3GPP TSG-RAN WG2 Meeting #117 electronic R2-2203512

Online, Feb 21st - Mar 3rd, 2022

**Agenda item: 10.2**

**Source: Vice Chairman (ZTE Corporation)**

**Title: Report from Break-out session on R17 NTN, REDCAP and CE**

**Document for: Approval**

General

Recording of voice or video at meetings is not used in 3GPP. This applies also to this e-Meeting. At this e-Meeting, no specific actions are taken to prevent the recording of web conferences. Companies that have concerns related to recordings, if any, may express those by email in the main meeting organizational thread [AT117-e][000]

Organizational

1. All organization emails and notes will be shared over the following email discussion throughout the meeting:

* [AT117-e][100] ****Organizational - NTN, REDCAP and CE session (RAN2 VC)****

Scope:

* + - Share plans for the meeting and list of ongoing email discussions for the sessions related to NTN, REDCAP and CE
    - Share meetings notes and agreements for review and endorsement

Schedule/Plan

WEEK 1:

|  |  |  |  |
| --- | --- | --- | --- |
| **Time Zone UTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
| 12:50-13:00 | R2 117-e planning Q&A |
| 13:00-13:45 | NR17 IoT NTN (Johan) | NR17 Multi-SIM (Tero) | NR17 SL enh (Kyeongin) |
| 13:45-14:30 | NR17 IoT NTN (Johan) | NR17 Small Data Enh (Diana) | NR17 SL enh (Kyeongin) |
| 14:30-15:15 | NR17 feMIMO (Johan) | NR17 Small Data Enh (Diana) | NR17 SL Relay (Nathan) |
| 15:15-16:00 | NR17 MGE (Johan) | NR17 RACH indication / partitioning (Diana) | NR17 SL Relay (Nathan) |
| **Tuesday** |  |  |  |
| 13:00-13:45 | NR17 eIAB (Johan) | NR17 SONMDT (HuNan) | LTE17 IoT (Brian) |
| 13:45-14:30 | NR17 eIAB (Johan) | NR17 IIOT (Diana) | **NR17 NTN (Sergio)**  **[8.10.1]**  **[8.10.2] offline 103**  **[8.10.3] offline 101, 102, 108**  **[8.10.4] offline 104** |
| 14:30-15:15 | NR17 ePowSav (Johan) | NR17 Pos (Nathan) |
| 15:15-16:00 | NR17 Other (Johan) | NR17 Pos (Nathan) | **NR17 CovEnh (Sergio)**  **[8.19.1]**  **[8.19.2]** |
| **Wednesd** |  |  |  |
| 05:00-06:00 | NR17 ePowSav (Johan) *TBD (or feMIMO or MGE or NR17 Other)* | NR17 up to 71 GHz (Tero) | NR17 Pos or SL Relay (Nathan) |
| **Thursday** |  |  |  |
| 04:30-05:30 | NR17 QoE (Johan) | NR17 Multi-SIM (Tero) | **NR17 RedCap (Sergio)**  **[8.12.1]**  **[8.12.2] offline 105**  **[8.12.4]**  **[8.12.3] offline 106**  **[8.12.5] offline 107** |
| 05:30-06:30 | NR17 MBS (Johan) | LTE17 UPIP (Tero)  TBD Other (Tero) |
| **Friday** |  |  |  |
| 04:30-05:30 | NR17 MBS (Johan) | NR17 RAN Slicing (Tero) | NR17 SL Relay (Nathan) |
| 05:30-06:30 | MR17 MBS, UP (Johan) | NR17 DCCA (Tero) | EUTRA legacy IoT (Emre/Brian) |

WEEK 2:

|  |  |  |  |
| --- | --- | --- | --- |
| **Time Zone UTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
| 13:00-13:45 | NR17 UDC (Johan)  NR17 eNPN (Johan) | NR17 SONMDT (HuNan) | LTE17 IoT (Brian) |
| 13:45-14:30 | NR17 AI 8.0.x (Johan) | NR17 IIOT (Diana) | NR17 Pos (Nathan) |
| 14:30-15:15 | NR17 TEI (Johan) | NR17 RACH indication / partitioning (Diana) | CB Nathan |
| 15:15-16:00 | NR15 NR16 CB (Johan) | CB Diana | CB Nathan |
| **Tuesday** |  |  |  |
| 13:00-13:45 | CB MGE Johan | **CB Sergio**  **NR NTN** | NR17 SL enh (Kyeongin) |
| 13:45-14:30 | CB MBS Johan | **CB Sergio**  **NR NTN** | NR17 SL enh (Kyeongin) |
| 14:30-15:15 | CB IoT NTN Johan | CB Tero | CB Diana |
| 15:15-16:00 | CB ePowSav Johan | CB Tero | CB Diana |
| **Wednesday** |  |  |  |
| 13:00-13:45 | NR17 feMIMO | CB HuNan | CB Brian Emre |
| 13:45-14:30 | NR17 feMIMO | **CB Sergio**  **RedCap** | CB Nathan |
| 14:30-15:15 | CB Johan | **CB Sergio**  **RedCap, CovEnh** | CB Nathan |
| 15:15-16:00 | CB Johan | CB Tero | CB or Other Kyeongin |
| **Thursday** |  |  |  |
| 04:30-05:30 | CB Johan | CB TBD | CB TBD |
| 05:30-06:30 | CB Johan | CB TBD | CB TBD |

List and status of offline email discussions

NOTE: No offline email discussions will be kicked off before Sunday Feb 20th, 19:00 UTC

* [AT117-e][101][NTN] RRC open issues (Ericsson)

Updated scope:

1. Continue the discussion on RRC open issues
2. Update the RRC CR

Updated intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)
    - Updated RRC CR

Updated deadline (for companies' feedback): Thursday 2022-02-24 1600 UTC

Updated deadline (for rapporteur's summary in R2-2203544): Thursday 2022-02-24 1800 UTC

Deadline (for RRC CR in R2-2203549): Thursday 2022-03-03 1000 UTC

Proposals marked "for agreement" in R2-2203544 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

Status: Ongoing

* [AT117-e][102][NTN] Idle mode open issues (ZTE)

Updated scope:

1. Continue the discussion on idle mode open issues
2. Update the 38.304 CR

Updated intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)
    - Updated 38.304 CR

Updated deadline (for companies' feedback): Thursday 2022-02-24 1400 UTC

Updated deadline (for rapporteur's summary in R2-2203543): Thursday 2022-02-24 1600 UTC

Deadline (for 38.304 CR in R2-2203548): Thursday 2022-03-03 1000 UTC

Proposals marked "for agreement" in R2-2203543 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

Status: Ongoing

* [AT117-e][103][NTN] MAC open issues (Interdigital)

Updated scope:

1. Continue the discussion on MAC open issues
2. Update the MAC CR

Updated intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)
    - Updated MAC CR

Updated deadline (for companies' feedback): Thursday 2022-02-24 1800 UTC

Updated deadline (for rapporteur's summary in R2-2203542): Thursday 2022-02-24 2000 UTC

Deadline (for MAC CR in R2-2203547): Thursday 2022-03-03 1000 UTC

Proposals marked "for agreement" in R2-2203542 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

Status: Ongoing

* [AT117-e][104][NTN] UE caps open issues (Intel)

Updated scope:

1. Continue the discussion on UE caps open issues
2. Update the 38.306 and 38.331 CRs

Updated intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)
    - Updated 38.304 and 38.331 CRs

Updated deadline (for companies' feedback): Thursday 2022-02-24 1400 UTC

Updated deadline (for rapporteur's summary in R2-2203546): Thursday 2022-02-24 1600 UTC

Deadline (for 38.304 CR in R2-2203550 and R2-2203551): Thursday 2022-03-03 1000 UTC

Proposals marked "for agreement" in R2-2203546 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

Status: Ongoing

* [AT117-e][105][RedCap] CP open issues (Ericsson)

Initial scope: Discuss CP open issues based on the report in [R2-2203502](file:///C:\Data\3GPP\RAN2\Docs\R2-2203502.zip) and the company contributions in AI 8.12.4

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Wednesday 2022-02-23 0600 UTC

Initial deadline (for rapporteur's summary in R2-2203538): Wednesday 2022-02-23 1000 UTC

Proposals marked "for agreement" in R2-2203538 not challenged until Wednesday 2022-02-23 2200 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue during the GTW session on Thursday).

Status: Ongoing

* [AT117-e][106][RedCap] MAC open issues (vivo)

Initial scope: Discuss MAC open issues based on the report in [R2-2202317](file:///C:\Data\3GPP\RAN2\Docs\R2-2202317.zip)

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Wednesday 2022-02-23 0600 UTC

Initial deadline (for rapporteur's summary in R2-2203539): Wednesday 2022-02-23 1000 UTC

Proposals marked "for agreement" in R2-2203539 not challenged until Wednesday 2022-02-23 2200 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue during the GTW session on Thursday).

Status: Ongoing

* [AT117-e][107][RedCap] UE caps open issues (Intel)

Initial scope: Discuss UE caps open issues based on the report in [R2-2202497](file:///C:\Data\3GPP\Extracts\R2-2202497_Report%20of%20Pre117-107-P2-v11.docx)

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Wednesday 2022-02-23 0600 UTC

Initial deadline (for rapporteur's summary in R2-2203540): Wednesday 2022-02-23 1000 UTC

Proposals marked "for agreement" in R2-2203540 not challenged until Wednesday 2022-02-23 2200 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue during the GTW session on Thursday).

Status: Ongoing

* [AT117-e][108][NTN] CHO open issues (Nokia)

Updated scope: Continue the discussion on CHO open issues

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Thursday 2022-02-24 1600 UTC

Initial deadline (for rapporteur's summary in R2-2203545): Thursday 2022-02-24 1800 UTC

Proposals marked "for agreement" in R2-2203545 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

Status: Ongoing

* [AT117-e][109][NTN] Stage 2 CR (Thales)

Scope: Update the Stage 2 CR

Intended outcome: Agreed Stage 2 CR

Initial deadline (for companies' feedback): Monday 2022-02-28 1800 UTC

Initial deadline (for Stage 2 CR in R2-2203537): Tuesday 2022-03-01 1000 UTC

Status: Ongoing

* [AT117-e][110][RedCap] Stage 2 CR (Nokia)

Scope: Update the Stage 2 CR

Intended outcome: Agreed Stage 2 CR

Initial deadline (for companies' feedback): Tuesday 2022-03-01 1800 UTC

Initial deadline (for Stage 2 CR in R2-2203541): Wednesday 2022-03-02 1000 UTC

Status: Ongoing

* [AT117-e][111][CovEnh] MAC CR (ZTE)

Scope: Update the MAC CR

Intended outcome: Agreed MAC CR

Initial deadline (for companies' feedback): Tuesday 2022-03-01 1800 UTC

Initial deadline (for Stage 2 CR in R2-2203553): Wednesday 2022-03-02 1000 UTC

Status: Ongoing

* [AT117-e][112][CovEnh] RRC CR (Huawei)

Scope: Update the RRC CR

Intended outcome: Agreed RRC CR

Initial deadline (for companies' feedback): Tuesday 2022-03-01 1800 UTC

Initial deadline (for Stage 2 CR in R2-2203554): Wednesday 2022-03-02 1000 UTC

Status: Ongoing

## 8.10 NR Non-Terrestrial Networks (NTN)

(NR\_NTN\_solutions-Core; leading WG: RAN2; REL-17; WID: [RP-211557](file:///C:\Data\3GPP\archive\RAN\RAN%2392\Tdocs\RP-211557.zip))

Time budget: 1.5 TU

Tdoc Limitation: 4 tdocs

### 8.10.1 Organizational

LSs, rapporteur inputs and other organizational documents. Rapporteur inputs and other pre-assigned documents in this AI do not count towards the tdoc limitation.

#### 8.10.1.1 LS in

For LSes that need action: one tdoc by contact company to address the LS and potential reply is considered.

Rapporteur input may be provided.

[R2-2202131](file:///C:\Data\3GPP\Extracts\R2-2202131_R3-221370.docx) Reply LS on LS on TAC reporting in ULI and support of SAs and FAs for NR Satellite Access (R3-220121/S2-2109337) (R3-221370; contact: Qualcomm) RAN3 LS in Rel-17 To:SA2 Cc:RAN2, CT1

* Noted

[R2-2202132](file:///C:\Data\3GPP\Extracts\R2-2202132_R3-221379.docx) LS on RAN Initiated Release due to out-of-PLMN area condition (R3-221379; contact: Qualcomm) RAN3 LS in Rel-17 To:SA2 Cc:CT1, RAN2

* Noted

#### 8.10.1.2 CRs

CR Rapporteurs to provide running CRs, potentially updated.

[R2-2202233](file:///C:\Data\3GPP\Extracts\R2-2202233_NR-NTN%20Stg2%20Running%20CR_with%20RAN3%20v12.docx) Stg2 running CR - NTN THALES draftCR Rel-17 38.300 16.8.0 NR\_NTN\_solutions

* Discussed in offline 109

[R2-2202234](file:///C:\Data\3GPP\RAN2\Docs\R2-2202234.zip) NTN RAN3's stg2 BL CR THALES draftCR Rel-17 38.300 16.8.0 NR\_NTN\_solutions

* [AT117-e][109][NTN] Stage 2 CR (Thales)

Scope: Update the Stage 2 CR

Intended outcome: Agreed Stage 2 CR

Initial deadline (for companies' feedback): Monday 2022-02-28 1800 UTC

Initial deadline (for summary in R2-2203552 and Stage 2 CR in R2-2203537): Tuesday 2022-03-01 1000 UTC

R2-2203552 [offline-109] NR NTN Stage 2 CR Thales discussion Rel-17 NR\_NTN\_solutions-Core

R2-2203537 Introduction of NTN Thales CR Rel-17 38.300 16.8.0 XXXX - B NR\_NTN\_solutions-Core

[R2-2202456](file:///C:\Data\3GPP\Extracts\R2-2202456%20Draft%20331%20CR%20for%20NR%20NTN%20UE%20capabilities.docx) Draft 331 CR for NR NTN UE capabilities Intel Corporation draftCR Rel-17 38.331 16.7.0 B NR\_NTN\_solutions-Core

* Noted
* Revised in R2-2203550
* Continue in offline 104

R2-2203550 Draft 331 CR for NR NTN UE capabilities Intel Corporation draftCR Rel-17 38.331 16.7.0 B NR\_NTN\_solutions-Core

[R2-2202457](file:///C:\Data\3GPP\Extracts\R2-2202457%20Draft%20306%20CR%20for%20NR%20NTN%20UE%20capabilities.docx) Draft 306 CR for NR NTN UE capabilities Intel Corporation draftCR Rel-17 38.306 16.7.0 B NR\_NTN\_solutions-Core

* Noted
* Revised in R2-2203551
* Continue in offline 104

R2-2203551 Draft 306 CR for NR NTN UE capabilities Intel Corporation draftCR Rel-17 38.306 16.7.0 B NR\_NTN\_solutions-Core

[R2-2203157](file:///C:\Data\3GPP\Extracts\R2-2203157%20Introduction%20of%20Release17%20NTN%2038331.docx) Introduction of Release-17 NTN Ericsson CR Rel-17 38.331 16.7.0 2930 - B NR\_NTN\_enh-Core

* Noted
* Revised in R2-2203549
* Continue in offline 101

R2-2203549 Introduction of Release-17 NTN Ericsson CR Rel-17 38.331 16.7.0 2930 1 B NR\_NTN\_enh-Core

[R2-2203385](file:///C:\Data\3GPP\Extracts\R2-2203385_Introduction%20of%20NTN.docx) Introduction of NTN ZTE corporation,Sanechips CR Rel-17 38.304 16.7.0 0233 - B NR\_NTN\_solutions-Core

* Noted
* Revised in R2-2203548
* Continue in offline 102

R2-2203548 Introduction of NTN ZTE corporation,Sanechips CR Rel-17 38.304 16.7.0 0233 1 B NR\_NTN\_solutions-Core

[R2-2203425](file:///C:\Data\3GPP\Extracts\R2-2203425%20MAC%20running%20CR_117e.docx) Stage 3 NTN running CR for 38.321 - RAN2#117 InterDigital CR Rel-17 38.321 16.7.0 1215 - B NR\_NTN\_solutions-Core

* Noted
* Revised in R2-2203547
* Continue in offline 103

R2-2203547 Stage 3 NTN running CR for 38.321 - RAN2#117 InterDigital CR Rel-17 38.321 16.7.0 1215 1 B NR\_NTN\_solutions-Core

### 8.10.2 User Plane

#### 8.10.2.1 MAC aspects

##### 8.10.2.1.1 Open issues

Contributions on open issues listed in [R2-2201900](file:///C:\Data\3GPP\archive\RAN2\RAN2%23116bis\Tdocs\R2-2201900.zip). For some aspects the discussion will happen in Pre117 email discussion [103]. For the others, company contributions can be submitted.

Including report of [Pre117-e][103][NTN] MAC open issues (Interdigital)

[R2-2203424](file:///C:\Data\3GPP\Extracts\R2-2203424%20Report%20of%20%5bPre117-e%5d%5b103%5d%5bNTN%5d%20MAC%20open%20issues.docx) Summary of [Pre117-e][NTN][103] MAC open issues InterDigital discussion Rel-17 NR\_NTN\_solutions-Core Late

* Discussed in offline 103
* [AT117-e][103][NTN] MAC open issues (Interdigital)

Initial scope: Discuss MAC open issues based on the report in [R2-2203424](file:///C:\Data\3GPP\Extracts\R2-2203424%20Report%20of%20%5bPre117-e%5d%5b103%5d%5bNTN%5d%20MAC%20open%20issues.docx) and other company contributions in AI 8.10.2.1.1

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Monday 2022-02-21 1700 UTC

Initial deadline (for rapporteur's summary in R2-2203532): Monday 2022-02-21 2000 UTC

Updated scope:

1. Continue the discussion on MAC open issues
2. Update the MAC CR

Updated intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)
    - Updated MAC CR

Updated deadline (for companies' feedback): Thursday 2022-02-24 1800 UTC

Updated deadline (for rapporteur's summary in R2-2203542): Thursday 2022-02-24 2000 UTC

Deadline (for MAC CR in R2-2203547): Thursday 2022-03-03 1000 UTC

Proposals marked "for agreement" in R2-2203542 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

[R2-2203532](file:///C:\Data\3GPP\Extracts\R2-2203532%20Report%20of%20%5bAT117-e%5d%5b103%5d%5bNTN%5d%20MAC%20open%20issues.docx) [offline-103] MAC open issues Interdigital discussion Rel-17 NR\_NTN\_solutions-Core

For email agreement

From [Pre117-e] Discussion:

Proposal 1.1: During RA procedure for RRC re-establishment procedure, the UE should trigger TA report if an indication is broadcasted by the target cell’s SI.

* Agreed

Proposal 1.2: During RA procedure for handover, the UE should trigger TA report if the target cell indicates this in the handover command.

* Agreed

Proposal 1.3: Other than re-establishment and handover procedure, TA reporting in connected mode is not controlled by enabling/disabling indication in SI.

* Samsung thinks that according to proposal 1.3 it seems that for HO procedure, TA reporting in connected mode is controlled by “enabling/disabling indication in SI”, which is not aligned with proposal 1.2 “in the handover command”. It's understood that handover command may include same information as target cell’s system information, but still it is considered controlled by “handover command” not considered by target cell’s system information acquisition.
* Agreed as "Other than re-establishment (TA reporting controlled by target cell's SI) and handover procedure (TA reporting controlled by HO command), TA reporting in connected mode is not controlled by enabling/disabling indication in SI."

Proposal 1.11: RAN2 confirms ra-ResponseWindow and msgB-ReponseWindow are not extended in NTN.

* Agreed

Proposal 1.13: Existing parameter names are updated to: uplinkHARQ-mode, allowedHARQ-mode, and HARQ mode A/B.

* Agreed

Proposal 1.17: A NOTE is added to MAC CR clarifying that prior to starting drx-HARQ-RTT-TimerUL/DL, latest UE-gNB RTT is used to set timer length.

* Agreed

Proposal 1.19: MAC does not specify how UE detects a cell originates from a non-terrestrial network.

* Agreed

From contributions:

Proposal 2.2: Repetition transmission based HARQ retransmission is always allowed and is explicitly indicated via DCI or semi-statically via RRC signalling (as in legacy). This revises the agreement from RAN2#114e (consensus)

* Agreed

Proposal 2.3: DL MAC CE execution delay is not captured in MAC specification (consensus)

* Agreed

Agreements via email - from offline 103:

1. During RA procedure for RRC re-establishment procedure, the UE should trigger TA report if an indication is broadcasted by the target cell’s SI.
2. During RA procedure for handover, the UE should trigger TA report if the target cell indicates this in the handover command.
3. Other than re-establishment (TA reporting controlled by target cell's SI) and handover procedure (TA reporting controlled by HO command), TA reporting in connected mode is not controlled by enabling/disabling indication in SI.
4. RAN2 confirms ra-ResponseWindow and msgB-ReponseWindow are not extended in NTN.
5. Existing parameter names are updated to: uplinkHARQ-mode, allowedHARQ-mode, and HARQ mode A/B.
6. A NOTE is added to MAC CR clarifying that prior to starting drx-HARQ-RTT-TimerUL/DL, latest UE-gNB RTT is used to set timer length.
7. MAC does not specify how UE detects a cell originates from a non-terrestrial network.
8. Repetition transmission based HARQ retransmission is always allowed and is explicitly indicated via DCI or semi-statically via RRC signalling (as in legacy). This revises the agreement from RAN2#114e (consensus)
9. DL MAC CE execution delay is not captured in MAC specification (consensus)

For online discussion

From [Pre117-e] Discussion

Proposal 1.7a: RAN2 understanding: UE failing to acquire sufficiently accurate UE location to be used in the calculation of the UE’s Timing Advance value (see TS 38.211 [Y] clause 4.3.1) should not perform any UL transmission until UE location is within accuracy limits. No RAN2 specification impact. (consensus)

[AT117e] Discussion:

- Qualcomm is not clear on what the “accuracy limit is”

- Ericsson clarifies that RAN4 specifies a minimum accuracy of UE UL transmission timing error and UE location is part of it. Also that “full TA” should be replaced with a reference to TA in RAN1.

- QC thinks we should remove "until UE location is within accuracy limits"

- IDC and Ericsson are fine

* Agreed as: "RAN2 understanding: UE failing to acquire sufficiently accurate UE location to be used in the calculation of the UE’s Timing Advance value (see TS 38.211 [Y] clause 4.3.1) should not perform any UL transmission. No RAN2 specification impact."

Proposal 1.8: RAN2 confirms UE-specific TA MAC CE consists of only one field with length 16 bits, which contains the UE estimate of full UE-specific TA. (19/21)

[AT117e] Discussion:

- Vivo has a preference to have Reserved bits, but can accept majority.

- Ericsson is also fine to consider if not all 16 bits are needed.

- Samsung prefers to have reserved bits (2) both for p1.8 and 1.9. Ericsson agrees

* "UE-specific TA MAC CE" consists of only one field with length 14 bits (+ 2 reserved bits), which contains the UE estimate of full UE-specific TA

Proposal 1.9: RAN2 confirms Differential UE-Specific K\_Offset MAC CE consists of only one field with length 8 bits, which contains the Differential UE-Specific K\_Offset. (consensus)

[AT117e] Discussion:

- Ericsson thinks that to align with RAN1 agreements, the field length should be 6 bits, with 2 reserved bits.

* "Differential UE-Specific K\_Offset MAC CE" consists of only one field with length 6 bits (+2 reserved bits), which contains the Differential UE-Specific K\_Offset

Proposal 1.12: UE stops ra-ContentionResolutionTimer upon receiving PDCCH indicating Msg3 retransmission and then starts ra-ContentionResolutionTimer after the end of the Msg3 retransmission plus UE-gNB RTT. Impact to coverage and possible enhancements (e.g. to support MSG3 blind retransmission) can be considered in the Rel-18 NTN coverage enhancement SI.

[AT117e] Discussion:

- Nokia has strong concerns with P12 as it brings NW restrictions without gain as current proposal will limit blind retransmission (a legacy function). Furthermore, there is an NTN CovEnh study item in Rel-18, so it makes no sense to disable a function in Rel-17 and bring it back in Rel-18. A better option is UE does not consider the Contention Resolution unsuccessful. If ra-ContentionResolutionTimer expires during UE-gNB RTT.

- ZTE has sympathy for Nokia’s comments, and think it can be compromised by making it configurable.

- LG would also prefer to have this as a note, but is okay to go with majority

- Ericsson doesn’t think this prohibits coverage enhancement as multiple Msg 3 retransmissions can be scheduled, just not blindly. Also Nokia’s proposal has a problem that UE never declares CR unsuccessful.

- Nokia thinks that for their new proposal (P12a), it is not true UE never declares the CR unsuccessful.

Case1: If there is a new CR timer triggered, CR timer expired during the UE-gNB RTT (to wait for the new CR timer restart) will not cause the UE declare CR failure.

Case2: If there is NO new CR timer triggered, CR timer expired will cause the UE declare CR failure (just as legacy)

For case1, we understand it is a correct UE behavior since there is a future CR timer which will be run by UE later, of course UE should not declare CR failure when it waits for the timer running to resolve the Contention Resolution.

* IDC thinks we can further work on this and find a solution, e.g. make it configurable
* Ericsson also thinks Nokia proposal has some merit and are ok to further discuss this
* QC thinks there could be some issues if we don't support blind reTX
* Oppo thinks that making this configurable could be good compromise
* Further discuss offline to see whether it's possible to make it configurable

Proposal 1.15: uplinkHARQ-DRX-LCP-mode and allowedHARQ-DRX-LCP, if configured, also apply for SRB1 to SRB3.

[AT117e] Discussion:

- QC thinks it is not clear if this is also true for RRC release message

- QC wonders what is the case for the very first and very last RRC messages: is the assumption that feedback is enabled / disabled or what

- Samsung that at least for RRC release message the NW could also repeat the message multiple times. IDC agrees. HW also agrees. Oppo does not see the issue.

- Ericsson thinks this can be handled by the network

- QC wonders if for msg4 the assumption is that HARQ feedback is enabled

- HW thinks we can change the parameters' names according to p13

* Agreed as: "uplinkHARQ-mode and allowedHARQ-mode, if configured, also apply for SRB1 to SRB3"

From Contributions

Proposal 2.1: RAN2 to clarify the previous agreement as: Upon reception of configuration or reconfiguration of TA reporting trigger event, if UE has not reported TA to current serving cell during this connection before, the UE triggers a TA reporting

- Rapporteur would like to confirm that “during this connection” is the correct interpretation.

- Oppo agrees with rapporteur clarification

* Agreed as: "Upon reception of configuration or reconfiguration of TA reporting trigger event, if connected mode UE has not reported TA to current serving cell before (during this connection), the UE triggers a TA reporting" (can further check this during the implementation in the MAC CR).

From R2-2203424 (Summary of [Pre117-e][NTN][103]):

Proposal 4: RAN2 to further discuss if SR can be triggered when a TA report is triggered and no UL-SCH resources are available, or if RACH can be triggered if SR is triggered but there are no available PUCCH resources.

Proposal 10: RAN2 to further discuss naming of UE-specific TA MAC CE and Differential UE-Specific K\_Offset MAC CE to ensure alignment with RAN1 specification.

Proposal 14: RAN2 to further discuss “HARQ process 0 carries PUSCH transmission scheduled by RAR or PUSCH payload of MsgA, configuration of HARQ mode and allowedHARQ-DRX-LCP is up to NW implementation, and UE always follows it (no specification impact).”

Proposal 16: RAN2 to further discuss implementation HARQ RTT timer extension.

Proposal 18: RAN2 to further discuss method of configuredGrantTimer extension.

* configuredGrantTimer length shall be extended with higher values (FFS on the actual values)
* Continue the discussion in offline 101

Postponed

Discussion on offset for SR and CFRA (i.e., Questions 4a, 4b, 5a, and 5b) will be continued in subsequent [AT117e] discussion phase

Agreements online:

1. RAN2 understanding: UE failing to acquire sufficiently accurate UE location to be used in the calculation of the UE’s Timing Advance value (see TS 38.211 [Y] clause 4.3.1) should not perform any UL transmission. No RAN2 specification impact.
2. "UE-specific TA MAC CE" consists of only one field with length 14 bits (+ 2 reserved bits), which contains the UE estimate of full UE-specific TA
3. "Differential UE-Specific K\_Offset MAC CE" consists of only one field with length 6 bits (+2 reserved bits), which contains the Differential UE-Specific K\_Offset
4. uplinkHARQ-mode and allowedHARQ-mode, if configured, also apply for SRB1 to SRB3
5. Upon reception of configuration or reconfiguration of TA reporting trigger event, if connected mode UE has not reported TA to current serving cell before (during this connection), the UE triggers a TA reporting" (can further check this during the implementation in the MAC CR)
6. configuredGrantTimer length shall be extended with higher values (FFS on the actual values)

R2-2203542 [offline-103] MAC open issues - second round Interdigital discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202302](file:///C:\Data\3GPP\Extracts\R2-2202302%20Discussion%20on%20MAC%20open%20issues.doc) Discussion on MAC open issues Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202420](file:///C:\Data\3GPP\Extracts\R2-2202420%20Remaining%20issues%20on%20HARQ%20process%20in%20NTN.doc) Remaining issues on HARQ process in NTN Spreadtrum Communications discussion Rel-17

[R2-2202546](file:///C:\Data\3GPP\Extracts\R2-2202546%20UL%20synchronization%20and%20validity%20timer%20expiry.docx) UL synchronization and validity timer expiry Apple discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202547](file:///C:\Data\3GPP\Extracts\R2-2202547%20UE%20location%20and%20TA%20reporting.docx) UE location and TA reporting Apple discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202563](file:///C:\Data\3GPP\Extracts\R2-2202563%20UL%20sync.doc) UL synchronization failure in RRC\_CONNECTED Qualcomm Incorporated discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202613](file:///C:\Data\3GPP\Extracts\R2-2202613%20Considerations%20on%20MAC%20open%20issues.docx) Considerations on MAC open issues CMCC discussion Rel-17 NR\_NTN\_solutions-Core

moved from 8.10.2.1

[R2-2202773](file:///C:\Data\3GPP\Extracts\R2-2202773%20Remaining%20MAC%20Open%20Issues%20for%20NR%20NTN.docx) Remaining MAC Open Issues for NR NTN vivo discussion

[R2-2202972](file:///C:\Data\3GPP\Extracts\R2-2202972%20Consideration%20on%20MAC%20open%20issues.doc) Consideration on MAC open issues ZTE Corporation, Sanechips discussion Rel-17

[R2-2202999](file:///C:\Data\3GPP\Extracts\R2-2202999%20-%20Discussion%20on%20MAC%20open%20issues%20in%20NTN.doc) Discussion on MAC open issues in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

moved from 8.10.2.1

[R2-2203076](file:///C:\Data\3GPP\Extracts\R2-2203076%20Discussion%20on%20Left%20Open%20Issues%20of%20Other%20MAC%20Aspects.docx) Discussion on Left Open Issues of Other MAC Aspects CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2203151](file:///C:\Data\3GPP\Extracts\R2-2203151.docx) Discussion on TA reporting ITL discussion Rel-17

[R2-2203165](file:///C:\Data\3GPP\Extracts\R2-2203165_Discussion%20on%20open%20issues%20for%20MAC%20aspects.docx) Discussion on open issues for MAC aspects LG Electronics Inc. discussion NR\_NTN\_solutions-Core

moved from 8.10.2.1

[R2-2203194](file:///C:\Data\3GPP\Extracts\R2-2203194%20Remaining%20MAC%20issues%20of%20NR%20NTN.doc) Remaining MAC issues of NR NTN Xiaomi discussion Rel-17

[R2-2203256](file:///C:\Data\3GPP\Extracts\R2-2203256%20On%20left%20open%20issues%20for%20MAC%20aspects.docx) On left open issues for MAC aspects Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2203257](file:///C:\Data\3GPP\Extracts\R2-2203257%20Discussion%20on%20Validity%20timer%20expiry%20and%20restart.docx) Discussion on Validity timer expiry and restart Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2203298](file:///C:\Data\3GPP\Extracts\R2-2203298%208.10.2.1.1%20MAC%20aspects.docx) Open issues on MAC aspects Samsung Research America discussion NR\_NTN\_solutions-Core

[R2-2203423](file:///C:\Data\3GPP\Extracts\R2-2203423%20(R17%20NTN%20WI%20AI%208.10.2.1.1)%20MAC%20Open%20issues.docx) Remaining MAC open issues in NTN InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

moved from 8.10.2.1

[R2-2203482](file:///C:\Data\3GPP\Extracts\R2-2203482%20-%20Remaining%20MAC%20issues%20in%20NTNs.docx) Remaining MAC issues in NTNs Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

##### 8.10.2.1.2 Other RACH aspects

Contributions on other RACH issues.

[R2-2202303](file:///C:\Data\3GPP\Extracts\R2-2202303%20Discussion%20on%20remaining%20MAC%20issues.DOC) Discussion on remaining MAC issues Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

##### 8.10.2.1.3 Other MAC aspects

Contributions on other (non RACH) MAC issues.

[R2-2202421](file:///C:\Data\3GPP\Extracts\R2-2202421%20MAC%20operations%20about%20the%20validity%20timer%20expiry.doc) MAC operation about the validity timer expiry Spreadtrum Communications discussion Rel-17

[R2-2203203](file:///C:\Data\3GPP\Extracts\R2-2203203.doc) CG enhancements in NTN Sony discussion Rel-17 NR\_NTN\_solutions-Core [R2-2200911](file:///C:\Data\3GPP\Extracts\R2-2200911.doc)

#### 8.10.2.2 RLC and PDCP aspects

[R2-2203481](file:///C:\Data\3GPP\Extracts\R2-2203481%20-%20Remaining%20issues%20for%20RLC%20and%20PDCP%20in%20NTNs.docx) Remaining issues for RLC and PDCP in NTNs Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

Proposal 1 Introduce the RLC t-ReassemblyExt field as an 8-bit integer with a step size of 10 ms from 210 ms, 220 ms, and so on up to a maximum of 2760 ms.

Proposal 2 RAN2 to discuss whether higher values than the agreed 2000 ms is needed for PDCP discard timer, for example higher than 2200 ms as that is the maximum RLC t-Reassembly agreed in NTNs or if infinity is sufficient for those cases.

Proposal 3 Introduce PDCP discardTimerExt with values {2000 2500 3000 3500 4000 4500 spare2 spare1}

Proposal 4 Introduce the new PDCP t-Reordering values 3500 4000 4500 5000 5500 6000 6500 7000 7500 8000 8500 9000 using some of the spare values.

* Discuss all proposals above in offline 101

### 8.10.3 Control Plane

#### 8.10.3.1 Idle/inactive mode aspects

##### 8.10.3.1.1 Open issues

Contributions on open issues listed in [R2-2201898](file:///C:\Data\3GPP\archive\RAN2\RAN2%23116bis\Tdocs\R2-2201898.zip). For some aspects the discussion will happen in Pre117 email discussion [102]. For the others, company contributions can be submitted.

Including report of [Pre117-e][102][NTN] Idle mode open issues (ZTE)

[R2-2203386](file:///C:\Data\3GPP\Extracts\R2-2203386_%5bPre117-e%5d%5b102%5d%5bNTN%5d%20Idle%20mode%20open%20issues%20(ZTE)_v25_Rapporteur.docx) Report of [Pre117-e][102][NTN] Idle mode open issues (ZTE) ZTE corporation,Sanechips discussion Rel-17 NR\_NTN\_solutions-Core Late

* Discussed in offline 102
* [AT117-e][102][NTN] Idle mode open issues (ZTE)

Initial scope: Discuss Idle open issues based on the report in [R2-2203386](file:///C:\Data\3GPP\Extracts\R2-2203386_%5bPre117-e%5d%5b102%5d%5bNTN%5d%20Idle%20mode%20open%20issues%20(ZTE)_v25_Rapporteur.docx)

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Monday 2022-02-21 1700 UTC

Initial deadline (for rapporteur's summary in R2-2203533): Monday 2022-02-21 2000 UTC

Updated scope:

1. Continue the discussion on idle mode open issues
2. Update the 38.304 CR

Updated intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)
    - Updated 38.304 CR

Updated deadline (for companies' feedback): Thursday 2022-02-24 1400 UTC

Updated deadline (for rapporteur's summary in R2-2203543): Thursday 2022-02-24 1600 UTC

Deadline (for 38.304 CR in R2-2203548): Thursday 2022-03-03 1000 UTC

Proposals marked "for agreement" in R2-2203543 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

[R2-2203533](file:///C:\Data\3GPP\Extracts\R2-2203533_%5bAT117-e%5d%5b102%5d%5bNTN%5d%20Idle%20mode%20open%20issues_v21_Summary.docx) [offline-102] Idle mode open issues ZTE corporation discussion Rel-17 NR\_NTN\_solutions-Core

Proposals for agreement:

Proposal 2: Satellite ephemeris based cell reselection is represented by time and location based cell reselection. No further enhancement in this release for ephemeris based cell reselection.

* Agreed

Proposal 4: No further enhancement on cell reselection priority in NTN. Remove the corresponding FFS from 38.304 CR.

* Agreed

Proposal 5: No need to provide the timing information about the new upcoming cell for either earth fixed scenario or earth moving scenario in Rel-17.

* Agreed

Proposal 8: No further enhancement on cell reselection procedure to support TN prioritization over NTN in Rel-17.

* QC wonders if we need to consider NTN prioritization over TN
* ZTE thinks we can agree the proposal as it is for now and discuss more about NTN prioritization over TN if needed
* Agreed

Proposals require further discussion:

Proposal 1: A threshold of the distance between UE and the cell reference location should be introduced and only neighbor cells with distance shorter than this threshold will be evaluated by UE during cell reselection.

* ZTE thinks the target cell would be selected using legacy criteria
* Oppo thinks this would not work for cell reselection among different constellations. VC thinks this might not be a realistic scenario in Rel-17
* Continue offline

[Revised] Proposal 3: Simultaneous configuration of location-based and time based reselection is not supported.

* HW thinks there is no problem with simultaneous configuration
* Samsung thinks there is, at least we need to have more specification effort, e.g. to specify the UE behaviour.
* Continue offline

[Revised] Proposal 6: In addition to the ephemeris information, to discusss whether assistance information is needed for UE-based SMTC adjustment in idle and inactive mode. If Yes, down select from the following options:

Option 1: feeder link delay of neighbor cells

Option 2: Common TA paramaters of neighbor cells

Option 3: SMTC offset or change rate of neighbor cells

Option 4: Reference time of the SMTC of neighbor cells

Option 5: Delay difference between the serving and neighbor cell

* RAN2 assumes that in addition to the ephemeris information, assistance information is needed for UE-based SMTC adjustment in idle and inactive mode. (FFS on the option to enable this)
* Continue offline to discuss the specific option

Proposal 7: No further enhancement on the SMTC broadcast for measurements in idle and inactive mode.

Proposal 9: No need to define a mechanism in RAN2 to prevent non-NTN capable UE from accessing an NTN cell in Rel-17 for NR-NTN.

* ZTE indicates this proposal is based on slight majority. One alternative is to go for the IoT-NTN approach
* Samsung thinks we should discuss the scenario first and whether this is an issue in Rel-17
* VC thinks it would be good to adopt a solution that avoids future compatibility issues
* WA: We follow a similar solution as in IoT-NTN for this (FFS on the details and whether this is always needed or not).
* Continue offline

[12/23] Proposal 10: No explicit indication to show whether a cell is earth fixed or earth moving.

* Continue offline

Proposal 11: No specific enhancement to provide the PCI of the incoming cell, can be provided as one element in the existing intraFreqWhiteCellList or interFreqWhiteCellList.

* Continue in offline 101

Proposal 12: Broadcasting the list of orbital parameters and timing drift parameters of the neighbor satellites as delta to the orbital parameters of the serving satellite is not supported.

* Continue in offline 101

Proposal 13: No need to provide the geographic tag associated with a set of cell reselection information or asscociation between the frequency and the neighbour satellite in Rel-17.

* Continue in offline 101

Proposal 14: Adopt the text proposal in R2-2203725 to capture the location based cell reselection agreements in 38.304.

* Agreed

Agreements:

1. Satellite ephemeris based cell reselection is represented by time and location based cell reselection. No further enhancement in this release for ephemeris based cell reselection.
2. No further enhancement on cell reselection priority in NTN. Remove the corresponding FFS from 38.304 CR.
3. No need to provide the timing information about the new upcoming cell for either earth fixed scenario or earth moving scenario in Rel-17.
4. No further enhancement on cell reselection procedure to support TN prioritization over NTN in Rel-17.
5. RAN2 assumes that in addition to the ephemeris information, assistance information is needed for UE-based SMTC adjustment in idle and inactive mode. (FFS on the option to enable this)
6. Adopt the text proposal in R2-2203725 to capture the location based cell reselection agreements in 38.304.

Working Assumption:

1. To prevent non-NTN capable UE from accessing an NTN cell in Rel-17, for NR-NTN RAN2 follows a similar solution as in IoT-NTN (FFS on the details and whether this is always needed or not).

R2-2203543 [offline-102] Idle mode open issues - second round ZTE corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202235](file:///C:\Data\3GPP\Extracts\R2-2202235_UE%20location%20during%20initial%20access_v04.doc) WF for UE location during initial access in NTN THALES, Leonardo, Avanti, ESA, Sateliot, Omnispace, Novamint, Hispasat, Gatehouse, Hughes network systems, Inmarsat, Viasat, CTTC, Intelsat, Kepler, Ligado, Magister solutions, SES, Airbus discussion Rel-17 NR\_NTN\_solutions

[R2-2202422](file:///C:\Data\3GPP\Extracts\R2-2202422%20Discussion%20on%20SIB%20X%20acquiring%20procedure.doc) Discussion on the SIBX acquiring procedure Spreadtrum Communications discussion Rel-17

[R2-2202423](file:///C:\Data\3GPP\Extracts\R2-2202423%20Acquiring%20the%20ephemeris%20of%20neighbour%20cell.doc) Acquiring the ephemeris of neighbour cell Spreadtrum Communications discussion Rel-17

[R2-2202466](file:///C:\Data\3GPP\Extracts\R2-2202466%20Remaining%20Rel-17%20NTN%20open%20issues%20for%20IDLE%20mode.docx) Remaining Rel-17 NTN open issues for IDLE mode Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202548](file:///C:\Data\3GPP\Extracts\R2-2202548%20NTN-TN%20idle%20mode%20mobility.docx) NTN-TN idle mode mobility Apple discussion Rel-17 NR\_NTN\_solutions-Core [R2-2201179](file:///C:\Data\3GPP\Extracts\R2-2201179%20NTN-TN%20idle%20mode%20mobility.docx)

[R2-2203049](file:///C:\Data\3GPP\Extracts\R2-2203049.docx) Measurements and cell reselection Samsung Research America discussion

Withdrawn

R2-2202394 On reporting of UE location information ZTE corporation, Sanechips discussion Rel-17 NR\_NTN\_solutions-Core Withdrawn

##### 8.10.3.1.2 Other

Contributions on any other issues.

[R2-2202566](file:///C:\Data\3GPP\Extracts\R2-2202566%20Idle%20mode.docx) Assistance information for IDLE mode measurements Qualcomm Incorporated discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202586](file:///C:\Data\3GPP\Extracts\R2-2202586%20Epoch%20time%20and%20validity%20time%20for%20neighbour%20satellite%20ephemeris.docx) Epoch time and validity time for neighbour satellite ephemeris Lenovo, Motorola Mobility discussion Rel-17

[R2-2202774](file:///C:\Data\3GPP\Extracts\R2-2202774%20Remaining%20issues%20on%20location-based%20cell%20reselection.docx) Remaining issues on location-based cell reselection vivo discussion

[R2-2203004](file:///C:\Data\3GPP\Extracts\R2-2203004%20-%20Discussion%20on%20measurement%20rules%20for%20cell%20re-selection%20in%20NTN.doc) Discussion on measurement rules for cell re-selection in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

* revised in [R2-2203725](file:///C:\Data\3GPP\RAN2\Inbox\R2-2203725.zip)

[R2-2203725](file:///C:\Data\3GPP\RAN2\Inbox\R2-2203725.zip) Discussion on measurement rules for cell re-selection in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

#### 8.10.3.2 RRC aspects

##### 8.10.3.2.1 Open issues

Contributions on open issues listed in [R2-2201896](file:///C:\Data\3GPP\archive\RAN2\RAN2%23116bis\Tdocs\R2-2201896.zip). For some aspects the discussion will happen in Pre117 email discussion [101]. For the others, company contributions can be submitted.

Including report of [Pre117-e][101][NTN] RRC open issues (Ericsson))

[R2-2203154](file:///C:\Data\3GPP\Extracts\R2-2203154%20Report%20NTN%20open%20issues%20RRC_Rapp.docx) [Pre117-e][NTN][101] RRC open issues Ericsson report NR\_NTN\_enh-Core Late

* Discussed in offline 101
* [AT117-e][101][NTN] RRC open issues (Ericsson)

Initial scope: Discuss RRC open issues based on the report in [R2-2203154](file:///C:\Data\3GPP\Extracts\R2-2203154%20Report%20NTN%20open%20issues%20RRC_Rapp.docx)

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Monday 2022-02-21 1700 UTC

Initial deadline (for rapporteur's summary in R2-2203534): Monday 2022-02-21 2000 UTC

Updated scope:

1. Continue the discussion on RRC open issues
2. Update the RRC CR

Updated intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)
    - Updated RRC CR

Updated deadline (for companies' feedback): Thursday 2022-02-24 1600 UTC

Updated deadline (for rapporteur's summary in R2-2203544): Thursday 2022-02-24 1800 UTC

Deadline (for RRC CR in R2-2203549): Thursday 2022-03-03 1000 UTC

Proposals marked "for agreement" in R2-2203544 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

[R2-2203534](file:///C:\Data\3GPP\Extracts\R2-2203534%20%5bAT117-e%5d%5b101%5d%5bNTN%5d%20RRC%20open%20issues%20(Ericsson)_Conclusions.docx) [offline-101] RRC open issues Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

List of proposals for agreement

Proposal 1 use CommonLocationInfo from 38.331 for NTN location reporting

* Agreed

Proposal 2 The ellipsoid-Point IE specified in TS 36.331, TS 37.355 (and TS 23.032) is reused for definitions of reference locations in NR NTN. FFS if ellipsoidPointWithAltitude-r10

* Agreed

Proposal 3 RAN2 to agree for value range for parameter distanceThresFromReferencex-r17 “Option 2 X bits to cover (0, z km) with linear granularity”.

* Agreed

Proposal 4 RAN2 to adopt for HysteresisLocation-r17 ”INTEGER (0..32768)” with a granularity of 10 meters, i.e. the actual value is the field value \* 10 meters.

* Agreed

Proposal 6a Configure a parameter OffsetThresholdTA in IE MAC-CellGroupConfig. FFS name of parameter

* Agreed

Proposal 8 RAN2 to adopt as values for sr-ProhibitTimerExt-r17: {ms192, ms256, ms320, ms384, ms448, ms512, ms576, ms640}. FFS to add 2xRTT, 2x542 ms.

* Agreed

Proposal 9 RRC processing delay is not impacted

* Agreed

Proposal 10 the HARQ-feedbackEnablingforSPSactive-r17 is per BWP.

* Agreed

Proposal 11 RAN2 should wait RAN1 response before progressing on discussing SIB1 NTN specific content.

* Agreed

Proposal 12 Current SIBxx serving cell content can be adopted as baseline and RAN2 should wait RAN1 response before progressing on discussing further SIBxx NTN specific content.

* Agreed as "Current SIBxx serving cell content can be adopted as baseline and RAN2 should wait RAN1 response before progressing on discussing further SIBxx NTN specific content"

Proposal 13 The following information to be broadcasted about neighbor cells:

- Neighbour cell Ephemeris information.

- Validity timer information for neighbour cell’s ephemeris information.

- reference location information of neighbour cells

FFS any other information

* Mediatek thinks this is related to p12. Ericsson thinks p12 is about SIBxx only, some information can go in other SIBs
* HW wonders about the validity timer: is this the same as for the serving cell or a different one? Nokia, Apple have the same question
* At least neighbour cell Ephemeris information shall be broadcast. FFS on other information about neighbour cells
* Continue in offline 102. Also discuss in which SI the information is sent

Proposal 15 ntnUlSyncValidityDuration applies only to connected mode or also to idle mode.

* Nokia thinks "or" should be replaced by "and"
* Agreed as "ntnUlSyncValidityDuration applies both to connected mode and idle mode"

Agreements:

1. use CommonLocationInfo from 38.331 for NTN location reporting
2. The ellipsoid-Point IE specified in TS 36.331, TS 37.355 (and TS 23.032) is reused for definitions of reference locations in NR NTN. FFS if ellipsoidPointWithAltitude-r10
3. RAN2 to agree for value range for parameter distanceThresFromReferencex-r17 “Option 2 X bits to cover (0, z km) with linear granularity”.
4. RAN2 to adopt for HysteresisLocation-r17 ”INTEGER (0..32768)” with a granularity of 10 meters, i.e. the actual value is the field value \* 10 meters.
5. Configure a parameter OffsetThresholdTA in IE MAC-CellGroupConfig. FFS name of parameter
6. RAN2 to adopt as values for sr-ProhibitTimerExt-r17: {ms192, ms256, ms320, ms384, ms448, ms512, ms576, ms640}. FFS to add 2xRTT, 2x542 ms.
7. RRC processing delay is not impacted
8. The HARQ-feedbackEnablingforSPSactive-r17 is per BWP.
9. RAN2 should wait RAN1 response before progressing on discussing SIB1 NTN specific content.
10. Current SIBxx serving cell content can be adopted as baseline and RAN2 should wait RAN1 response before progressing on discussing further SIBxx NTN specific content.
11. At least neighbour cell Ephemeris information shall be broadcast. FFS on other information about neighbour cells
12. ntnUlSyncValidityDuration applies both to connected mode and idle mode

List of proposals that require online discussions

Proposal 5 Agree the following for entering and leaving conditions:

Inequality D1-1 (Entering condition 1)

Ml1-Hys>Thresh1

Option 2

1> consider the leaving condition for this event to be satisfied when condition D2-1 or D2-2 is fulfilled;

Inequality D2-1 (Leaving condition 1)

Ml1+Hys<Thresh1

Inequality D2-2 (Leaving condition 2)

Ml2-Hys>Thresh2

* Oppo thinks one condition is missing. Ericsson clarifies this is showing just the change with respect to the existing spec
* Continue offline

Proposal 6b RAN2 to discuss range for a parameter OffsetThresholdTA

Option 1 Follow K\_offset defined by RAN1 is “0 ...1023 ms”

Option 2 Include values smaller than 1ms

Option 3 Largest value should not be larger than 16 ms

* Continue offline

Proposal 7 RAN2 to discuss further about options

Option 1 DiscardTimerExt2 should have value 2000ms and 2-3 spare values

Option 2 DiscardTimerExt2 should have values 2000 2500 3000 3500 4000 4500 spare2 spare1

Option 3 DiscardTimerExt2 should have values 2000, 2400, 2800, 3200, 3600,4000, 4400, spare2, spare1

* Continue offline (also on other proposals in [R2-2203481](file:///C:\Data\3GPP\Extracts\R2-2203481%20-%20Remaining%20issues%20for%20RLC%20and%20PDCP%20in%20NTNs.docx))

Proposal 14 RAN2 to agree to capture the following:

For SIBxx field description for ephemeris and common TA:

“This field is excluded when determining changes in system information, i.e. changes of XXX should neither result in system information change notifications nor in a modification of valueTag in SIB1.”

* Continue offline

R2-2203544 [offline-101] RRC open issues - second round Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202467](file:///C:\Data\3GPP\Extracts\R2-2202467%20Remaining%20Rel-17%20NTN%20open%20issues%20for%20CONNECTED%20mode.docx) Remaining Rel-17 NTN open issues for CONNECTED mode Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

* [AT117-e][108][NTN] CHO open issues (Nokia)

Initial scope: Discuss open issues for CHO based on company contributions in AI 8.10.3.2.1

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Tuesday 2022-02-22 0800 UTC

Initial deadline (for rapporteur's summary in R2-2203536): Tuesday 2022-02-22 1000 UTC

Updated scope: Continue the discussion on CHO open issues

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Thursday 2022-02-24 1600 UTC

Initial deadline (for rapporteur's summary in R2-2203545): Thursday 2022-02-24 1800 UTC

Proposals marked "for agreement" in R2-2203545 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

[R2-2203536](file:///C:\Data\3GPP\Extracts\R2-2203536_Report%20from%20%5b108%5d%5bNTN%5d%20CHO%20open%20issues%20(Nokia)_summary.docx) [offline-108] CHO open issues Nokia discussion Rel-17 NR\_NTN\_solutions-Core

Proposals for agreement:

Proposal 1: Joint time-based and location-based CHO execution triggering for the same candidate cell is not supported in Rel-17 NTN.

* Agreed

Proposal 2: If the CHO is not executed at T2 (timer associated with this candidate CHO cell) the UE continues to operate in the source cell and evaluates other CHO execution conditions (if configured).

* Agreed

Proposal 5: It is up to UE implementation how the UE evaluates the time- or location-based condition jointly with the RRM event Ax as long as the UE has RRM measurement results within the time window [T1, T2] or when the location condition is met.

* Oppo thinks it's not clear what is up to UE implementation. Nokia thinks the time when the UE evaluates is up to UE implementation.
* HW thinks we can reword as "how the UE evaluates the RRM condition is independent on whether the time or location-based condition is met". Oppo is not sure.
* Continue offline

Proposal 6: T2 timer is defined as an INTEGER (1..6000), where each step represents 100 ms. Its maximum value corresponds to 10 minutes (600 seconds).

* QC thinks this should be aligned to the cell stop time, is 10 min max sufficient?
* Agreed as a WA. FFS whether the maximum value needs to be aligned to the cell stop time
* Continue online (on the FFS part)

Proposal 7: The maximum number of MeasIDs to be used for CHO execution triggering in NTN is not increased from 2 to 3.

* Continue offline

Agreements:

1. Joint time-based and location-based CHO execution triggering for the same candidate cell is not supported in Rel-17 NTN.
2. If the CHO is not executed at T2 (timer associated with this candidate CHO cell) the UE continues to operate in the source cell and evaluates other CHO execution conditions (if configured).

Working assumption:

1. T2 timer is defined as an INTEGER (1..6000), where each step represents 100 ms. Its maximum value corresponds to 10 minutes (600 seconds). FFS whether the maximum value needs to be aligned to the cell stop time

Proposals for discussion:

Proposal 3: Discuss further what happens with the CHO configuration after T2 expiry:

a) UE releases the configuration

b) UE maintains the configuration for potential failure recovery.

Proposal 4: CHO Recovery is supported in Rel-17 NTN. FFS if the CHO configuration can be used only before T2 expiry.

R2-2203545 [offline-108] CHO open issues - second round Nokia discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202424](file:///C:\Data\3GPP\Extracts\R2-2202424%20Discussion%20on%20SIB%20X.doc) Discussion on SIB X Spreadtrum Communications discussion Rel-17

[R2-2202565](file:///C:\Data\3GPP\Extracts\R2-2202565%20CHO%20open%20issues.doc) Open issues in CHO Qualcomm Incorporated discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202587](file:///C:\Data\3GPP\Extracts\R2-2202587%20Consideration%20on%20open%20issues%20for%20CHO%20v1.0.doc) Consideration on open issues for CHO Lenovo, Motorola Mobility discussion Rel-17

[R2-2202775](file:///C:\Data\3GPP\Extracts\R2-2202775%20Open%20issues%20on%20CHO%20for%20R17%20NR%20NTN.docx) Open issues on CHO for R17 NR NTN vivo discussion

[R2-2202886](file:///C:\Data\3GPP\Extracts\R2-2202886%20Remaining%20issues%20on%20CHO.doc) Remaining issues on CHO Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2203005](file:///C:\Data\3GPP\Extracts\R2-2203005%20-%20%20Discussion%20on%20the%20RRC%20open%20issues%20in%20NTN.doc) Discussion on the RRC open issues in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2203051](file:///C:\Data\3GPP\Extracts\R2-2203051%20Remaining%20NTN%20CHO%20issues.DOC) Remaining NTN CHO issues LG Electronics France discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2203067](file:///C:\Data\3GPP\Extracts\R2-2203067%20Discussion%20on%20RRC%20open%20issues%20for%20NTN.docx) Discussion on RRC open issues for NTN Xiaomi Communications discussion

[R2-2203077](file:///C:\Data\3GPP\Extracts\R2-2203077%20Further%20Discussion%20on%20the%20Open%20Issues%20of%20CHO.docx) Further Discussion on the Open Issues of CHO CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2203153](file:///C:\Data\3GPP\Extracts\R2-2203153%20Connected%20mode%20aspects%20for%20NTN.docx) Remaining connected mode aspects for NTN Ericsson discussion

[R2-2203236](file:///C:\Data\3GPP\Extracts\R2-2203236_%20%20Remaining%20open%20issues%20of%20CHO.docx) Remaining open issues of CHO NEC Telecom MODUS Ltd. discussion

[R2-2203301](file:///C:\Data\3GPP\Extracts\R2-2203301%208.10.3.2.1%20RRC%20aspects.docx) Open issues on RRC aspects Samsung Research America discussion NR\_NTN\_solutions-Core

[R2-2203422](file:///C:\Data\3GPP\Extracts\R2-2203422%20(R17%20NTN%20WI%20AI%208.10.3.2.1)%20RRC%20Open%20issues.docx) Remaining RRC open issues in NTN InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

##### 8.10.3.2.2 Other

Contributions on any other issues.

[R2-2202455](file:///C:\Data\3GPP\Extracts\R2-2202455%20Discussion%20on%20NR%20NTN%20measurement%20gaps.docx) Discussion on NR NTN measurement gaps Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202564](file:///C:\Data\3GPP\Extracts\R2-2202564%20SMTC%20and%20MG.doc) SMTC and MG configuration Qualcomm Incorporated discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202588](file:///C:\Data\3GPP\Extracts\R2-2202588%20Contents%20of%20UE%20assistance%20for%20measurement%20window%20and%20gap%20configuration%20in%20NTN.docx) Contents of UE assistance for measurement window and gap configuration in NTN Lenovo, Motorola Mobility discussion Rel-17

[R2-2202614](file:///C:\Data\3GPP\Extracts\R2-2202614%20Further%20discussion%20on%20intra-NTN%20mobility.docx) Further discussion on intra-NTN mobility CMCC discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202776](file:///C:\Data\3GPP\Extracts\R2-2202776%20Discussion%20on%20the%20signaling%20design%20for%20NTN%20specific%20information.docx) Discussion on the signaling design for NTN specific information vivo discussion

[R2-2202840](file:///C:\Data\3GPP\Extracts\R2-2202840%20Network-Based%20SMTC%20Configuration%20in%20NTN.docx) Network-Based SMTC Configuration in NTN Google Inc. discussion

[R2-2202850](file:///C:\Data\3GPP\Extracts\R2-2202850%20Discussion%20on%20assistance%20information%20for%20SMTC.docx) Discussion on assistance information for SMTC ASUSTeK discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202853](file:///C:\Data\3GPP\Extracts\R2-2202853%20Measurement%20Gap%20Issues%20in%20NTN.docx) Measurement Gap Issues in NTN Google Inc. discussion

[R2-2203006](file:///C:\Data\3GPP\Extracts\R2-2203006%20NTN%20CP%20open%20issues.doc) Discussion on remaining open issues in connected mode OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2203066](file:///C:\Data\3GPP\Extracts\R2-2203066.docx) Further consideration of initial access Samsung Research America discussion

[R2-2203190](file:///C:\Data\3GPP\Extracts\R2-2203190%20%20Location%20report%20for%20TA%20and%20LCS.doc) Location report for TA report and LCS support in connected mode Xiaomi discussion Rel-17

[R2-2203191](file:///C:\Data\3GPP\Extracts\R2-2203191%20Remaining%20issues%20relating%20to%20SIBxx%20and%20the%20RRC%20delay%20for%20RRC%20Release.doc) Remaining issues relating to SIBxx and the RRC delay for RRC Release Xiaomi discussion Rel-17

### 8.10.4 UE capabilities

[R2-2203485](file:///C:\Data\3GPP\Extracts\R2-2203485%20-%20NR%20NTN%20UE%20capabilities.docx) NR NTN UE capabilities Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

#### 8.10.4.1 Open issues

Contributions on open issues listed in [R2-2201962](file:///C:\Data\3GPP\archive\RAN2\RAN2%23116bis\Tdocs\R2-2201962.zip). For some aspects the discussion will happen in Pre117 email discussion [104]. For the others, company contributions can be submitted.

Including report of [Pre117-e][104][NTN] UE caps open issues (Intel)

[R2-2202454](file:///C:\Data\3GPP\Extracts\R2-2202454%20Report%20of%20email%20discussion%20%5bPre117-e%5d%5b104%5d%5bNTN%5d%20UE%20caps%20open%20issues%20(Intel).docx) Report of email discussion [Pre117-e][104][NTN] UE caps open issues (Intel) Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core Late

* Discussed in offline 104
* [AT117-e][104][NTN] UE caps open issues (Intel)

Initial scope: Discuss UE caps open issues based on the report in [R2-2202454](file:///C:\Data\3GPP\Extracts\R2-2202454%20Report%20of%20email%20discussion%20%5bPre117-e%5d%5b104%5d%5bNTN%5d%20UE%20caps%20open%20issues%20(Intel).docx) and other company contributions in AI 8.10.4

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Monday 2022-02-21 1700 UTC

Initial deadline (for rapporteur's summary in R2-2203535): Monday 2022-02-21 2000 UTC

Updated scope:

1. Continue the discussion on UE caps open issues
2. Update the 38.306 and 38.331 CRs

Updated intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)
    - Updated 38.304 and 38.331 CRs

Updated deadline (for companies' feedback): Thursday 2022-02-24 1400 UTC

Updated deadline (for rapporteur's summary in R2-2203546): Thursday 2022-02-24 1600 UTC

Deadline (for 38.304 CR in R2-2203550 and R2-2203551): Thursday 2022-03-03 1000 UTC

Proposals marked "for agreement" in R2-2203546 not challenged until Friday 2022-02-25 1000 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue offline).

[R2-2203535](file:///C:\Data\3GPP\Extracts\R2-2203535%20Report%20of%20email%20discussion%20%5bAT117-e%5d%5b104%5d%5bNTN%5d%20UE%20caps%20open%20issues%20(Intel).docx) [offline-104] UE caps open issues Intel discussion Rel-17 NR\_NTN\_solutions-Core

List of proposals for agreement:

Proposal 1: The SMTC enhancements (event-triggered assistance information reporting, 2 SMTC in parallel) are essential for NGSO capable UEs.

* Agreed

Proposal 4: Incorporate event-triggered TA reporting feature into TA reporting UE capability defined in RAN1 feature list.

* Agreed

Proposal 5: Specify single UE capability to represent the support of both UL HARQ state B and the new LCP restriction.

* Agreed

Proposal 9: For NTN, network may need to restrict data throughput based on the actual RTT to avoid UE buffer overflow. FFS if a note in 38.306 is needed.

* Qualcomm wonders why it is important to say what network needs to do here. Network may just disable HARQ feedback which may not mean restricting the data throughput. We think it is sufficient just to have something like “In NTN, RTT values are assumed to be longer in the calculation of L2 buffer”.
* Continue online
* Samsung and Ericsson support QC view
* RAN2 understands that in NTN, RTT values are assumed to be longer in the calculation of L2 buffer. No spec change

Proposal 10: Postpone the discussion on NTN SMTC UE capabilities, and if the updated RAN1/4 feature lists during this meeting don’t include NTN SMTC related UE capabilities, RAN2 sends an LS to RAN1/4 for triggering this discussion.

* Agreed

Agreements via email - from offline 104:

1. The SMTC enhancements (event-triggered assistance information reporting, 2 SMTC in parallel) are essential for NGSO capable UEs.
2. Incorporate event-triggered TA reporting feature into TA reporting UE capability defined in RAN1 feature list.
3. Specify single UE capability to represent the support of both UL HARQ state B and the new LCP restriction.
4. Postpone the discussion on NTN SMTC UE capabilities, and if the updated RAN1/4 feature lists during this meeting don’t include NTN SMTC related UE capabilities, RAN2 sends an LS to RAN1/4 for triggering this discussion.

Agreements online:

1. RAN2 understands that in NTN, RTT values are assumed to be longer in the calculation of L2 buffer. No spec change

List of proposals that require online discussions:

Proposal 2: RAN2 to further discuss whether the SMTC enhancements (event-triggered assistance information reporting, 2 SMTC in parallel) are also essential for GSO capable UEs, considering except GEO satellites in general other GSO satellites are also moving.

Proposal 3: CHO enhancements (time based and Event A4 based CHO) are optional to support for NTN capable UEs.

Proposal 6: Since it should not be assumed that every NTN capable UE has been tested to support both GSO and NGSO, define IoT bits for the support of {GSO, NGSO, both} and this indication means all NTN essential features and optional features UE indicates have been tested in the corresponding scenario(s).

Proposal 7: RAN2 to discuss whether we plan to check case by case if a TN optional UE capability needs a separate IoT bit for NTN.

Proposal 8: If there is no plan to check case by case, RAN2 to further discuss how to support separate UE capability reporting for TN and NTN:

Option 1: IoT bits for NTN are reported together with TN features, e.g., have an embedded ASN.1 structure as below:

UE-NR-Capability ::= SEQUENCE {

<Unnecessary parts omitted>

iotBitsNTN UE-NR-Capability OPTIONAL,

<Unnecessary parts omitted>

}

Option 2: Existing capability signalling is used but only valid in the network type it is reported to (e.g. when UE reports to NTN network the capability refers to NTN and not TN).

Option 3: Add nr-ntn as a new RAT-type for UE capability reporting, in this case NTN source gNB can get UE TN capabilities to support handover preparation from NTN to TN.

* Huawei thinks we could go for a case by case check. Samsung agrees
* Oppo thinks option2 would not work (VC tends to agree) and option 1 would be the best and less time consuming
* QC assume that option 1 is only for "per-UE" capabilities and is then the simplest

Proposal 11: RAN2 to discuss whether IoT bit for the support of {both GSO and NGSO} means UE also supports mobility between GSO and NGSO.

R2-2203546 [offline-104] UE caps open issues - second round Intel discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202725](file:///C:\Data\3GPP\Extracts\R2-2202725%20Remaining%20Issues%20of%20Set2%20on%20NR%20NTN%20UE%20Capabilities.docx) Remaining Issues of Set2 on NR NTN UE Capabilities CMCC discussion Rel-17 NR\_NTN\_solutions-Core

#### 8.10.4.2 Other

Contributions on any other issues.

[R2-2202459](file:///C:\Data\3GPP\Extracts\R2-2202459%20Discussion%20on%20the%20difference%20between%20GSO%20and%20GEO.docx) Discussion on the difference between GSO and GEO Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2202887](file:///C:\Data\3GPP\Extracts\R2-2202887%20Discussion%20on%20capabilities%20for%20gaps%20and%20HARQ.doc) Discussion on capabilities for gaps and HARQ Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

## 8.12 Reduced Capability

(NR\_redcap-Core; leading WG: RAN1; REL-17; WID: [RP-211574](file:///C:\Data\3GPP\archive\RAN\RAN%2392\Tdocs\RP-211574.zip))

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.12.1 Organizational

LSs, rapporteur inputs and other organizational documents. Rapporteur inputs and other pre-assigned documents in this AI do not count towards the tdoc limitation.

#### 8.12.1.1 LS in

For LSes that need action: one tdoc by contact company to address the LS and potential reply is considered.

Rapporteur input may be provided.

[R2-2202134](file:///C:\Data\3GPP\Extracts\R2-2202134_R3-221396.docx) LS reply on the coordination between gNBs supporting RedCap UEs (R3-221396; contact: Ericsson) RAN3 LS in Rel-17 To:RAN2

* Noted

[R2-2202162](file:///C:\Data\3GPP\Extracts\R2-2202162_R4-2202674.docx) Reply LS on use of NCD-SSB for RedCap UE (R4-2202674; contact: ZTE) RAN4 LS in Rel-17 To:RAN1 Cc:RAN2

* Noted

[R2-2202163](file:///C:\Data\3GPP\Extracts\R2-2202163_R4-2202675.docx) LS on RRM relaxation for Redcap (R4-2202675; contact: vivo) RAN4 LS in Rel-17 To:RAN2

[R2-2202313](file:///C:\Data\3GPP\Extracts\R2-2202313_%5bDraft%5d%20Reply%20LS%20to%20RAN4%20on%20RRM%20relaxation.doc) [Draft] Reply LS to RAN4 on RRM relaxation vivo LS out Rel-17 NR\_redcap-Core To:RAN4

#### 8.12.1.2 CRs

CR Rapporteurs to provide running CRs, potentially updated.

[R2-2203421](file:///C:\Data\3GPP\Extracts\R2-2203421%20-%20Introduction%20of%20RedCap%20in%20TS%2038300.docx) Introduction of RedCap in TS 38.300 Nokia, Nokia Shanghai Bell CR Rel-17 38.300 16.8.0 0421 - B NR\_redcap-Core

[R2-2203473](file:///C:\Data\3GPP\Extracts\R2-2203473%20Stage%202%20Corrections%20for%20RedCap.docx) Stage 2 Corrections for RedCap Futurewei Technologies draftCR Rel-17 38.300 16.8.0 NR\_redcap-Core

* [AT117-e][110][RedCap] Stage 2 CR (Nokia)

Scope: Update the Stage 2 CR

Intended outcome: Agreed Stage 2 CR

Initial deadline (for companies' feedback): Tuesday 2022-03-01 1800 UTC

Initial deadline (for Stage 2 CR in R2-2203541): Wednesday 2022-03-02 1000 UTC

R2-2203541 Introduction of RedCap in TS 38.300 Nokia, Nokia Shanghai Bell CR Rel-17 38.300 16.8.0 0421 1 B NR\_redcap-Core

[R2-2202314](file:///C:\Data\3GPP\Extracts\38.321_CR1186_(Rel-17)_R2-2202314_Introduction%20of%20RedCap%20in%20TS%2038.321.docx) Introduction of RedCap in TS 38.321 vivo (Rapporteur) CR Rel-17 38.321 16.7.0 1186 - B NR\_redcap-Core

[R2-2203497](file:///C:\Data\3GPP\RAN2\Docs\R2-2203497.zip) Introduction of RedCap UEs Ericsson CR Rel-17 38.304 16.7.0 0234 - B NR\_redcap-Core Late

moved from 8.12.1

[R2-2202500](file:///C:\Data\3GPP\Extracts\R2-2202500%20-%20Running%2038.306%20CR%20on%20Capbilities-v03.docx) Running 38.306 CR for the RedCap capablities Intel Corporation draftCR Rel-17 38.306 16.7.0 B NR\_redcap

[R2-2202501](file:///C:\Data\3GPP\Extracts\R2-2202501%20-%20Running%2038.331%20CR%20on%20Capbilities-v01.docx) Running 38.331 CR for the RedCap capablities Intel Corporation draftCR Rel-17 38.331 16.7.0 B NR\_redcap

[R2-2203354](file:///C:\Data\3GPP\RAN2\Docs\R2-2203354.zip) Introduction of RedCap Ericsson CR Rel-17 38.331 16.7.0 2950 - B NR\_redcap-Core Late

moved from 8.12.5.1

[R2-2202498](file:///C:\Data\3GPP\Extracts\R2-2202498%20-%20Running%2038.306%20CR%20on%20Capbilities-v03-107.docx) Updated Running 38.306 CR for the RedCap capablities Intel Corporation draftCR Rel-17 38.306 16.7.0 B NR\_redcap Late

[R2-2202499](file:///C:\Data\3GPP\Extracts\R2-2202499%20-%20Running%2038.331%20CR%20on%20Capbilities-v01-107.docx) Updated Running 38.331 CR for the RedCap capablities Intel Corporation draftCR Rel-17 38.331 16.7.0 B NR\_redcap Late

### 8.12.2 Control Plane

#### 8.12.2.1 Idle/inactive mode aspects

##### 8.12.2.1.1 Open issues

Contributions on open issues listed in [R2-2201889](file:///C:\Data\3GPP\archive\RAN2\RAN2%23116bis\Tdocs\R2-2201889.zip). For some aspects the discussion will happen in Pre117 email discussion [105]. For the others, company contributions can be submitted.

[R2-2202266](file:///C:\Data\3GPP\Extracts\R2-2202266%20-%20Details%20on%20RRM%20relaxation.docx) Details on RRM relaxation Ericsson discussion Rel-17 NR\_redcap-Core

[R2-2202315](file:///C:\Data\3GPP\Extracts\R2-2202315_Discussion%20on%20RAN4%20LS%20and%20remaining%20issues%20on%20RRM%20relaxation.docx) Discussion on RAN4 LS and remaining issues on RRM relaxation vivo, Guangdong Genius discussion Rel-17 NR\_redcap-Core

[R2-2202996](file:///C:\Data\3GPP\Extracts\R2-2202996%20-%20Left%20open%20issue%20on%20SI%20change%20mechanism%20for%20eDRX.doc) Left open issue on SI change mechanism for eDRX OPPO discussion Rel-17 NR\_redcap-Core

Moved from 8.12.2.1.2

[R2-2202989](file:///C:\Data\3GPP\Extracts\R2-2202989.doc) UE behavior on combineRelaxedMeasCondition2 Samsung discussion Rel-17

[R2-2203350](file:///C:\Data\3GPP\Extracts\R2-2203350%20On%20RRM%20relaxation%20for%20REDCAP%20UE.docx) On RedCap RRM relaxations in IDLE/INACTIVE Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_redcap-Core

##### 8.12.2.1.2 Other

Contributions on any other issues.

[R2-2202347](file:///C:\Data\3GPP\Extracts\R2-2202347%20Cell%20(re)selection%20parameters%20of%20RedCap%20UE.doc) Cell (re)selection parameters of RedCap UE Fujitsu discussion Rel-17 NR\_redcap-Core

[R2-2202937](file:///C:\Data\3GPP\Extracts\R2-2202937.docx) Cell selection criterion for a RedCap UE with 1 Rx branch Samsung discussion Rel-17 NR\_redcap-Core

[R2-2203352](file:///C:\Data\3GPP\Extracts\R2-2203352%20eDRX%20and%20system%20information.docx) eDRX and system information Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_redcap-Core

#### 8.12.2.2 RRC aspects

##### 8.12.2.2.1 Open issues

Contributions on open issues listed in [R2-2201887](file:///C:\Data\3GPP\archive\RAN2\RAN2%23116bis\Tdocs\R2-2201887.zip). For some aspects the discussion will happen in Pre117 email discussion [105]. For the others, company contributions can be submitted.

Including report of [Pre117-e][105][RedCap] CP open issues (Ericsson)

[R2-2203502](file:///C:\Data\3GPP\Extracts\R2-2203502%20-%20Report%20for%20%5bPre117-e%5d%5b105%5d%5bRedCap%5d%20CP%20open%20issues.docx) Report for [Pre117-e][105][RedCap] CP open issues Ericsson discussion NR\_redcap-Core Late

* [AT117-e][105][RedCap] CP open issues (Ericsson)

Initial scope: Discuss CP open issues based on the report in [R2-2203502](file:///C:\Data\3GPP\RAN2\Docs\R2-2203502.zip) and the company contributions in AI 8.12.4

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Wednesday 2022-02-23 0600 UTC

Initial deadline (for rapporteur's summary in R2-2203538): Wednesday 2022-02-23 1000 UTC

Proposals marked "for agreement" in R2-2203538 not challenged until Wednesday 2022-02-23 1200 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue during the GTW session on Thursday).

R2-2203538 [offline-105] CP open issues Ericsson discussion Rel-17 NR\_redcap-Core

[R2-2202316](file:///C:\Data\3GPP\Extracts\R2-2202316_Discussion%20on%20remaining%20issues%20on%20RRC%20aspects%20for%20RedCap.doc) Discussion on remaining issues on RRC aspects for RedCap vivo, Guangdong Genius discussion Rel-17 NR\_redcap-Core

[R2-2202529](file:///C:\Data\3GPP\Extracts\R2-2202529_ncd-ssb_handover.docx) NCD-SSB and handover related aspects Apple discussion Rel-17 NR\_redcap-Core

[R2-2202530](file:///C:\Data\3GPP\Extracts\R2-2202530_lte-handover-redcap.docx) On the EUTRA handover to NR for RedCap UEs Apple discussion Rel-17 NR\_redcap-Core

[R2-2202654](file:///C:\Data\3GPP\Extracts\R2-2202654%20On%20inter-RAT%20handover%20for%20RedCap%20UEs.docx) On inter-RAT handover for RedCap UEs ZTE Corporation, Sanechips discussion Rel-17 NR\_redcap-Core

[R2-2202677](file:///C:\Data\3GPP\Extracts\R2-2202677_RRC%20open%20issues%20on%20Rel17%20RedCap%20WI.docx) RRC open issues on Rel17 RedCap WI Intel Corporation discussion Rel-17 NR\_redcap

[R2-2202997](file:///C:\Data\3GPP\Extracts\R2-2202997%20RedCap%20HO.doc) Discussion on remaining RRC open issues OPPO discussion Rel-17 NR\_redcap-Core

[R2-2203055](file:///C:\Data\3GPP\Extracts\R2-2203055%20Inter-RAT%20mobility%20from%20LTE%20to%20NR_v1.doc) Inter-RAT mobility from LTE to NR Huawei, HiSilicon discussion Rel-17 NR\_redcap-Core

* Revised in [R2-2203712](file:///C:\Data\3GPP\Extracts\R2-2203712%20Inter-RAT%20mobility%20from%20LTE%20to%20NR_v1.doc)

[R2-2203712](file:///C:\Data\3GPP\Extracts\R2-2203712%20Inter-RAT%20mobility%20from%20LTE%20to%20NR_v1.doc) Inter-RAT mobility from LTE to NR Huawei, HiSilicon, BT Plc, CATT, Sequans discussion Rel-17 NR\_redcap-Core

[R2-2203056](file:///C:\Data\3GPP\Extracts\R2-2203056%20Access%20restriction%20of%20RedCap%20UE.docx) Access restriction of RedCap UE Huawei, HiSilicon discussion Rel-17 NR\_redcap-Core

[R2-2203140](file:///C:\Data\3GPP\Extracts\R2-2203140%20Further%20discussion%20on%20CD-SSB%20for%20RedCap%20UE.docx) Further discussion on NCD-SSB for RedCap UE China Telecommunications discussion Rel-17

[R2-2203355](file:///C:\Data\3GPP\Extracts\R2-2203355%20-%20RedCap%20eNB%20to%20gNB%20handover.docx) Handover from E-UTRA from legacy eNB to legacy gNB Ericsson discussion NR\_redcap-Core

##### 8.12.2.2.2 Other

Contributions on any other issues.

[R2-2202289](file:///C:\Data\3GPP\Extracts\R2-2202289_SI%20Request%20and%20RRM%20relaxation%20for%20Redcap%20UEs.doc) SI Request for Redcap UEs Samsung Electronics Co., Ltd discussion Rel-17 NR\_redcap-Core

[R2-2202734](file:///C:\Data\3GPP\Extracts\R2-2202734%20Discussions%20on%20Redcap-specific%20initial%20BWPs.doc) Discussions on Redcap-specific initial BWPs Xiaomi Communications discussion

[R2-2203030](file:///C:\Data\3GPP\Extracts\R2-2203030%20System%20information%20acquisition%20by%20RedCap%20UEs%20during%20handover.docx) System information acquisition by RedCap UEs during handover Qualcomm Incorporated discussion Rel-17 NR\_redcap-Core Late

[R2-2203351](file:///C:\Data\3GPP\Extracts\R2-2203351%20On%20RRM%20relaxation%20in%20CONNECTED.docx) On RRM relaxations in CONNECTED Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_redcap-Core

### 8.12.3 User Plane

#### 8.12.3.1 MAC aspects

##### 8.12.3.1.1 Open issues

Contributions on open issues listed in [R2-2201891](file:///C:\Data\3GPP\archive\RAN2\RAN2%23116bis\Tdocs\R2-2201891.zip). For some aspects the discussion will happen in Pre117 email discussion [106]. For the others, company contributions can be submitted.

Including report of [Pre117-e][106][RedCap] MAC open issues (vivo)

[R2-2202317](file:///C:\Data\3GPP\RAN2\Docs\R2-2202317.zip) Summary of [Pre117-e][106][RedCap] MAC open issues (vivo) vivo discussion Rel-17 NR\_redcap-Core Late

* [AT117-e][106][RedCap] MAC open issues (vivo)

Initial scope: Discuss MAC open issues based on the report in [R2-2202317](file:///C:\Data\3GPP\RAN2\Docs\R2-2202317.zip)

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Wednesday 2022-02-23 0600 UTC

Initial deadline (for rapporteur's summary in R2-2203539): Wednesday 2022-02-23 1000 UTC

Proposals marked "for agreement" in R2-2203539 not challenged until Wednesday 2022-02-23 1200 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue during the GTW session on Thursday).

R2-2203539 [offline-106] MAC open issues vivo discussion Rel-17 NR\_redcap-Core

[R2-2203281](file:///C:\Data\3GPP\Extracts\R2-2203281%20Early%20identification%20capability.docx) Early identification capability Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_redcap-Core

##### 8.12.3.1.2 Other

Contributions on any other issues.

### 8.12.4 NCD-SSB aspects

Contributions on NCD-SSB aspects that might affect multiple specs

[R2-2202318](file:///C:\Data\3GPP\Extracts\R2-2202318_Discussion%20on%20RAN2%20impacts%20on%20NCD-SSB%20and%20separate%20initial%20BWP.DOCX) Discussion on RAN2 impacts on NCD-SSB and separate initial BWP vivo, Guangdong Genius discussion Rel-17 NR\_redcap-Core

[R2-2202653](file:///C:\Data\3GPP\Extracts\R2-2202653%20Remaining%20issues%20on%20separate%20initial%20BWP%20and%20NCD-SSB%20for%20RedCap%20UEs.docx) Remaining issues on separate initial BWP and NCD-SSB for RedCap UEs ZTE Corporation, Sanechips discussion Rel-17 NR\_redcap-Core

[R2-2202998](file:///C:\Data\3GPP\Extracts\R2-2202998%20-%20Left%20open%20issues%20on%20NCD-SSB.doc) Left open issues on NCD-SSB OPPO discussion Rel-17 NR\_redcap-Core

[R2-2203057](file:///C:\Data\3GPP\Extracts\R2-2203057%20Discussion%20on%20NCD-SSB%20aspects%20for%20RedCap%20UE.doc) Discussion on NCD-SSB aspects for RedCap UE Huawei, HiSilicon discussion Rel-17 NR\_redcap-Core

[R2-2203078](file:///C:\Data\3GPP\Extracts\R2-2203078-%20Discussion%20on%20the%20open%20issues%20of%20NCD-SSB.docx) Discussion on the open issues of NCD-SSB CATT discussion Rel-17 NR\_redcap-Core

[R2-2203505](file:///C:\Data\3GPP\Extracts\R2-2203505%20-%20Monitoring%20POs%20in%20connected%20mode%20when%20using%20NCD-SSB%20for%20RedCap%20UEs.docx) Monitoring POs in connected mode when using NCD-SSB Ericsson discussion Rel-17 NR\_redcap-Core Late

[R2-2203508](file:///C:\Data\3GPP\Extracts\R2-2203508.docx) C-plane related open issues on NCD-SSB DENSO CORPORATION discussion Rel-17 NR\_redcap-Core

### 8.12.5 UE capabilities

#### 8.12.5.1 Open issues

Contributions on open issues listed in [R2-2201893](file:///C:\Data\3GPP\archive\RAN2\RAN2%23116bis\Tdocs\R2-2201893.zip). For some aspects the discussion will happen in Pre117 email discussion [107]. For the others, company contributions can be submitted.

Including report of [Pre117-e][107][RedCap] UE caps open issues (Intel)

[R2-2202497](file:///C:\Data\3GPP\Extracts\R2-2202497_Report%20of%20Pre117-107-P2-v11.docx) Report of [Pre117-e][107][RedCap] UE caps open issues (Intel) Intel Corporation discussion Rel-17 NR\_redcap Late

* [AT117-e][107][RedCap] UE caps open issues (Intel)

Initial scope: Discuss UE caps open issues based on the report in [R2-2202497](file:///C:\Data\3GPP\Extracts\R2-2202497_Report%20of%20Pre117-107-P2-v11.docx)

Initial intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Initial deadline (for companies' feedback): Wednesday 2022-02-23 0600 UTC

Initial deadline (for rapporteur's summary in R2-2203540): Wednesday 2022-02-23 1000 UTC

Proposals marked "for agreement" in R2-2203540 not challenged until Wednesday 2022-02-23 1200 UTC will be declared as agreed via email by the session chair (for the rest the discussion will continue during the GTW session on Thursday).

R2-2203540 [offline-107] UE caps open issues Intel discussion Rel-17 NR\_redcap-Core

[R2-2203143](file:///C:\Data\3GPP\Extracts\R2-2203143%20Further%20discussion%20on%20RRM%20relaxation%20for%20RedCap%20UE.docx) Further discussion on RRM relaxation for RedCap UE China Telecommunications discussion Rel-17

Withdrawn

R2-2203141 Further discussion on RRM relaxation for RedCap UE China Telecommunications discussion Rel-17 Late

R2-2203142 Further discussion on RRM relaxation for RedCap UE China Telecommunications discussion Rel-17 Late

#### 8.12.5.2 Other

Contributions on any other issues.

## 8.19 Coverage Enhancements

(NR\_cov\_enh-Core; leading WG: RAN1; REL-17; WID: [RP-211566](file:///C:\Data\3GPP\archive\RAN\RAN%2392\Tdocs\RP-211566.zip))

Time budget: 0.5

Tdoc Limitation: 1 tdoc

Common aspects related to RACH indication (in MSG1) / RACH partitioning shall be submitted to 8.18

### 8.19.1 Organizational

Rapporteur input, incoming LS etc.

#### 8.19.1.1 LS in

For LSes that need action: one tdoc by contact company to address the LS and potential reply is considered.

Rapporteur input may be provided.

[R2-2202153](file:///C:\Data\3GPP\Extracts\R2-2202153_R4-2202368.docx) Reply LS on Maximum duration for DMRS bundling (R4-2202368; contact: Qualcomm) RAN4 LS in Rel-17 To:RAN1, RAN2

- QC thinks there is no impact on RAN2 for now

- vivo thinks we can wait for RAN1 parameter list

* Noted

#### 8.19.1.2 CRs

CR Rapporteurs to provide running CRs, potentially updated.

[R2-2202831](file:///C:\Data\3GPP\Extracts\R2-2202831.docx) TS 38.300 CR for Rel-17 NR coverage enhancements China Telecom CR Rel-17 38.300 16.8.0 0412 - B NR\_cov\_enh-Core

* Wait for RAN1 reply LS

[R2-2202652](file:///C:\Data\3GPP\Extracts\R2-2202652%20TS%2038.321%20CR%20for%20NR%20coverage%20enhancements.docx) TS 38.321 CR for Rel-17 Coverage enhancement ZTE Corporation, Sanechips CR Rel-17 38.321 16.7.0 1199 - B NR\_cov\_enh-Core

* LG thinks the CR touches the legacy text and would prefer not to do so.
* ZTE thinks it's different to do without touching legacy.
* Noted
* Revised in R2-2203553
* Continue in offline 111

R2-2203553 TS 38.321 CR for Rel-17 Coverage enhancement ZTE Corporation, Sanechips CR Rel-17 38.321 16.7.0 1199 1 B NR\_cov\_enh-Core

* [AT117-e][111][CovEnh] MAC CR (ZTE)

Scope: Update the MAC CR

Intended outcome: Agreed MAC CR

Initial deadline (for companies' feedback): Tuesday 2022-03-01 1800 UTC

Initial deadline (for Stage 2 CR in R2-2203553): Wednesday 2022-03-02 1000 UTC

[R2-2203127](file:///C:\Data\3GPP\Extracts\R2-2203127%20Introduction%20of%20NR%20coverage%20enhancements%20in%20RRC.docx) Introduction of NR coverage enhancements in RRC Huawei, HiSilicon CR Rel-17 38.331 16.7.0 2928 - B NR\_cov\_enh-Core

- HW indicates they updated the CR and suggests to continue offline

* Noted
* Revised in R2-2203554
* Continue in offline 112

R2-2203554 Introduction of NR coverage enhancements in RRC Huawei, HiSilicon CR Rel-17 38.331 16.7.0 2928 - B NR\_cov\_enh-Core

* [AT117-e][112][CovEnh] RRC CR (Huawei)

Scope: Update the RRC CR

Intended outcome: Agreed RRC CR

Initial deadline (for companies' feedback): Tuesday 2022-03-01 1800 UTC

Initial deadline (for Stage 2 CR in R2-2203554): Wednesday 2022-03-02 1000 UTC

### 8.19.2 General

All aspects, including possible corrections/TPs for the running CRs.

[R2-2203284](file:///C:\Data\3GPP\Extracts\R2-2203284%20BWP%20with%20only%20CE-RACH%20resources.docx) BWP with only CR-RACH resources Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_cov\_enh-Core

Proposal 1: In case RSRP threshold for CE is configured for BWP with only CE-RACH, the UE switches to initial BWP for RA procedure in case the RSRP is above the threshold.

* Vivo thinks this is discussed in RAN1 as well
* Can be discussed in offline 111, with the understanding this needs to be confirmed by RAN1.

[R2-2203128](file:///C:\Data\3GPP\Extracts\R2-2203128%20On%20measurement%20gap%20handling%20for%20Msg3%20repetitions.docx) On measurement gap handling for Msg3 repetitions Huawei, HiSilicon discussion Rel-17 NR\_cov\_enh-Core

Proposal 1: During a measurement gap, the MAC entity shall transmit on UL-SCH for all repetitions of the Msg3 transmission.

* Discussed in offline 111

[R2-2203007](file:///C:\Data\3GPP\Extracts\R2-2203007%20stage-2%20correction.doc) Minor connection to the stage-2 running CR OPPO discussion Rel-17 NR\_cov\_enh-Core

[R2-2202695](file:///C:\Data\3GPP\Extracts\R2-2202695%20Remaining%20issues%20for%20Msg3%20repetition.docx) Remaining issues for Msg3 repetition CATT discussion Rel-17 NR\_cov\_enh-Core

[R2-2202981](file:///C:\Data\3GPP\Extracts\R2-2202981%20Discussion%20on%20CFRA%20PUSCH%20with%20Repetition.docx) Discussion on CFRA PUSCH with Repetition vivo discussion Rel-17 NR\_cov\_enh

[R2-2203031](file:///C:\Data\3GPP\Extracts\R2-2203031%20Discussion%20on%20Msg3%20repetition%20for%20CFRA.docx) Discussion on Msg3 repetition for CFRA Qualcomm Incorporated discussion Rel-17 NR\_cov\_enh-Core Late

[R2-2203168](file:///C:\Data\3GPP\Extracts\R2-2203168%20Further%20issues%20on%20msg3%20repetitions.docx) Further issues on msg3 repetitions Ericsson discussion Rel-17 NR\_cov\_enh

* On PUSCH repetition for CFRA, RAN2 will wait for RAN1 decision. If RAN1 decides that this can be supported, RAN2 can introduce this in Rel-17

## Summary

Agreed CRs

TBD

Approved LSs out

TBD

[POST117-e] Email discussions

TBD