for PDCP control PDU handling Huawei, HiSilicon CR Rel-16 38.323 16.7.0 0108 - A NR\_newRAT-Core

[R2-2212119](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212119.zip) Alignment of procedural text for PDCP control PDU handling Huawei, HiSilicon CR Rel-15 38.323 15.8.0 0109 - F NR\_newRAT-Core

- Oppo thinks that this is an editorial and doesn’t think the spec is broken

- LG thinks that there is nothing broken and no clarification.

- LG clarifies that in LTE spec some text is missing so we may need a CR in LTE specification.

=> The CR is not pursued

#### 5.1.2.1 MAC

[R2-2212138](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212138.zip) Clarification on HARQ buffers flushing Samsung R&D Institute India CR Rel-15 38.321 15.13.0 1485 - F NR\_newRAT-Core

- Nokia explains that HARQ is by definition UL and we use soft buffer for DL.

- Vivo also thinks that there is nothing to clarify and if we do this then we need to look at DL

- LG supports this change as it is beneficial to clarify. Xiaomi thinks that this is needed and we had a problem with MBS so it would be good to fix.

- Lenovo agrees with Nokia, we have had this discussion before and it is very clear what HARQ buffer is.

- Ericsson agrees with this change, when HARQ buffer is flushed it is always written for the DL soft buffers.

- Apple thinks that this change is not essential and it is very clear.

- Oppo explains that it was discussed in MBS and it was already clarified and this change is not needed

=> The CR is not pursued

[R2-2212140](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212140.zip) Clarification on HARQ buffers flushing Samsung R&D Institute India CR Rel-16 38.321 16.10.0 1486 - A NR\_newRAT-Core

[R2-2212141](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212141.zip) Clarification on HARQ buffers flushing Samsung R&D Institute India CR Rel-17 38.321 17.2.0 1487 - A NR\_newRAT-Core

[R2-2212860](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212860.zip) Correction on Type 1 CG occasion determination at BWP activation Samsung CR Rel-16 38.321 16.10.0 1496 - F NR\_IIOT-Core, 5G\_V2X\_NRSL-Core

- Qualcomm thinks that this in NBC and we should leave it as is, be we can discuss for Rel-18, but resume is not the right way.

- Nokia agrees with Qualcomm that it is NBC and if we do it actually has to be done from Rel-16 to have same behaviour and it is not essential. Ericsson has the same understanding and it is a conrner case and it will still be ambiguous from the network side. Lenovo and ZTE agree.

- Apple thinks it is not needed and it is a burden for UE to keep the history.

- ZTE explains that the UE will re-calculate the occasions, even if the periodicity is the same. If we change it there will be ambiguity.

=> RAN2 understanding is that the UE re-calculates the CG occasion and not CR needed

=> The CR is not pursued

[R2-2212861](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212861.zip) Correction on Type 1 CG occasion determination at BWP activation Samsung CR Rel-17 38.321 17.2.0 1497 - A NR\_IIOT-Core, 5G\_V2X\_NRSL-Core

[R2-2212862](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212862.zip) Correction to avoid overwriting of MAC PDU in AutonomousTx Samsung CR Rel-16 38.321 16.10.0 1498 - F NR\_IIOT-Core

- LG thinks that even storing the same thing there is no problem and the implementation can handle

=> The CR is not pursued

[R2-2212863](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212863.zip) Correction to avoid overwriting of MAC PDU in AutonomousTx Samsung CR Rel-17 38.321 17.2.0 1499 - A NR\_IIOT-Core

#### 5.1.2.2 RLC PDCP SDAP BAP

[R2-2212761](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212761.zip) Data volume calculation LG Electronics Inc. CR Rel-16 38.323 16.7.0 0110 - F NR\_Mob\_enh-Core

- Ericsson is concerned that if we fix this it will be mixed between UEs so the network will not know what the UE is doing.

=> The CR is agreed

[R2-2212762](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212762.zip) Data volume calculation LG Electronics Inc. CR Rel-17 38.323 17.2.0 0111 - A NR\_Mob\_enh-Core

=> The CR is agreed

# 6 NR Rel-17

## 6.0 General

This AI covers corrections to all NR Rel-17 Work Items, but shall only be used for aspects that does not fit under other more specific AIs, e.g. multi-WI aspects.

### 6.0.3 User Plane related aspects

E.g. cross WI coordination on MAC CEs.

This AI will be handled in a break-out session.

[R2-2211447](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211447.zip) Discussion on EHC for DAPS CATT, CMCC discussion Rel-17 NR\_Mob\_enh-Core, NR\_IIOT-Core

Proposal 1: TSN can be configured together with DAPS in Rel-17.

Proposal 2: EHC can be configured together with DAPS in Rel-17.

- LG thinks this is new functionality and it is too late for Rel-17.

- Mediatek thinks that this is a TEI and we shouldn’t add more features into this release.

- Ericsson thinks it is more a TEI18

=> No support for Rel-17

[R2-2211448](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211448.zip) CR to 38.331 on Configuration EHC for DAPS CATT, CMCC CR Rel-17 38.331 17.2.0 3601 - F NR\_Mob\_enh-Core, NR\_IIOT-Core

[R2-2211449](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211449.zip) CR to 38.323 on Configuration EHC for DAPS CATT, CMCC CR Rel-17 38.323 17.2.0 0106 - F NR\_Mob\_enh-Core, NR\_IIOT-Core

## 6.5 NR IIoT URLLC

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

Tdoc Limitation: 2 tdocs

### 6.5.1 Organizational

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

### 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

[R2-2211552](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211552.zip) Correction to PDC in RRC Huawei, HiSilicon CR Rel-17 38.331 17.2.0 3614 - F NR\_IIOT\_URLLC\_enh-Core

=> Upon receiving this field, the UE calculates the propagation delay based on the RTT-based PDC mechanism method as described in 38.300

=> the CR is agreed in [R2-221307](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213075.zip)8 with the change above

### 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

[R2-2211722](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211722.zip) Discussion on CG timer aspects Apple discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2211723](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211723.zip) Clarification for a DG overruling a CG Apple CR Rel-17 38.321 17.2.0 1471 - F NR\_IIOT\_URLLC\_enh-Core

=> The CR is not pursued

## 6.6 Small Data enhancements

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

Tdoc Limitation: 2 tdocs

[R2-2211104](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211104.zip) Reply LS on common search space for small data transmission (R1-2208107; contact: ZTE) RAN1 LS in Rel-17 NR\_SmallData\_INACTIVE-Core To:RAN2

- ZTE explains that there is a clarification that is already in the rapporteur CR

=> Noted

### 6.6.1 Organizational

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

[R2-2212874](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212874.zip) Correction for SDT Stage-2 Nokia, Nokia Shanghai Bell CR Rel-17 38.300 17.2.0 0595 - F NR\_SmallData\_INACTIVE-Core

- Intel agrees with the intention but ask a question about what is SDT failure detection and if we need some description. Nokia thinks that we can make the relation between them in 38.331.

=> 38.331 Rapporteur to make the connection for the time and SDT failure in the CR

=> Update wording to maximum duration instead of length

=> Add reference in the text to the section where SDT failure is defined

=> The CR is agreed in [R2-221307](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213075.zip)9 with the change above

### 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

**2-stepRA for TA expiry during subsequent CG-SDT**

[R2-2211174](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211174.zip) Corrections for RA during CG-SDT procedure Samsung Electronics Co., Ltd draftCR Rel-17 38.321 17.2.0 NR\_SmallData\_INACTIVE-Core

- Intel agrees that the scenario needs to be solved and wonders if there are other scenarios where the timer is running but the UE cannot use the CG.

- Samsung explains that once the network sends the TA MAC CE the UE should be able to use and have a valid TA and it is important that UE process it.

- Huawei thinks that this is correct and it is aligned with legacy two spec RACH. Lenovo is also ok with the change but in theory the network the TA command.

=> The CR is agreed and merged with rapporteur CR

**Initial CG-SDT transmission without CG-SDT-RT**

[R2-2211265](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211265.zip) Correction to CG-SDT without retransmission timer Huawei, HiSilicon CR Rel-17 38.321 17.2.0 1452 - F NR\_SmallData\_INACTIVE-Core

- Apple doesn’t think the CR is needed

- Ericsson thinks that the UE behavior is quite clear if we consider

=> The common understanding is that this case is covered under “3>if there is no on-going CG-SDT procedure”

=> The CR is not pursued

**SSB evalation with REDCAP separate BWP for CG-SDT**

[R2-2212200](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212200.zip) Discussion the SSB evaluation in CG-SDT for RedCap UE Qualcomm Incorporated discussion Rel-17 NR\_SmallData\_INACTIVE-Core

*Proposal 1: For RedCap UE performing CG-SDT, if SDT resource is configured with a RedCap-specific initial BWP which is not associated with any type of SSB (CD or NCD), it is up to UE implementation to measure SSB for CG PUSCH resource selection before each CG occasion.*

- Huawei thinks that this is ok for initial transmission. Samsung thinks that the should measure the SSB during the periodicity. Apple and Nokia thinks that we should have SSB and CG configured properly. Qualcomm agrees that it would be great but it should be discussed in redcap. Ericsson agrees. ZTE thinks that RAN1 is still discussing and some capability.

- Interdigital thinks that for SDT we need to have SSBs.

=> To be continued in RedCap - For CG-SDT purpose, RAN2 has basic assumption that SSB will be configured in initial BWP with CG-SDT. Notify RAN1

=> Discuss this in redcap session

[R2-2212201](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212201.zip) Correction on SSB evaluation in CG-SDT for RedCap UE Qualcomm Incorporated CR Rel-17 38.321 17.2.0 1488 - F NR\_SmallData\_INACTIVE-Core

**Beam failure handling for RA-SDT**

[R2-2212876](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212876.zip) Correction for beam failure issue with RA-SDT Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.2.0 1500 - F NR\_SmallData\_INACTIVE-Core

- Apple thinks that this is new behavior and we can leave it up to NW implementation. Huawei thinks the CR is not needed and we have discussed this in the past. We can use legacy RACH to indicate SSB.

- Nokia is not sure how network can recover a beam that is lost and we don’t want to rely on BSR to recover beam. LG also explains that we already discussed and we agreed that the UE doesn’t trigger legacy RA and it is a rare case.

- Lenovo thinks that the BSR will work even if it will take a little longer. ZTE thinks it is a little bit of an enhancement. Ericsson and Mediatek agree.

- Sony thinks that this extremely important to correct this and it will cause much worst power consumption. Xiaomi explains that there is a Rel-18 RAN4 WI that we can handle in.

=> The CR is not pursued

**To be discussed offline by rapporter**

[R2-2211263](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211263.zip) Correction to MAC spec for Small Data Transmission Huawei, HiSilicon, Google CR Rel-17 38.321 17.2.0 1451 - F NR\_SmallData\_INACTIVE-Core

[R2-2211175](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211175.zip) Miscellaneous Corrections for SDT operation Samsung Electronics Co., Ltd draftCR Rel-17 38.321 17.2.0 NR\_SmallData\_INACTIVE-Core

[R2-2211469](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211469.zip) Bj Parameter and time T Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2211649](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211649.zip) MAC Correction on SDT for RedCap UE vivo Mobile Com. (Chongqing) CR Rel-17 38.321 17.2.0 1468 - F NR\_SmallData\_INACTIVE-Core, NR\_redcap-Core

[R2-2211882](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211882.zip) Corrections on RNTI usage for SDT NEC draftCR Rel-17 38.321 17.2.0 F NR\_SmallData\_INACTIVE-Core

[R2-2212875](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212875.zip) Beam failure issue with RA-SDT Nokia, Nokia Shanghai Bell discussion Rel-17 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

**SDT over unlicensed spectrum**

[R2-2211470](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211470.zip) On HARQ process offset Ericsson discussion Rel-17 NR\_SmallData\_INACTIVE-Core

=> Noted

[R2-2212194](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212194.zip) HARQ process offset configuration and repetition capability for SDT Huawei, HiSilicon discussion Rel-17 NR\_SmallData\_INACTIVE-Core

- Huawei explains that RAN1 decided that CG repetition has been agreed.

=> Introduce a new separate PUSCH repetition capability for CG-SDT

=> CRs to be reviewed over email discussion

=> Noted

**Clarification discussions**

[R2-2212578](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212578.zip) CR for clarification for SDT on NR-U LG Electronics Inc. CR Rel-17 38.321 17.2.0 1492 - F NR\_SmallData\_INACTIVE-Core

=> The CR is revised with the correct CR number

[R2-2212958](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212958.zip) CR for clarification for SDT on NR-U LG Electronics Inc. CR Rel-17 38.321 38.331 17.2.0 3756 - F NR\_SmallData\_INACTIVE-Core

=> The CR is agreed and will be merged into rapporteur CRs

[R2-2211523](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211523.zip) RRC corrections for SDT ZTE Corporation, Sanechips CR Rel-17 38.331 17.2.0 3608 - F NR\_SmallData\_INACTIVE-Core

**Use case for the MO configuration in RRCRelease needs discussion**

[R2-2211264](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211264.zip) Correction to RSRP-based TA validation Huawei, HiSilicon CR Rel-17 38.331 17.2.0 3575 - F NR\_SmallData\_INACTIVE-Core

- ZTE understands that this only happens in one use case and CG-SDT when the UE doesn’t move much and we don’t need to optimize CG operation and if it moved it will move again.

- Huawei explains that it is not in the mobility case and it is related to RRC release without Measurment object.

- Intel thinks that some clarification is needed and we have to discuss this further. The UE has the context from the original MO config but when it is in inactive it is not using.

- ZTE thinks that there is an alternate wording that positioning adopted.

- LG agrees and this CR is acceptable.

=> The issue should be fixed, and we can look for an alternative to clarify that when the UE moves to INACTIVE it somehow keeps the MO configuration [CB]

**These remaining papers can be sent to offline**

[R2-2211627](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211627.zip) Correction on when to consider SDT procedure is not ongoing CATT CR Rel-17 38.331 17.2.0 3623 - F NR\_SmallData\_INACTIVE-Core

[R2-2211659](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211659.zip) Clarification on CG-SDT-Configuration vivo Mobile Com. (Chongqing) CR Rel-17 38.331 17.2.0 3628 - F NR\_SmallData\_INACTIVE-Core

[R2-2211883](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211883.zip) Control plane corrections for SDT NEC draftCR Rel-17 38.331 17.2.0 F NR\_SmallData\_INACTIVE-Core

[R2-2212719](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212719.zip) Correction on L2 handling of SDT in RRCReject MediaTek Inc. CR Rel-17 38.331 17.2.0 3726 - F NR\_SmallData\_INACTIVE-Core

=> Agree to the first change and merge with rapporteur CR

[R2-2212786](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212786.zip) Clarification on RRC re-establishment for SDT failure cases LG Electronics Inc. discussion Rel-17 NR\_SmallData\_INACTIVE-Core

[R2-2212578](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212578.zip) CR for clarification for SDT on NR-U LG Electronics Inc. CR Rel-17 38.321 17.2.0 1492 - F NR\_SmallData\_INACTIVE-Core

=> Withdrawn

[R2-2213279](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213279.zip) RRC corrections for SDT ZTE Corporation(Rapporteur), CATT, NEC CR Rel-17 3608 1 F NR\_SmallData\_INACTIVE-Core

=> Continue over email discussion

## 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

[R2-2212196](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212196.zip) RRC corrections to common RACH framework Huawei, HiSilicon draftCR Rel-17 38.331 17.2.0 F NR\_redcap-Core, NR\_SmallData\_INACTIVE-Core, NR\_cov\_enh-Core, NR\_slice-Core

- Ericsson indicates that issue two was not agreeable at the time

=> further clarify configured ROs are a subset of the 2step Ros.

=> The first change is agreed

=> The third change should be coordinated with rapporteur CR

=> The second change is not agreed

[R2-2213107](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213107.zip) Correction for RACH partitioning with both 2-step and 4-step RA configurations Huawei, HiSilicon, Intel, Apple, Mediatek, LGE, Qualcomm, CATT draftCR Rel-17 38.331 17.2.0 F NR\_redcap-Core, NR\_SmallData\_INACTIVE-Core, NR\_cov\_enh-Core, NR\_slice-Core

- Ericsson explains that if you are doing fallback and that fallback directs you to another RA configuration then there is ambiguity what resources you should use. Perhaps a note is sufficient

- ZTE also thinks it is clear but has some sympathy. Ok to have for some feature combination but not for feature.

- Huawei thinks that a note will make UE implementation complex and from NW perspective this flexibility is not really needed. Mediatek thought that this was already the behavior. ZTE thinks that the flexibility for the feature should be there.

=> Move to email discussion

[R2-2212197](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212197.zip) Clarification on RACH configuration on RedCap specific BWP Huawei, HiSilicon CR Rel-17 38.300 17.2.0 0585 - F NR\_redcap-Core, NR\_SmallData\_INACTIVE-Core, NR\_cov\_enh-Core, NR\_slice-Core

moved from 8.18.1

[R2-2212417](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212417.zip) Correction of Cond AdditionalRACH-AndRedCap Ericsson CR Rel-17 38.331 17.2.0 3698 - F NR\_SmallData\_INACTIVE-Core, NR\_slice-Core, NR\_redcap-Core, NR\_cov\_enh-Core

- Ericsson explains that we do not need a partition as the whole RA config is for RedCap UEs. ZTE thinks that we should mark it as Redcap and what we agreed last time it is ok. Mediatek explains that RA partitioning is not mandatory and if it is they are all for RedCap. Ericsson thinks that we can also go the way where we clarify that if we have a redcap partition in the RedCap BW then that one has to be for RedCap.

- Nokia thinks that the current implementation is mandating the UE to create a partition.

=> The CR is revised in [R2-2213280](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213280.zip)

[R2-2213280](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213280.zip) Correction of Cond AdditionalRACH-AndRedCap Ericsson CR Rel-17 38.331 17.2.0 3698 1 F NR\_SmallData\_INACTIVE-Core, NR\_slice-Core, NR\_redcap-Core, NR\_cov\_enh-Core

=> The CR is agreed

### 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

[R2-2212878](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212878.zip) Correction for RACH partitioning features Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.2.0 1501 - F NR\_SmallData\_INACTIVE-Core, NR\_cov\_enh-Core, NR\_redcap-Core, NR\_slice-Core

=> The CR is agreed

[R2-2212879](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212879.zip) Corrections on BWP handling for RACH partitioning Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.2.0 1502 - F NR\_SmallData\_INACTIVE-Core, NR\_cov\_enh-Core, NR\_redcap-Core, NR\_slice-Core

- LG doesn’t think the correction is needed as it is already clear that it performed with the selection BWP and if we accept this change then we need to clarify in other sections as well. Nokia thikns that this is needed because this is only done after BWP selection and it is aligning to other legacy part.

=> RAN2 understanding is that the UE considers RA resource sets for Random Access procedure in the BWP selected for the Random Access procedure

=> The CR is not pursued

# 8 Rel-18

## 8.3 Network energy savings for NR

(xx-Core; leading WG: RAN1; REL-18; WID: RP-213554)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

All contributions should have accompanying TP for each proposed solutions and identified RAN2 impact. All contributions should focus on the RAN2 impacts needed to be captured in TR and benefit of the solutions proposed.

### 8.3.1 Organizational

LS, workplan, email discussion etc

[R2-2211159](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211159.zip) LS on Cell DTX/DRX for NR network energy savings (R3-226002; contact: Huawei) RAN3 LS in Rel-18 FS\_Netw\_Energy\_NR To:RAN1 Cc:RAN2

=> Noted

[R2-2211427](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211427.zip) TP on cell selection/reselection and SSB/SIB-less Huawei, HiSilicon pCR Rel-18 38.864 0.1.0 FS\_Netw\_Energy\_NR

=> Will be used as a baseline

[R2-2211428](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211428.zip) Report of [POST119bis][304][NES] TP on cell selection/reselection and SSB/SIB-less (Huawei) Huawei, HiSilicon discussion Rel-18 FS\_Netw\_Energy\_NR

=> Noted

[R2-2212825](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212825.zip) Work plan for NR network energy savings Huawei, HiSilicon Work Plan Rel-18 FS\_Netw\_Energy\_NR

=> Noted

[R2-2212868](C:\\Users\\panidx\\OneDrive - InterDigital Communications, Inc\\Documents\\3GPP RAN\\TSGR2_120\\Docs\\R2-2212868.zip) Latest TR 38.864 v0.4.0 for information Huawei, HiSilicon discussion Rel-18 FS\_Netw\_Energy\_NR

=> Update and merge the TP [R2-2211427](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211427.zip)

=> Update the TP with agreements from this meeting

=> The TP is endorsed with the merged TP as above in [R2-2213072](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213072.zip)

[R2-2213074](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213074.zip) Latest RAN2 TP for TR 38.864 v0.4.0 Huawei, HiSilicon discussion Rel-18 FS\_Netw\_Energy\_NR

=> The TP is revised in R2-2213076

R2-2213076 Latest RAN2 TP for TR 38.864 v0.4.0 Huawei, HiSilicon discussion Rel-18 FS\_Netw\_Energy\_NR

=> The TP will be updated with further agreements and discussed over email discussion

### 8.3.2 DTX/DRX mechanism

Contributions should focus on further details and open issues for DTX/DRX, including RAN2 impacts and benefits.

[R2-2213071](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213071.zip) Report of [301][NES] Summary of DTX/DRX – 8.3.2 InterDigital

Discussion

Proposal 2 Capture in TR 38.864 that both UE specific and group common L1/L2 signalling can be considered for activating the DTX/DRX pattern, per the agreement in 119b-e.

- Vodafone asks what is the assumption of number of UEs on the cell. CATT explains that it is not related to number of UEs in the cell, that is more related to SIB/SIBless.

- Fujitsu thinks that we should add at least as we still have some discussions open.

Proposal 3: Cell DTX and Cell DRX modes can be configured and operated separately (e.g. one RRC configuration set for DL and the other set for UL).

- Vodafone thinks that we should optimally algin the DTX and DRX

Proposal 4: Proper network configuration of cell DTX and UE DRX can ensure the alignment between cell DTX and UE DRX, with the aim to maximize energy savings and align DRX for multiple UEs in the cell.

- Nokia thinks that we don’t need to align UE DRX with cell DTX as the UE knows the cell DTX and won’t be expected to receive. The network shouldn’t need to reconfigure DRX. Samsung agrees with Nokia and doesn’t think that it is always possible to align.

- Ericsson explains that it is more a synchronization of active time for the UE

- CATT explains that it is the onduration that needs to be discussed.

Proposal 5: It is up to NW whether legacy UEs can access cells with Cell DTX/DRX.

- Vodafone doesn’t agree

- BT thinks that it is impossible to bar legacy UEs

Proposal 6a: From network perspective, Cell DTX/DRX can be configured per serving cell and can be applicable for different cells in CA. No additional RAN2 impacts or enhancements are foreseen.

Proposal 6b: From a UE perspective, RAN2 discuss the following options for DRX maintenance:

• Option 1: Cell DTX/DRX is maintained per MAC entity (i.e. for all serving cells).

• Option 2: Cell DTX/DRX is maintained per serving cell and multiple UE DRX cycles/confgurations can be active at the same time in CA operation.

The draft TP in Appendix B captures the above proposals.

During the [AT] phase of the meeting, the following is proposed:

[R2-221307](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213075.zip)5 Report of [301][NES]Summary of DTX/DRX – 8.3.2 InterDigital

Proposal 9: At least the following is configured per cell DTX/DRX configuration: periodicity, start slot/offset, active period (e.g. on duration). Other details related to UE behavior can be discussed during WI phase.

- Nokia also thinks that this should be left to WI phase and this are signaling details.

- Vodafone asks if these parameters are flexible

*Proposal 10: UE assistance information relevant for cell DTX/DRX can be left for the normative phase.*

- Nokia would like to understand whether there is a need for UAI. Vodafone doesn’t think that it is need. CATT also doesn’t think that we need UAI for DTX/DRX specifically. Ericsson hasn’t seen a need for now but doesn’t want to preclude it.

*Proposal 8: (for assumptions to list rather than agreements)*

*RAN2 to discuss whether The following Cell DTX/DRX impacts on the UE can be considered in the normative phase if necessary. No need to capture these in the TR.*

*• Impact 1: Which configured DL and UL resources can be assumed as deactivated/suspended during DTX and DRX, respectively, including: PDCCH, PDSCH, PUSCH, PRACH, PUCCH*

*• Impact 2: Which UE-specific DL and UL signals can be assumed as deactivated/suspended during DTX and DRX, including CSI-RS and SRS.*

*• Impact 3: Whether there can be some exceptions to cell DTX/DRX assumptions, e.g. to suspend cell DTX/DRX during RA*

*• Impact 4: Suspension of CSI measurements and beam management during DTX, e.g. if SSBs or RS are not transmitted per legacy assumptions*

*• Impact 5: Impact on the timers in MAC (e.g. DRX, BFD) during DTX*

=> The Impacts will not be captured in the TR

[R2-221307](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213075.zip)7 TP capturing agreements related to DTX/DRX Interdigital

=> agree by email in email discussion 301

*Proposal 11: Capture the TP in Appendix B*

**Agreements**

1 Clarify previous agreement to: periodic cell DTX/DRX pattern is configured by UE-specific RRC. Periodic cell DTX/DRX can be activated/deactivated by L1/L2 signalling and UE-specific RRC signaling.

2 Capture in TR 38.864 that both UE specific and common L1/L2 signalling can be considered for at least activating/deactivating the cell DTX/DRX pattern, per the agreement in 119b-e.

3 Cell DTX and Cell DRX modes can be configured and operated separately (e.g. one RRC configuration set for DL and the other set for UL). Cell DTX/DRX can also be configured and operated together.

4 It is up to NW whether legacy UEs can access cells with Cell DTX/DRX

5 Cell DTX/DRX can be configured per serving cell and can be applicable for different cells in CA. No additional RAN2 impacts or enhancements are foreseen.

6 Whether to support multiple Cell DTX/DRX configurations can be discussed later in the normative phase.

7 At least the following parameters can be configured per cell DTX/DRX configuration: periodicity, start slot/offset, on duration. Details related to UE behaviour can be discussed during WI phase

8 From RAN2 perspective DTX/DRX is feasible

Not treated

[R2-2211443](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211443.zip) Remaining issues on Cell DTX/DRX CATT discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211586](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211586.zip) NES Network DTX and DRX Mechanism Qualcomm Incorporated discussion Rel-18

[R2-2211664](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211664.zip) discussion on cell DTX/DRX vivo discussion Rel-18

[R2-2211679](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211679.zip) Further discussion on Cell DTX / DRX Apple discussion FS\_Netw\_Energy\_NR

[R2-2211774](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211774.zip) Further details on Cell DTX/DRX Nokia, Nokia Shanghai Bell discussion Rel-18 FS\_NR\_XR\_enh

[R2-2211920](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211920.zip) Discussion on idle and inactive state UE grouping for NES gNB DTX Sony discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211953](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211953.zip) Discussion on DTX/DRX mechanism OPPO discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212058](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212058.zip) Discussion on DTX/DRX for NES Samsung discussion Rel-18

[R2-2212113](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212113.zip) Considerations of Cell DTX and DRX Intel Corporation discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212182](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212182.zip) Supporting multiple DTX configuration ZTE Corporation, Sanechips discussion

[R2-2212314](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212314.zip) Further aspects on Cell DTX/DRX Ericsson discussion

[R2-2212324](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212324.zip) Cell DTX/DRX InterDigital discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212569](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212569.zip) Cell DTX/DRX related issues ETRI discussion

[R2-2212792](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212792.zip) Assistance information for NW DTX/DRX NTT DOCOMO INC. discussion Rel-18

[R2-2212840](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212840.zip) Recommendations for DTX/DRX mechanism MediaTek Inc. discussion Rel-18

[R2-2212851](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212851.zip) Discussion on DTX/DRX mechanism LG Electronics Inc. discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212869](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212869.zip) Discussion on cell DTX Huawei, HiSilicon discussion Rel-18 FS\_Netw\_Energy\_NR Late

### 8.3.3 SSB/SIB-less/paging

Contributions should focus on further details and open issues for SSB/SIB-less/paging solutions, including RAN2 impacts and benefits.

[R2-2212973](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212973.zip) Feature summary for 8.3.3 Ericsson

*RAN2 to discuss whether UE is able to initiate random access procedure on the SSB-less and/or SIB-less non-anchor cell. Details under which conditions can be further discussed.*

- Samsung explains that this requires blind decoding and therefore it is not a good option from a network saving perspective.

- Apple explains that there is an issue with SSB-less and there is RAN1 impact. Qualcomm explains that we are making big assumptions that we can do RA without SSB. Franhofer also indicates that we are making big assumptions on Ran4 side.

Proposal 7 RAN2 to discuss whether to support paging on a cell without SIB and/or a cell without SIB and SSB, and how to update SIB.

- Vivo thinks that it doesn’t help to support this from a NES perspective. Samsung agrees and this assumes a collocation of cells. Apple thinks that the key issue is how to update SIB and the UE has to move to anchor cell for SIB update and prefers to only monitor anchor. Lenovo clarifies that normally the network will be paging the UE in all cells so the UE will get the paging message from anchor anyways.

-

Proposal 10 Focus on the scenario where the NES cell is co-located with anchor cell.

- Vodafone asks if it is physically collocated and what are the impacts. Samsung explains that we may need to have mechanisms for the UE to identify cells and link them with anchor cell. BT thinks that this is not a realistic scenario as we are then ruling out small cell and high frequency. DT also can’t agree and thinks that we shouldn’t exclude other scenarios. CMCC thinks that collocated is not enough. China unicom shares the view as Huawei that the non-collocated is feasible and useful and only SIB-less solution should be consider.

- Huawei explains that if we have SSB but no SIB it would be fine to have an non-collocated cell, but otherwise this cannot be supported.

- ZTE thinks that this scenario gives the maximum benefits so we shouldn’t ignore it.

- Ericsson explains that co-location is on a coverage basis.

Proposal 8 Discuss NES benefits and UE effects of SSB/SIB-less non-anchor cell compared to legacy CA as a baseline.

Proposal 12 RAN2 to discuss the impact of an SSB-less solution on cell (re)selection and connected mode mobility.

Proposal 11 RAN2 to discuss whether to (de)prioritize the solution of cell without SSB and SIB or cell without SIB.

Discussion on feasibility:

- Huawei, CMCC and ZTE thinks that we can state that it is feasible from RAN2. Ericsson also doesn’t see a problem. Qualcomm, Fraunhofer, Apple and Nokia are concerned that we don’t know what RAN1 final solution will look like so it is hard to judge.

=> RAN2 will not provide feasibility assessment for RAN1 centric topics

**Agreements on SIB/SIBless:**

1 Anchor cell is a cell where UE assumes SSB, system information and paging are transmitted.

2 Non-anchor cell without SIB is a cell where NES-capable UEs do not assume system information is transmitted. The system information transmitted by anchor cell may also include the necessary information for NES-capable UEs to access a non-anchor cell.

3 Non-anchor cell without SIB and SSB is a cell where NES-capable UEs do not assume SSB or system information are transmitted. The system information transmitted by anchor cell may also include the necessary information for NES-capable UEs to access a non-anchor cell.

4 It is up to RAN1/RAN4 whether it is possible for the UE to synchronize with the non-anchor cell using anchor cell SSB and the conditions to do so

5 UE camps on the anchor cell, not SSB-less/SIB-less cell.

6 We will not support paging on a cell without SIB and/or a cell without SIB and SSB

7 Feasibility of this solution is in RAN1 scope

[R2-2213266](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213266.zip) TP on SSB/SIBless Ericsson

=> The TP is agreed and will be merged in RAN2 TP

Not treated

[R2-2211444](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211444.zip) Further Considerations on NES Cell without SIB CATT discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211589](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211589.zip) NES SIB-less and SSB-less Techniques Qualcomm Incorporated discussion Rel-18

[R2-2211665](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211665.zip) discussion on SSB/SIB-less/paging vivo discussion Rel-18

[R2-2211680](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211680.zip) Discussion and comparison of SSB-less and SIB-less solutions Apple discussion FS\_Netw\_Energy\_NR

[R2-2211826](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211826.zip) Discussions on common signal-less solutions for NES Fujitsu discussion Rel-18 FS\_Netw\_Energy\_NR Withdrawn

[R2-2211845](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211845.zip) Discussions on common signal-less solutions for NES Fujitsu discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211954](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211954.zip) Discussion on SSB/SIB-less OPPO discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211966](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211966.zip) SSB and Paging for NES Nokia, Nokia Shanghai Bell discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212059](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212059.zip) Discussion on SSB/SIB-less Solutions for NES Samsung discussion Rel-18

[R2-2212114](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212114.zip) Considerations of SIBless cell with or without SSB Intel Corporation discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212181](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212181.zip) Supporting access via NES cell ZTE Corporation, Sanechips discussion

[R2-2212312](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212312.zip) Discussion on SSB-less and SIB-less cell LG Electronics Inc. discussion Rel-18

[R2-2212327](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212327.zip) SSB/SIB-less cell operation InterDigital discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212387](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212387.zip) SIB-less, SSB-less and paging enhancements Ericsson discussion

[R2-2212634](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212634.zip) Discussion on SSB/SIB1/Paging-less NES solution CMCC discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212720](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212720.zip) Considerations on SSB/SIB-less solutions for NW energy saving KDDI Corporation discussion

[R2-2212841](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212841.zip) Recommendations for SSB/SIB1-less techniques MediaTek Inc. discussion Rel-18

[R2-2212870](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212870.zip) Discussion on SIB-less techniques Huawei, HiSilicon discussion Rel-18 FS\_Netw\_Energy\_NR

### 8.3.4 Cell selection/re-selection

Contributions should focus on further details and open issues for cell selection/reselection, including RAN2 impacts and benefits.

[R2-2212971](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212971.zip) [PRE120][303][NES] Summary of Cell (Re)selection – 8.3.4 (Apple)

Proposal 2: Discuss whether to capture one of below 2 RAN2 understanding of "NES cell" for cell (re)selection in the TR:

• Understanding 1: A cell which is currently using NES technique(s)

• Understanding 2: A cell which supports NES technique(s) (i.e. it is still regarded as NES cell, even when it doesn't apply any NES technique in some duration)

- Huawei Thinks that understanding A is the better one. Vivo thinks that we should have both understanding. Nokia thinks that the definition would depend on the technique.

=> Define this in stage 3

Legacy UE handling

NES capable UE handling

*Proposal 4: Confirm the network should be able to configure NES capable UEs to whether prioritize or de-prioritize NES cells over legacy cells.*

- Nokia is concerned that we can’t say prioritize.

Proposal 5: On how NES capable UEs to (de)prioritize intra-frequency and/or inter-frequency NES cell, RAN2 discuss which option(s) to conclude SI:

• Option 1: The existing cell (re)selection mechanism is sufficient

• Option 2: Introduce a new set of NES-capable UE dedicated cell (re)selection parameters. Details of the set of dedicated parameters can be discussed in normative phase

- Nokia thinks that we can use current mechanisms for inter-frequency, but then we need some for intra-frequency.

=> This discussion will be left to normative phase once we know which NES technique will be specified.

Proposal 6: Discuss whether to introduce a NES capable UE dedicated barring mechanism.

**Agreements on cell reselection**

1. Keep the terminology of "NES cell" in the TR. The definition of NES cell will be discussed in normative phase. Remove the FFS on definition (rapporteur to update this).
2. For legacy UE barring mechanism, current TR is sufficient to conclude SI, and solution details should be discussed in normative phase. Remove the FFS on exact mechanism and spec impacts.
3. From RAN2 perspective legacy devices and new NES UEs can be handled via cell selection/reselection techniques

Not treated

[R2-2211445](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211445.zip) Remaining Issues on Cell Selection/Reselection CATT discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211591](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211591.zip) Cell Selection and Reselection NES Techniques Qualcomm Incorporated discussion Rel-18

[R2-2211666](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211666.zip) discussion on cell selection/reselection vivo discussion Rel-18

[R2-2211681](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211681.zip) Further discussion on cell (re)selection enhancement for Network energy saving Apple discussion FS\_Netw\_Energy\_NR

[R2-2211955](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211955.zip) Discussion on cell selection/reselection OPPO discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211967](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211967.zip) Cell reselection and access control for NES Nokia, Nokia Shanghai Bell discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212053](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212053.zip) Cell selection/re-selection in NES Lenovo discussion Rel-18

[R2-2212060](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212060.zip) Discussion on Cell Selection and Reselection for NES Samsung discussion Rel-18

[R2-2212116](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212116.zip) Cell (re)selection for handling legacy UEs and NES capable Ues Intel Corporation discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212183](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212183.zip) Consideration on cell selection and reselection related to NES for NR ZTE Corporation, Sanechips discussion

[R2-2212315](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212315.zip) Handling of NES capable and not capable UEs on EE Cell Ericsson discussion

[R2-2212325](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212325.zip) NES cell selection and resection aspects InterDigital discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212796](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212796.zip) Assistance information for cell reselection NTT DOCOMO INC. discussion Rel-18

[R2-2212867](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212867.zip) Energy Saving from RRC Idle Operation Lenovo discussion FS\_Netw\_Energy\_NR

[R2-2212871](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212871.zip) Discussion on cell selection/reselection for NES Huawei, HiSilicon discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212919](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212919.zip) Access restriction and cell reselection LG Electronics discussion Rel-18

### 8.3.5 Connected mode mobility

Contributions should focus on the need of mobility enhancements, including CHO and group mobilitiy. Proposed enhacments should be properly explained and have accompanying TPs.

[R2-22](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2213703.zip)13703 [PRE120][304][NES] Summary of Connected Mode Mobility – 8.3.5 (Nokia)

Agreements

1. Capture the solution on enhancing the CHO framework (for faster offloading/onloading during cell deactivation/activation) enabling a evaluation of CHO conditions depending on the NES state of the source/target cell. How to indicate to UE the triggering of the CHO evaluation is up to normative phase. Whenever mobility from source cell is triggered, one could also consider how UE would not select NES cell if any other cell is available when selecting the new cell. Corresponding TP for this is provided in the Annex
2. RAN2 does not consider at this point group HO (optimizing R15 HO procedure).
3. RAN2 does not consider at this point BWP adaptation with group signaling (no supporting papers in RAN2)
4. From RAN2 perspective, CHO enhancements are feasible

Not treated

[R2-2211446](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211446.zip) Consideration on mobility enhancements CATT discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211602](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211602.zip) NES Connected mode mobility Qualcomm Incorporated discussion Rel-18

[R2-2211682](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211682.zip) Further discussion on mobility enhancement for Network energy saving Apple discussion FS\_Netw\_Energy\_NR

[R2-2211921](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211921.zip) Handover enhancement for NES Sony discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211968](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211968.zip) Moiblity enhancements for NES Nokia, Nokia Shanghai Bell discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212054](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212054.zip) NES impact to UE mobility Lenovo discussion Rel-18

[R2-2212115](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212115.zip) Further considerations of group handover Intel Corporation discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212273](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212273.zip) CHO improvements for Network Energy Savings Vodafone GmbH discussion Rel-18

[R2-2212326](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212326.zip) NES mobility aspects InterDigital discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212393](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212393.zip) Group handover for NW energy savings Ericsson discussion

[R2-2212641](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212641.zip) Consideration on group mobility for network energy saving Fujitsu Limited discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212823](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212823.zip) Connected mode mobility LG Electronics Finland discussion Rel-18

[R2-2212872](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212872.zip) Discussion on connected mode mobility for NES Huawei, HiSilicon discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212930](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212930.zip) Group Handover for NES Rakuten Mobile, Inc discussion Rel-18

### 8.3.6 Others

Contributions on remaining solutions not above, including cell wake-up signal, resource adapation, BWP adaptation, NES state determination and signaling, etc. Focus on these contributions should be on RAN2 impact and feasibility.

General UE assistance contributions will be deprioritized. Specific UE assistance aspects relating to the identified solutions can be proposed as part of other contributions.

[R2-2212969](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212969.zip) [PRE120][305][NES] Summary of Others – 8.3.6 (Huawei)

- ZTE and Apple thinks that RAN1 should discuss this

**Agreement**

=> If RAN1 agrees to support WUS then from RAN2 point of view it is feasible and details can be discussed in normative phase.

=> From RAN2 perspective, the feasibility of all other solutions is in RAN1 and/or RAN4 scope

=> From RAN2 perspective the study is considered complete

Not treated

[R2-2211667](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211667.zip) discussion on UE WUS and TP for TR vivo discussion Rel-18

[R2-2211922](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211922.zip) UE wake-up request signal Sony discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2211956](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211956.zip) Discussion on the UE assistance information OPPO, Apple discussion Rel-18 FS\_Netw\_Energy\_NR

[R2-2212055](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212055.zip) Discussion on supporting of NES Lenovo discussion Rel-18

[R2-2212061](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212061.zip) BWP Adaptation for NES Samsung discussion Rel-18

[R2-2212110](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212110.zip) Impacts of SSB/SIB1 adaptations and their mitigation Fraunhofer IIS discussion FS\_Netw\_Energy\_NR

[R2-2212184](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212184.zip) Techniques in various domains and UE assistance information for NES ZTE Corporation, Sanechips discussion

[R2-2212383](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212383.zip) Discussion on Wake Up Signalling and paging-less NES cells NEC Telecom MODUS Ltd. discussion

[R2-2212842](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212842.zip) Recommendations for network energy saving techniques MediaTek Inc. discussion Rel-18

## 8.8 NR support for UAV

(xx-Core; leading WG: RAN1; REL-18; WID: RP-213600)

Time budget: 0.5 TU

Tdoc Limitation: 2

### 8.8.1 Organizational

[R2-2212266](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212266.zip) Uncrewed Aerial Vehicles in Rel-18 - Updated Workplan Nokia, Nokia Shanghai Bell Work Plan Rel-18 NR\_UAV-Core

[R2-2212267](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212267.zip) SA2 Status for Uncrewed Aerial Vehicles in Rel-18 Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_UAV-Core

### 8.8.2 Measurement reporting

Contributions should focus on enhancement to measurement reports, for example UE-triggered measurement report based on configured height thresholds, Reporting of height, location and speed in measurement report, Flight path reporting, Measurement reporting based on a configured number of cells (i.e. larger than one) fulfilling the triggering criteria simultaneously

Note: Work done in LTE is a starting point for this objective. NR-specific enhancements can be considered, if needed, while overall the LTE and NR solutions should be harmonized as much as possible.

[R2-2212340](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212340.zip) Flight path reporting for UAV InterDigital discussion Rel-18 NR\_UAV-Core

*Proposal 1: A waypoint is a planned location for the UE along the flight path and is described via the existing parameter type LocationCoordinates defined in TS 37.355.*

- Ericsson thinks that this could be area. . Qualcomm thinks that this IE can provide multiple things, like 3D area. Nokia also agrees.

- Intel thinks that if we define something new and don’t want to define new requirements.

- CMCC thinks that the LTE IE is enough.

*Proposal 2: A timestamp provides the UTC time as baseline. Further details can be FFS*

- Oppo asks whether it is common location info. Interdigital thinks that the format is similar.

- LG supports.

- Ericsson asks what UTC time is. Qualcomm agrees. Nokia thinks that we can also consider to have UTC for an area rather a point.

- Huawei thinks that as a network vendor I would use my own margin. As long as we can update the flight path the network will figure it out.

- Samsung thinks that even if we discuss accuracy there is no guarantee on UE accuracy. Candy thinks that we can discuss granularity but accuracy is difficult.

*Proposal 3: No requirements are placed on spatial distribution of waypoints.*

- LG thinks that this can be left to UE implementation

- Nokia is ok to consider removing speed dependency or height, but would like to have better.

- Interdigital thinks that even if the UE reports the same waypoint multiple times with different time stamps that conveys the information that the UE will remain in the same spot.

*Proposal 4: A UE indicates whether flight plan information is available within the RRCReconfigurationComplete, RRCReestablishmentComplete, RRCResumeComplete, or RRCSetupComplete message*

*Proposal 5: Flight path reporting uses the UE Information request/response procedure as baseline.*

- Qualcomm

*=> Noted*

[R2-2212736](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212736.zip) Consideration on flight path reporting of NR support for UAV DENSO CORPORATION discussion NR\_UAV-Core

*Proposal 3: Allow UE to initiate the flight path report procedure by using existing UE initiated signalling (e.g. UEAssistanceInformation). The following options could be considered:*

*Option 1: Include the indication of the flight path availability in the UE initiated message. Then, reuse legacy procedure of flight path report.*

*Option 2: Include the flight path itself directly in the UE initiated message.*

- Samsung thinks option 1 is sufficient. LG think that option 2 is beneficial.

- Nokia agrees with option 1 and the UE should just indicate to the UE it has something to report and the network uses same request procedure.

- CMCC agrees with option 2.

- InterDigital, Intel, Ericsson, Vivo, ZTE, thinks option 1 is best approach. Intel thinks that if we go with option 2 it has to be configurable. Ericsson thinks that we have to have some conditions for when the UE updates and we should try to prevent UL traffic.

- Huawei agrees with other network vendor so we should do option 1 which reuses basic mechanism.

- Qualcomm asks would the UE indicate whether it is a new path or updated one and can we allow to UE assistance.

- Nokia thinks that the UE should send the full flight path.

Do we provide indication in UAI as well

- Samsung would like to use UAI and the UE should be to provide the capability.

=> Noted

**Agreements:**

1. A waypoint is a planned location for the UE along the flight path and is described via the existing parameter type LocationCoordinates defined in TS 37.355.
2. A timestamp provides the UTC time associated with estimated time of arrival to a waypoint as baseline. FFS on granularity
3. No requirements are placed on spatial distribution of waypoints
4. A UE indicates whether flight plan information is available within the RRCReconfigurationComplete, RRCReestablishmentComplete, RRCResumeComplete, or RRCSetupComplete message. Flight path reporting uses at the UE Information request/response procedure as baseline.
5. UE indicates to the network a new flight path is available in the UE (whether it is initial or update). Then, reuse the normal request/response procedure of flight path report.
6. UAI message can also be used to indicate the UE has flight path availability.
7. FFS whether and what triggering conditions are specified for flight update. FFS The maximum number of waypoints within flight path plan is left FFS.

[R2-2211766](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211766.zip) On measurement reporting enhancements in NR UAV Samsung Electronics Co., Ltd discussion Rel-18 NR\_UAV-Core

*Proposal 9: RAN2 to discuss whether the following cases are considered for flight path update:*

*- Case 1: Flight path update due to the changed waypoint and/or timestampt*

*- Case 2: Flight path update due to the outdated (passed) waypoint.*

[R2-2212269](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212269.zip) On Flight Path Plan (FPP) for UAVs – Role, Content and Reporting Aspects Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_UAV-Core

*Proposal 2: The maximum number of waypoints within flight path plan is left FFS.*

Parameter Scaling

[R2-2211820](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211820.zip) Discussion on measurement reporting enhancement for NR UAV vivo discussion Rel-18 NR\_UAV

Proposal 5 Scaling of RRM parameters, such as to shorten TTT is not necessary for UAV UE mobility optimization.

[R2-2212638](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212638.zip) Further discussion on UAV measurement enhancements Huawei, HiSilicon discussion Rel-18 NR\_UAV-Core

*Proposal 6: A height adaptive TTT should be considered for NR UAV.*

*Discussions on scaling of RRM parameters*

*-* Huawei explains that their proposal is to link a height to a TTI rather than scaling. Nokia agrees that it is beneficial to use different TTT based on height (height-dependency)

- Intel doesn’t see the motivation about TTT scaling and doesn’t see any relation. Nokia explains that based on simulations there is a benefit at least for A3 and A4 and you can combine it with H1/H2. Ericsson thinks that this is a nice idea as when you are higher the reporting conditions can be changed.

*Proposal 9: The UE sends the MR to the NW only when the cell which is leaving the cellsTriggeredList, has been reported to the NW beforehand.*

=> Noted

[R2-2211738](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211738.zip) Measurement reporting enhancement in UAV Apple discussion Rel-18 NR\_UAV

*Proposal 2: Apply numberOfTriggeringCells for inter-RAT events (i.e. B1 and B2 triggering).*

*Proposal 3: Consider a combined numberOfTriggeringCells on multiple measurement objects.*

[Email discussion on UAV measumerement] – scope TBD

=> Noted

Not treated

[R2-2211190](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211190.zip) Measurement Enhancement for UAV OPPO discussion Rel-18

[R2-2211305](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211305.zip) Measurement and reporting enhancements Qualcomm Incorporated discussion Rel-18 NR\_UAV-Core

[R2-2211404](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211404.zip) Discussion on reducing measurement reporting and flight path update for UAV Intel Corporation discussion Rel-18 NR\_UAV-Core

[R2-2211452](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211452.zip) Considerations on Measurement Reports Enhancements NEC Europe Ltd discussion Rel-18 NR\_UAV-Core

[R2-2211739](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211739.zip) User consent on UAV Apple discussion Rel-18 NR\_UAV

[R2-2211798](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211798.zip) Further consideration on measurement reporting for NR UAV ZTE Corporation, Sanechips discussion Rel-18 NR\_UAV-Core

[R2-2211819](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211819.zip) Discussion on flight path reporting for NR UAV vivo discussion Rel-18 NR\_UAV

[R2-2211931](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211931.zip) Considerations about UAV mobility and user consent Sony discussion Rel-18 NR\_UAV

[R2-2211996](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211996.zip) Further discussion on NR support for UAV NTT DOCOMO, INC. discussion Rel-18

[R2-2212019](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212019.zip) Measurement enhancement for NR UAV Lenovo discussion Rel-18

[R2-2212145](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212145.zip) Measurement Reporting for NR UAV CATT discussion Rel-18 NR\_UAV-Core

[R2-2212268](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212268.zip) On Measurement Related Aspects for UAV UEs Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_UAV-Core

[R2-2212616](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212616.zip) Measurement Reporting for NR UAV CMCC discussion Rel-18 NR\_UAV-Core

[R2-2212657](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212657.zip) Discussion on measurement reporting for NR UAV Xiaomi discussion Rel-18 NR\_UAV-Core

[R2-2212669](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212669.zip) Discussion on measurement reporting for NR UAV Sharp discussion

[R2-2212800](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212800.zip) Discussion on flight path reporting for NR UAV China Telecom discussion

[R2-2212824](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212824.zip) Measurement Report Enhancement LG Electronics Finland discussion Rel-18

[R2-2212846](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212846.zip) Flight path information report Enhancement LG Electronics Finland discussion Rel-18

[R2-2212900](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212900.zip) Flight path reporting and UAV measurement reports Ericsson discussion Rel-18 NR\_UAV-Core

[R2-2212933](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212933.zip) Further discussion on NR support for UAV NTT DOCOMO, INC. discussion Rel-18

### 8.8.3 Subscription-based aerial-UE identification

Contributions should focus on signaling required to support subscription-based aerial-UE identification

Note: Work done in LTE is a starting point for this objective. NR-specific enhancements can be considered, if needed, while overall the LTE and NR solutions should be harmonized as much as possible.

Not treated

[R2-2211191](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211191.zip) Subscription-based aerial-UE identification OPPO discussion Rel-18 [R2-2209419](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2209419.zip)

[R2-2211306](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211306.zip) Enhancements for subscription-based aerial-UE identification Qualcomm Incorporated discussion Rel-18 NR\_UAV-Core [R2-2209447](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2209447.zip)

[R2-2211453](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211453.zip) Considerations on Subscription-based Identification for NR UAV NEC Europe Ltd discussion Rel-18 NR\_UAV-Core

[R2-2211651](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211651.zip) Discussion on subscription-based aerial-UE identification for NR UAV Samsung Electronics Co., Ltd discussion Rel-18 NR\_UAV-Core [R2-2210739](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2210739.zip)

[R2-2211799](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211799.zip) On subscription based identification for NR UAV ZTE Corporation, Sanechips discussion Rel-18 NR\_UAV-Core

[R2-2212146](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212146.zip) Subscription-based Aerial-UE Identification for NR CATT discussion Rel-18 NR\_UAV-Core

[R2-2212513](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212513.zip) UAV Sub.UE Identification and identity broadcast Beijing Xiaomi Mobile Software discussion Rel-18 NR\_UAV-Core

[R2-2212617](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212617.zip) Subscription-based aerial-UE identification for NR UAV CMCC discussion Rel-18 NR\_UAV-Core

[R2-2212639](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212639.zip) Discussion on subscription-based UAV identification Huawei, HiSilicon discussion Rel-18 NR\_UAV-Core

[R2-2212898](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212898.zip) Subscription-based aerial UEs identification Ericsson discussion Rel-18 NR\_UAV-Core

### 8.8.4 UAV identification broadcast

Study and specify, if needed, enhancements for UAV identification broadcast

NOTE: This Agenda Item will not be treated in this meeting

[R2-2211125](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211125.zip) OG0022\_LS-MITRE-Engenuity Open Generation DAA input\_PC5\_DAA\_RID\_PRS OG0022 (contact: vivo) MITRE Engenuity Open Generation 5G Consortium LS in NR\_UAV-Core To:SA2 Cc:RAN2

[R2-2211932](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211932.zip) UAV identification broadcast Sony discussion Rel-18 NR\_UAV

[R2-2212020](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212020.zip) Discussion on broadcasting remote id for UAV Lenovo discussion Rel-18

## 8.18 Mobile Terminated Small Data Transmission

(NR\_NR\_MT\_SDT-Core; leading WG: RAN2; REL-18; WID: RP-213583)

Time budget: 0.5 TU

Tdoc Limitation: 1 tdoc

### 8.18.1 Organizational

LS ins. Rapporteur input.

[R2-2211531](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211531.zip) Work plan for the MT-SDT WI ZTE Corporation, Sanechips Work Plan

### 8.18.2 General

*Contributions on support for paging-triggered SDT, including triggering and procedures.*

*Note: Data transmission in DL within paging message is not in scope of this WI.*

**Triggering**

[R2-2211732](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211732.zip) Discussion on MT-SDT Apple discussion Rel-18 NR\_MT\_SDT-Core

Discussion

- Oppo asks whether MT-SDT is a single bit indication or does it tell the UE more information.

- Qualcomm and Nokia think that we may need more explicit indications like what resources, whether it is CG, RA, etc etc.

*Proposal 3: Upon receiving RAN paging for MT-SDT purpose, UE can initiate the MT-SDT procedure only when the current radio quality is good (e.g. RSRP > threshold).*

- Intel doesn’t think we are ready for this agreement until we decide the UE behavior. ZTE is concerned that if we don’t agree other proposals will be more complicated. Huawei agrees with this and we need to follow same behavior as MO so we need this as well for MT-SDT.

- Vivo asks if it is mandatory.

- LG should discuss first whether the UE initiates MO procedure or something else.

- Vodafone thinks that we should re-use as much as possible and aim to not re-design

- Nokia thinks that from the access part there is a difference.

- Qualcomm ask if the data volume check will still need to be done.

- ZTE indicates that there may be a case that when there is data and the threshold needs to be met.

=> Noted

**Overall procedure**

[R2-2211471](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211471.zip) MT-SDT Baseline Ericsson discussion Rel-18 NR\_MT\_SDT-Core

Proposal 3 UE uses legacy random access resources for accessing the network for an MT-SDT transfer.

- Intel thinks that it is important for the network to differentiate between the cause for UL access.

- InterDigital thinks that this really depends on whether the UE has UL data, if there UL data then RA-SDT resources can be used otherwise we can use legacy.

=> Noted

[R2-2211532](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211532.zip) MT-SDT procedure ZTE Corporation, Sanechips discussion

Proposal 5: No new resume cause is needed for MT-SDT (i.e., the UE reuses mt-Access as the resume cause)

[R2-2211867](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211867.zip) Initial considerations on MT-SDT OPPO discussion Rel-18 NR\_MT\_SDT-Core

Proposal 5  In response to the paging with MT-SDT indication, UE initiates RRC resume procedure and follows the same RRC behaviours as MO-SDT.

Proposal 6 New resume cause is introduced for MT-SDT in order to inform NW that UE is ready for DL data/signalling reception.

=> Noted

**Agreements**

1. For RAN paging, MT-SDT indication (at least one bit) is explicitly included per UE via a paging message. FFS if more information for MT-SDT are needed FFS what the indication will be called. FFS signalling details
2. Rel-18 MT-SDT after the MT-SDT paging trigger is detected, RA-SDT and CG SDT solutions/procedures specified in Rel-17 is re-used as a baseline. The detailed triggers will be discussed on case by case. FFS on resources used for access
3. UE can use non-SDT random access resources for accessing the network for an MT-SDT transfer. The UE can also use the configured grant resources and/or MO-RA resources.
4. The network should be able to differentiate why the UL access was triggered, i.e. implicit or explicit indication by the UE.
5. MT-SDT is data that belongs to bearers that are configured for SDT. FFS whether the configuration is MO-SDT or MT-SDT specific. The network can only trigger MT-SDT if the data belongs to those bearers.
6. It is possible for the network to configure only MT-SDT without MO-SDT RA resources and/or CG-SDT. Subsequent UL/DL data belonging to SDT bearers while in INACTIVE is allowed like MO-SDT procedure. FFS stage 3 details
7. New Resume cause in RRC resume will be introduced, one code point MT-SDT indication

Discussion

*If there is not UL data, UE can use legacy random access resources for accessing the network for an MT-SDT transfer*

*How to indicate to the network*

1. *No new resume cause is needed for MT-SDT (i.e., the UE reuses mt-Access as the resume cause)*
2. *Use new resume cause*

- Qualcomm ask if MT-SDT is a separate feature from SDT, it seems like it is linked to MO. Nokia thinks that this should be configured separately and there will be cases where network only supports MDT. We have limited resume causes. Nokia also thinks that if there is no UL data.

- Huawei agrees with Nokia that the UE should be able to use legacy, as there is no data.

- LG thinks that the UE can use the SDT MO and don’t need to use legacy. And it is already possible to access the legacy with MO SDT

*It is possible for the network to configure MT-SDT without MO-SDT*

­- Intel ask if we would configure things like bearers separately. Nokia explains that we would of course need to configure a few things.

- Intel asks what is MT-SDT? MT-SDT is data that belongs to bearers that are configured for SDT.

*Resume cause*

**Other aspects to consider**

Not treated

[R2-2212199](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212199.zip) Discussion on MT-SDT Qualcomm Incorporated discussion NR\_MT\_SDT-Core

[R2-2211176](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211176.zip) Mobile Terminated Small Data Transmission in RRC\_INACTIVE Samsung Electronics Co., Ltd discussion Rel-18 NR\_MT\_SDT-Core

[R2-2211249](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211249.zip) Supporting Mobile Terminated Small Data Transmission in RRC\_INACTIVE vivo Mobile Com. (Chongqing) discussion Rel-18 NR\_MT\_SDT-Core Late

[R2-2211283](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211283.zip) Discussion on MT-Small Data Transmission T-Mobile USA Inc. discussion Rel-18 Late

[R2-2211295](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211295.zip) Discussion on paging triggered SDT SHARP Corporation discussion NR\_MT\_SDT-Core

[R2-2211471](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211471.zip) MT-SDT Baseline Ericsson discussion Rel-18 NR\_MT\_SDT-Core

[R2-2211532](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211532.zip) MT-SDT procedure ZTE Corporation, Sanechips discussion

[R2-2211732](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211732.zip) Discussion on MT-SDT Apple discussion Rel-18 NR\_MT\_SDT-Core

[R2-2211885](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211885.zip) Initial consideration on MT-SDT NEC discussion Rel-18 NR\_MT\_SDT-Core

[R2-2211940](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211940.zip) DL SDT triggering and procedures Sony discussion Rel-18 NR\_MT\_SDT

[R2-2211982](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211982.zip) Procedures for MT SDT Xiaomi discussion Rel-18 NR\_MT\_SDT

[R2-2212010](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212010.zip) Discussion on Mobile Terminated Small Data Transmission CATT discussion Rel-18 NR\_MT\_SDT-Core

[R2-2212120](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212120.zip) Discussion on the MT-SDT procedure Lenovo discussion Rel-18 NR\_MT\_SDT-Core

[R2-2212162](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212162.zip) Discussion on general procedure for MT-SDT Spreadtrum Communications discussion Rel-18

[R2-2212186](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212186.zip) MT-SDT mechanism Intel Corporation discussion Rel-18 NR\_MT\_SDT-Core

[R2-2212195](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212195.zip) MT-SDT design principles Huawei, HiSilicon discussion Rel-18 NR\_MT\_SDT-Core

[R2-2212328](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212328.zip) Mobile terminated SDT InterDigital discussion Rel-18 NR\_MT\_SDT-Core

[R2-2212382](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212382.zip) MT-SDT procedure Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_MT\_SDT-Core

[R2-2212581](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212581.zip) Discussion on MT-SDT LG Electronics Inc. discussion Rel-18 NR\_MT\_SDT-Core

[R2-2212701](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212701.zip) Discussion on MT-SDT CMCC discussion Rel-18 NR\_MT\_SDT-Core

[R2-2212798](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212798.zip) Mobile-terminated small data transmission China Telecom discussion

[R2-2212839](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212839.zip) Stage-2 discussion on MT-SDT procedure MediaTek Inc. discussion Rel-18 NR\_MT\_SDT-Core

## 8.19 R18 Other

Misc Impacts from Other RAN WGs and TSGs (incl MC Enhancements). LS ins for Rel-18 topics that has no RAN WI.

Time budget: 0.5 TU

Tdoc Limitation: -

URLLC R18

Low Latency

[R2-2211123](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211123.zip) LS on RAN feedback for low latency (S2-2201767; contact: Huawei) SA2 LS in Rel-18 FS\_5TRS\_URLLC To:RAN2 Cc:RAN1, RAN3

=> Noted from last meeting

UL scenario of reactive RAN feedback for burst sending time adjustment

[R2-2211135](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211135.zip) LS on UL scenario of reactive RAN feedback for burst sending time adjustment (S2-2209879; contact: Huawei) SA2 LS in Rel-18 FS\_5TRS\_URLLC To:RAN2 Cc:RAN3

=> Noted

[R2-2211557](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211557.zip) Discussion on reactive RAN feedback for burst sending time adjustment Huawei, HiSilicon discussion Rel-18

Proposal 1: Reply to SA2 that it is feasible to extend the adaptation mechanism also to the UL case based on UE feedback to RAN using RRC signalling.

- Huawei explains that we can discuss the type of feedback

=> Noted

[R2-2211558](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211558.zip) Draft Reply LS on UL scenario of reactive RAN feedback for burst sending time adjustment Huawei, HiSilicon Rel-18 LS out Rel-18 FS\_5TRS\_URLLC To:SA2 Cc:RAN3

[R2-2211779](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211779.zip) Discussion on SA2 LS on UL scenario of reactive RAN feedback for burst sending time adjustment Nokia, Nokia Shanghai Bell discussion Rel-18 FS\_5TRS\_URLLC

*Proposal: In the reply LS to SA2, ask for clarification on how dynamic the information is and the delay requirement for providing the assistance information from the UE.*

- Nokia indicates that to add something to RRC is possible but we need to understand the requirement as it may not work

- Qualcomm thinks that we are trying to reduce delay by involving UE, gNB, CN etc while we can also figure it out in the UE. It also goes beyond feasibility and the solution is not good.

- Samsung thinks that the usefulness of the solution is up to SA2 and it is not RAN2 business

=> Noted

[R2-2212419](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212419.zip) Discussion on reactive RAN feedback for burst sending time adjustment Ericsson discussion Rel-18

Proposal 1 Reply SA2 that the gNB will attempt to adjust the scheduling such that the offset is low and an approach where the application layer adjusts data generation to reduce the offset may interfere with the gNB’s procedures to reduce the offset

Proposal 2 Reply SA2 that, even though the approach where the application layer adjusts data generation to reduce the offset may interfere with the RAN-procedures to reduce the offset, in isolation: it may in some particular scenarios possible to design an offset reporting mechanism from the UE to the RAN. But also infeasible in some other scenarios. However, due the described interference, RAN2 recommends against this overall approach.

- Ericsson thinks that the overall procedure conflicts with some RAN2 procedures but it is possible that we design something

=> Noted

[R2-2212478](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212478.zip) Discussion of SA2 LS on RAN UL burst sending time adjustment Qualcomm Incorporated discussion Rel-18

=> Noted

**Agreements:**

- Respond to SA2 that a solution is possible in RAN2, but:

- Ask question on the requirement and dynamicity of the solution

- Provide some RAN2 inputs about the solution

- Email discuss 4 days after meeting [310]

Time Synchronization Status notification towards UE(s)

[R2-2211134](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211134.zip) LS on Time Synchronization Status notification towards UE(s) (S2-2209876; contact: Nokia) SA2 LS in Rel-18 FS\_5TRS\_URLLC To:RAN2, RAN3, SA3 Cc:RAN1

=> Noted

[R2-2211777](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211777.zip) Discussion on SA2 LS on Time Synchronization Status notification towards UE(s) Nokia, Nokia Shanghai Bell discussion Rel-18 FS\_5TRS\_URLLC

*Alternative 1: gNB provides a reference report ID within SIB*

*Alternative 2: gNB provides a flag and a timestamp*

*Alternative 3: Broadcast the time change status in SIB*

*Alternative 4: Ciphered RAN Time Synchronization Status in SIB*

*Proposal 1: Since the time synchronization status report is not UE specific and it is applicable for all the UEs requiring it, SIB based approach fits better from RAN2 point of view or at least any solution to be adopted should not result in a large number of UEs trying to get connected simultaneously.*

*Proposal 2: To reply SA2 LS on Time Synchronization Status notification towards UE(s) with observations on the alternatives and RAN2 preference as proposed in proposal 1.*

=> Noted

- Huawei has another solution to not send back a response as SA2 still has FFS on the content. Nokia thinks that we should just state RAN2’s principle, if it is not UE specific then we can do SIB, but if it requires dedicated information then from RAN2 perspective it would be good to avoid all UEs going to connected at the same time.

- Qualcomm clarifies that there are two discussion, detailed information in the dedicate RRC and this discussion is to inform that the clock quality has changed and there is value to send the LS. If we want to differentiate the information given to the UE that would require the UE to go to connected mode.

- Ericsson also thinks that it would be good to indicate that we shouldn’t have many UEs entering at the same time and the time information in connected is much more accurate and ask what the information really is

- Qualcomm indicates that we can’t put the information in the SIB as the information is extensive. Qualcomm explains that UEs entering at the same time is not a problem as this is not paging.

- ZTE thinks that there is another discussion point about whether the information needs to be ciphered. Vodafone explains that we have ciphering on SIBs. Ericsson explains that it may be different from positioning as the information is generated in the CN and not in the gNB.

**Agreements:**

Respond to SA2 indicating:

- RAN2’s principle, if the information is not UE specific then we can do SIB and whether the information is required in IDLE/INACTIVE, but if it requires dedicated information then from RAN2 perspective it would be good to avoid all UEs going to connected at the same time

- In connected mode the UE can be provided with more accurate information

- SIB size matters in RAN2 so keeping the size of information reasonable is important.

- ask whether the information needs to be based on UE subscription and/or be ciphered

- email discussion – 4 days [511]

Not treated

[R2-2211778](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211778.zip) Draft LS response on 5GS time synchronization status report towards UE(s) Nokia, Nokia Shanghai Bell LS out Rel-18 FS\_5TRS\_URLLC To:SA2

[R2-2211994](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211994.zip) Consideration on Time Synchronization Status notification towards UE(s) ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd discussion NR\_IIOT\_URLLC\_enh-Core

[R2-2212480](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212480.zip) Discussion of SA2 LS on Time Synchronization notification to UE Qualcomm Incorporated discussion Rel-18

[R2-2211997](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211997.zip) Reply LS on Time Synchronization Status notification towards UE(s) ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd LS out NR\_IIOT\_URLLC\_enh-Core To:SA2, RAN3, SA3 Cc:RAN1

[R2-2211559](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2211559.zip) Discussion on Time Synchronization Status notification towards UE(s) Huawei, HiSilicon discussion Rel-18

[R2-2212418](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_120\Docs\R2-2212418.zip) Analysis of alternatives for sending time synchronization status Ericsson discussion Rel-18