3GPP TSG-RAN WG2 Meeting #112 electronic R2-2010702

Online, November 2nd - 13th, 2020

**Agenda item: 10.2**

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

**Title: Report from Break-out session on R16 eMIMO, CLI, PRN, RACS and R17 NTN and REDCAP**

**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 [AT112e][000]

Organizational

1. For R16 items, summary discussion papers might be used during the e-meeting (as indicated in the meeting notes). For R17 items, no summary discussion papers will be used at this meeting.
2. All organization emails and notes will be shared over the following email discussion throughout the two meeting weeks:

* [AT112-e][100] Organizational Sergio's session (eMIMO, CLI, PRN, RACS, NTN, REDCAP)

Scope:

* + - Share plans for the meeting and list of ongoing email discussions for the sessions related to eMIMO, CLI and other NR R1 WIs Corrections, PRN, RACS, NTN and REDCAP
    - Share meetings notes and agreements for review and endorsement

Schedule/Plan

|  |  |  |  |
| --- | --- | --- | --- |
| **Time Zone UTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
|  | Early Items, if needed (Johan) |  |  |
| 13:00 – 14:30 | NR15 Stage-2, CP (and UP if needed) (Johan) | NR16 2-step, PowSav (Diana) | NR16 V2X (Kyeognin) |
| 14:30 – 16:00 | NR17 DCCA FEnh (Tero) | NR16 NR-U, Including UE caps for unlicensed (Diana) | LTE16 and earlier IoT (Brian, Emre) |
| **Tuesday** |  |  |  |
| 13:00 – 14:30 | NR16 General and UE caps (Johan) | NR17 NTN (Sergio)  AI 8.10.1 and  reports from [Post111-e][908][909][910[911] | NR16 and earlier Pos (Nathan) |
| 14:30 – 16:00 | NR16 IIOT (Johan) | NR16 L1 Centric (Sergio)  AI 6.13 (including status of [AT112e][101])  AI 6.14 | NR17 Pos SI (Nathan) |
| **Wednesd** |  |  |  |
| 13:00 – 14:30 | NR17 Multi-SIM (Tero) | NR17 Red Cap SI (Sergio)  reports from [Post111-e][912][913][914[915] | NR17 SL Relay SI (Nathan) |
| 14:30 – 16:00 | NR16 IAB (Johan) | NR16 Other CP Centric (Sergio)  AI 6.12 (including status of [AT112e][102]) | LTE17 IoT (Brian) |
| **Thursday** |  |  |  |
| 13:00 – 14:30 | NR16 DCCA (Tero) | NR17 Small Data Enh (Diana) | NR16 V2X, LTE 16 and earlier V2X SL (Kyeongin) |
| 14:30 – 16:00 | NR17 Multicast (Johan) | LTE16 and earlier IoT (Brian, Emre) | NR16 Pos (Nathan)  NR17 Pos SI (Nathan) (if time) |
| **Friday** |  |  |  |
| 04:30-06:00 | NR17 Multicast (Johan) | NR16 Mob, LTE16 Mob (Tero) | NR17 SON MDT (HuNan) |

|  |  |  |  |
| --- | --- | --- | --- |
| **Time Zone UTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
| 14:00 – 15:30 | NR17 UE Power Saving (Johan) | NR17 RAN Slicing SI (Tero) | NR17 SL enh (Kyeongin) |
| 15:30 – 17:00 | NR16 General, UE caps, R4 items (Johan) | NR17 IIOT URLLC (Diana) | NR16 SON/MDT (HuNan) |
| **Tuesday** |  |  |  |
| 14:00 – 15:30 | LTE16 and earlier General (Tero) | NR17 NTN (Sergio):  Check the status of [AT112e][103],[104],[105],[106]  Continue the discussion on CP and UP aspects | Pos CB (Nathan) |
| 15:30 – 17:00 | NR16 MobEnh (Tero)  LTE16 MobEnh (Tero)  NR16 DCCA (Tero) | NR17 Small data  [8.6.2, 8.6.3, 8.6.4 and CB for Small data] | NR17 SL enh (Kyeongin) |
| **Wednesd** |  |  |  |
| 14:00 – 15:30 | NR17 IAB (Johan) | CB NR16 (Sergio)  Continue the discussion on  eMIMO (offlines [101,[107],[108]),  CLI (offline [109]),  PRN (offline [102]),  SRVCC (offline [115]) and  other R1 CP issues ([R2-2008825](file:///C:\Data\3GPP\Extracts\R2-2008825%20TS%2038.331%20Directional%20collision%20handling.docx) and [R2-2008825](file:///C:\Data\3GPP\Extracts\R2-2008825%20TS%2038.331%20Directional%20collision%20handling.docx)) | LTE16 IoT (Emre, Brian) |
| 15:30 – 17:00 | CB (Johan) | NR17 RedCap SI CB (Sergio, ~45 min)  Discuss proposals from offline [112],[113],[114] not agreeable via email  NR17 IIOT URLLC - AI 8.5.3 (Diana, ~45 min) | NR17 SL Relay SI + CB (Nathan) |
| **Thursday** |  |  |  |
| 05:00 – 06:30 | CB (Johan) | CB (Kyeongin) | CB (Brian/Emre) |
| **Friday** |  |  |  |
| 05:00 – 06:30 | CB (Nathan)  CB (HuNan) | CB (Diana)  CB (Sergio)  Remaining NTN and RedCap issues | CB (Tero) |

List and status of offline email discussions

NOTE: No offline email discussions will be kicked off before Monday November 2nd, 07:00 UTC

* [AT112-e][101][eMIMO] MAC corrections (Samsung)

Scope: Discuss the CRs in AI 6.13.1

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

* + - List of CRs that can be agreed as is
    - List of CRs that can be agreed with some changes / merges with other CRs (with an indication of the needed changes)
    - List of CRs that require online discussion
    - List of CRs that should not be pursued

Initial deadline (for companies' feedback): Tuesday 2020-11-03 07:00 UTC

Initial deadline (for rapporteur's summary in R2-2010760): Tuesday 2020-11-03 09:00 UTC

Updated scope: Discuss reply LS to RAN1, revise 38.321CRs 0947 and 0994 and way forward on the BFR trigger point / BFR MAC CE generation issue

Updated intended outcome: Draft LS in R2-2010771, agreeable CRs in R2-2010772 and R2-2010773 and way forward in R2-2010774

Deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Deadline (for draft LS, CRs and way forward): Wednesday 2020-11-11 01:00 UTC

Status: Ongoing

* [AT112-e][102][PRN] Stage 3 Corrections (Nokia)

Scope: Discuss the PRN Stage 3 CRs in 6.12

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

* + - List of CRs that can be agreed as is
    - List of CRs that can be agreed with some changes / merges with other CRs (with an indication of the needed changes)
    - List of CRs that require online discussion
    - List of CRs that should not be pursued

Initial deadline (for companies' feedback): Wednesday 2020-11-04 07:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010761](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010761.zip)): Wednesday 2020-11-04 09:00 UTC

Updated scope: Draft 38.331CR in R2-2010789 and discuss the text for a general description to reflect the Stage 2 change suggested in [R2-2010016](file:///C:\Data\3GPP\Extracts\R2-2010016%20-%20Aligning%20use%20of%20PNI-NPN%20in%20RAN2%20specs%20to%20SA2%20specs.docx)

Updated intended outcome: Agreeable CRs in R2-2010789

Updated deadline (for companies' feedback): Tuesday 2020-11-10 11:00 UTC

Updated deadline (for CR): Tuesday 2020-11-10 17:00 UTC

Status: Ongoing

* [AT112-e][103][NTN] RACH and HARQ feedback aspects (IDC)

Scope: Discuss (a revision of) p2, p3, p5, p10, p12, p9, p13 from [R2-2010455](file:///C:\Data\3GPP\Extracts\R2-2010455%20(R17%20NTN%20WI%20AI%208.10.2.1%20Summary%20of%20%5bPost111-e%5d%5b908%5d%5bNTN%5d).docx)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Monday 2020-11-09 17:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010764](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010764.zip)): Monday 2020-11-09 23:00 UTC

Proposals marked "for agreement" in [R2-2010764](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010764.zip) not challenged until Tuesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair. For the rest the discussion will continue online.

Status: Closed

* [AT112-e][104][NTN] Misc CP issues (Ericsson)

Scope: Discuss (a revision of) p7, p8, p9, p11 from [R2-2009820](file:///C:\Data\3GPP\Extracts\R2-2009820_RAN2Email910_EarthFixedMovingBeams_Report.docx) and discuss an LS to RAN1 asking for feasibility of having two satellites with same PCI during service link switch

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

and draft LS to RAN1

Initial deadline (for companies' feedback): Monday 2020-11-09 17:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010765](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010765.zip) and draft LS in R2-2010766): Monday 2020-11-09 23:00 UTC

Proposals marked "for agreement" in [R2-2010765](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010765.zip) not challenged until Tuesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair. For the rest the discussion will continue online.

Status: Closed

* [AT112-e][105][NTN] RRC aspects (ZTE)

Scope: Discuss remaining proposals from [R2-2009803](file:///C:\Data\3GPP\Extracts\R2-2009803_Report%20of%20%5bPost111-e%5d%20%5b911%5d%20%5bNTN%5d%20Connected%20mode%20aspects%20(ZTE).doc)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Monday 2020-11-09 17:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010767](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010767.zip)): Tuesday 2020-11-10 01:00 UTC

Updated Scope: Discuss remaining proposals from [R2-2010767](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010767.zip) (p2.1, p3.1, p3.2)

Updated Intended outcome: summary of the offline discussion in R2-2010794 with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Thursday 2020-11-12 10:00 UTC

Initial deadline (for rapporteur's summary): Thursday 2020-11-12 16:00 UTC

Proposals marked "for agreement" in R2-2010794 not challenged until Friday 2020-11-13 04:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue online.

Status: Ongoing

* [AT112-e][106][NTN] SMTC and gaps (CATT)

Scope: Discuss p6 and p7 in [R2-2008834](file:///C:\Data\3GPP\Extracts\R2-2008834%20Open%20Issues%20for%20Measurements%20in%20NTN.docx) and proposals in [R2-2009456](file:///C:\Data\3GPP\Extracts\R2-2009456.doc)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Monday 2020-11-09 17:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010768](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010768.zip)): Tuesday 2020-11-10 01:00 UTC

Updated Scope: Discuss remaining proposals from [R2-2010768](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010768.zip)

Updated Intended outcome: summary of the offline discussion in R2-2010795 with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Thursday 2020-11-12 17:00 UTC

Initial deadline (for rapporteur's summary): Friday 2020-11-13 02:00 UTC

Proposals marked "for agreement" in R2-2010795 not challenged until Friday 2020-11-13 04:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue online.

Status: Ongoing

* [AT112-e][107][eMIMO] Stage 2 CRs (Nokia)

Scope: discuss revisions for 38.300 CRs 0300 and 0310

Intended outcome: Agreeable CRs in R2-2010769 and R2-2010770

Initial deadline (for companies' feedback): Tuesday 2020-11-10 11:00 UTC

Initial deadline (for CRs): Tuesday 2020-11-10 17:00 UTC

Status: Ongoing

* [AT112-e][108][eMIMO] RRC corrections (Huawei)

Scope: Discuss:

* + revised 38.331CRs 2038, 2181 and 2182
  + whether CR2159 can be merged with any other one or can be agreed as is
  + proposals in [R2-2010625](file:///C:\Data\3GPP\Extracts\R2-2010625%20eMIMO%20capability.docx)
  + revised 38.306CR 0469
  + new 38.331 and 38.306 CRs to introduce a capability bit for multi-CC simultaneous TCI activation with multi-TRP

Intended outcome: agreeable CRs in R2-2010775, R2-2010776, R2-2010777, R2-2010778, R2-2010779, R2-2010782, R2-2010783

Initial deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Initial deadline (for CRs): Tuesday 2020-11-10 23:00 UTC

Status: Ongoing

* [AT112-e][109][CLI] Reply LS to RAN3 (Qualcomm)

Scope: Draft a revised reply LS to RAN3

Intended outcome: draft reply LS in R2-2010780

Initial deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Initial deadline (for draft LS): Wednesday 2020-11-11 01:00 UTC

Status: Ongoing

* [AT112-e][110][NTN] Reply LS to CT1 (Oppo)

Scope: Discuss the content of a reply LS to CT1 saying that timers will be extended but exact values will be decided later

Intended outcome: Reply LS to CT1 in R2-2010763 on NAS procedure guard timers for GEO satellite

Initial deadline (for companies' feedback): Thursday 2020-11-12 11:00 UTC

Initial deadline (for draft LS): Thursday 2020-11-12 17:00 UTC

Status: Ongoing

* [AT112-e][111][REDCAP] TP drafting for the TR (Ericsson)

Scope: draft a TP based on meeting agreements

Intended outcome: Endorsed TP

Deadline (for companies' feedback): Friday 2020-11-13 02:00 UTC

Deadline (for rapporteur's summary in R2-2010784): Friday 2020-11-13 10:00 UTC

Status: Ongoing

* [AT112-e][112][REDCAP] Capabilities (Intel)

Scope: Continue the discussion on remaining proposals from [R2-2009004](file:///C:\Data\3GPP\Extracts\R2-2009004%20Report%20of%20913-RedCap-Capabilities.docx)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Initial deadline (for rapporteur's summary in R2-2010785): Wednesday 2020-11-10 03:00 UTC

Proposals marked "for agreement" in R2-2010785 not challenged until Wednesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair and can be considered for inclusion in the TP for the TR. For the rest the discussion might continue online in the CB online session on Wednesday.

Status: Ongoing

* [AT112-e][113][REDCAP] Identification and access restrictions (Huawei)

Scope: Continue the discussion on remaining proposals from [R2-2009936](file:///C:\Data\3GPP\Extracts\R2-2009936%20Summary%20of%20email%20discussion%20%5b914%5d.docx)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Initial deadline (for rapporteur's summary in R2-2010786): Wednesday 2020-11-10 03:00 UTC

Proposals marked "for agreement" in R2-2010786 not challenged until Wednesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair and can be considered for inclusion in the TP for the TR. For the rest the discussion might continue online in the CB online session on Wednesday.

Status: Ongoing

* [AT112-e][114][REDCAP] Power saving (CATT)

Scope: Continue the proposals from [R2-2009364](file:///C:\Data\3GPP\Extracts\R2-2009364%20Summary%20of%20email%20discussion%20915%20-%20Summary%20-%20final.docx), apart those on eDRX cycle in Inactive longer than 10.24s and on RRM relaxation for serving cell

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Tuesday 2020-11-11 17:00 UTC

Initial deadline (for rapporteur's summary in R2-2010787): Tuesday 2020-11-10 23:00 UTC

Proposals marked "for agreement" in R2-2010787 not challenged until Wednesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair and can be considered for inclusion in the TP for the TR. For the rest the discussion might continue online in the CB online session on Wednesday.

Status: Ongoing

* [AT112-e][115][SRVCC] Corrections (Huawei)

Scope: discuss revisions for 38.300CR0317 and 38.331CR2215

Intended outcome: Agreeable CRs in R2-2010790 and R2-2010791

Initial deadline (for companies' feedback): Tuesday 2020-11-10 11:00 UTC

Initial deadline (for CRs): Tuesday 2020-11-10 17:00 UTC

Status: Ongoing

* [AT112-e][116][NTN] Reply LS to RAN3 (Qualcomm)

Scope: Start discussing the possible content of a reply LS to RAN3

Intended outcome: Summary of the offline discussion in R2-2010793

Initial deadline (for companies' feedback): Thursday 2020-11-12 22:00 UTC

Initial deadline (for rapporteur's summary): Friday 2020-11-12 04:00 UTC

Status: Ongoing

## 6.12 NR Other Control Plane WIs

(SRVCC\_NR\_to\_UMTS-Core; leading WG: RAN2; REL-16; started: Dec 18; Completed; Mar 20; WID: [RP-190713](file:///C:\Data\3GPP\archive\RAN\RAN%2383\Tdocs\RP-190713.zip))

(RACS-RAN-Core, leading WG: RAN2; REL-16; started: Mar 19; completed: Jun 20; WID: [RP-191088](file:///C:\Data\3GPP\archive\RAN\RAN%2384\Tdocs\RP-191088.zip))

(NG\_RAN\_PRN-Core; leading WG: RAN3; REL-16; started: Mar 19; completed: June 20; WID: [RP-200122](file:///C:\Data\3GPP\archive\RAN\RAN%2387\Tdocs\RP-200122.zip))

Documents in this agenda item will be handled in a break out session

Limit: 3 email threads

PRN - Incoming LSs

[R2-2008753](file:///C:\Data\3GPP\Extracts\R2-2008753_S1-203272.docx) Reply LS on human-readable network name (HRNN) (CP-201361/S1-203197) (S1-203272; contact: vivo) SA1 LS in Rel-16 To:SA2, CT, CT1, RAN2 Cc:CT4

* Noted

[R2-2008762](file:///C:\Data\3GPP\Extracts\R2-2008762_S2-2007809.doc) Reply LS on Clarification of CAG only UE accessing EPS network (S2-2007809; contact: Oppo) SA2 LS in Rel-16 Vertical\_LAN To:CT1 Cc:RAN2

* Noted

PRN - PNI-NPN related parameter selection

[R2-2009065](file:///C:\Data\3GPP\Extracts\R2-2009065%20ParametersInSharedCells.docx) Considerations on parameter selection for shared cells Nokia, Nokia Shanghai Bell discussion Rel-16 NG\_RAN\_PRN-Core

* Discussed in offline 102
* Noted

[R2-2009066](file:///C:\Data\3GPP\Extracts\R2-2009066%20CR38331-ParametersInSharedCells.docx) Corrections for PNI-NPN related parameter selection Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.2.0 2028 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 102
* Not pursued

[R2-2010015](file:///C:\Data\3GPP\Extracts\R2-2010015%20-%20Selecting%20index%20for%20PLMN%20SNPN%20and%20UAC%20parameters.docx) Selecting index for PLMN, SNPN and UAC parameters Ericsson discussion

* Discussed in offline 102
* Noted

R2-2010789 Selecting index for PLMN, SNPN and UAC parameters Ericsson Rel-16 38.331 16.2.0 XXXX - F NG\_RAN\_PRN-Core

[R2-2010355](file:///C:\Data\3GPP\Extracts\R2-2010355%20Discussion%20on%20selected%20CAG.docx) Discussion on selected CAG Huawei, HiSilicon discussion Rel-16 NG\_RAN\_PRN-Core

* Discussed in offline 102
* Noted

[R2-2010356](file:///C:\Data\3GPP\Extracts\R2-2010356%20Discussion%20on%20the%20selection%20between%20PLMN%20and%20PNI-NPNs.docx) Discussion on the selection between PLMN and PNI-NPNs Huawei, HiSilicon discussion Rel-16 NG\_RAN\_PRN-Core

* Discussed in offline 102
* Noted

PRN - Forbidden Tracking Areas - suitable cells

[R2-2009625](file:///C:\Data\3GPP\Extracts\R2-2009625.docx) Further Clarification on the Forbidden Tracking Areas ZTE Corporation, Sanechips discussion Rel-16 NG\_RAN\_PRN-Core

* Discussed in offline 102
* Noted

[R2-2009628](file:///C:\Data\3GPP\Extracts\R2-2009628.docx) CR on Forbidden Tracking Areas ZTE Corporation, Sanechips CR Rel-16 38.304 16.2.0 0190 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 102
* Not pursued

[R2-2010496](file:///C:\Data\3GPP\Extracts\R2-2010496%20Clarification%20on%20the%20selection%20of%20suitable%20cell.docx) Clarification on the selection of suitable cell Huawei, HiSilicon CR Rel-16 38.304 16.2.0 0192 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 102
* Changes related to proposal 2, 3 can be merged in a rapporteur CR
* Check online if changes related to proposal 1 can be accepted
* Huawei thinks that p1 is to align the description for PLMN and SNPN, even if SNPN does not support roaming. ZTE supports the change. Nokia also thinks this is ok. QC is also fine. Apple also support the change. Ericsson has no strong view but has no problem with the CR.
* Samsung doubts this is technically correct, given that SNPN do not support Roaming, but can finally accept the CR.
* Proposal 1 is also agreed and can be included in the rapporteur CR

R2-2010788 Miscellanueos corrections Qualcomm (Rapporteur) CR Rel-16 38.304 16.2.0 XXXX - F NG\_RAN\_PRN-Core

PRN - NPN-only cell

[R2-2009626](file:///C:\Data\3GPP\Extracts\R2-2009626.docx) Further Clarification on the NPN-only cell ZTE Corporation, Sanechips discussion Rel-16 NG\_RAN\_PRN-Core

* Discussed in offline 102
* Noted

[R2-2009629](file:///C:\Data\3GPP\Extracts\R2-2009629.docx) CR on NPN-only Cell ZTE Corporation, Sanechips CR Rel-16 38.331 16.2.0 2098 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 102
* Not pursued

PRN -Other 38.331 corrections

[R2-2010033](file:///C:\Data\3GPP\Extracts\38331_CR2167_(Rel-16)_R2-2010033_NPN_corrections.docx) Clarification on the total number of CAG identifiers Lenovo, Motorola Mobility CR Rel-16 38.331 16.2.0 2167 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 102
* Merge the changes related to proposal 2 in a rapporteur 38.331CR
* Lenovo thinks that it's a bit unfortunate that companies do not support p1 and wonder if they misunderstood the proposal
* Not to pursue the changes related to proposal 1
* [AT112-e][102][PRN] Stage 3 Corrections (Nokia)

Scope: Discuss the PRN Stage 3 CRs in 6.12

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

* + - List of CRs that can be agreed as is
    - List of CRs that can be agreed with some changes / merges with other CRs (with an indication of the needed changes)
    - List of CRs that require online discussion
    - List of CRs that should not be pursued

Initial deadline (for companies' feedback): Wednesday 2020-11-04 07:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010761](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010761.zip)): Wednesday 2020-11-04 09:00 UTC

Updated scope: Draft 38.331CR in R2-2010789 and discuss the text for a general description to reflect the Stage 2 change suggested in [R2-2010016](file:///C:\Data\3GPP\Extracts\R2-2010016%20-%20Aligning%20use%20of%20PNI-NPN%20in%20RAN2%20specs%20to%20SA2%20specs.docx)

Updated intended outcome: Agreeable CRs in R2-2010789 and R2-2010972

Updated deadline (for companies' feedback): Tuesday 2020-11-10 11:00 UTC

Updated deadline (for CR): Tuesday 2020-11-10 17:00 UTC

[R2-2010761](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010761.zip) Summary of offline 102 - PRN Stage 3 Corrections Nokia discussion Rel-16 NG\_RAN\_PRN-Core

CRs that can be agreed with some changes/merges with other CRs

R2-2010033 Clarification on the total number of CAG identifiers

• Merge the changes related to proposal 2 in a rapporteur 38.331CR

• Not to pursue the changes related to proposal 1

CRs that require online discussion

The following CRs are proposed to be discussed together:

• R2-2010015 Selecting index for PLMN, SNPN and UAC parameters Ericsson discussion

• R2-2010355 Discussion on selected CAG Huawei, HiSilicon discussion Rel-16 NG\_RAN\_PRN-Core

• R2-2010356 Discussion on the selection between PLMN and PNI-NPNs Huawei, HiSilicon discussion Rel-16 NG\_RAN\_PRN-Core

* HW thinks there are 2 options: 1. prioritize CAG over PLMN or 2. leave it to UE implementation
* Intel thinks they misunderstood HW proposal: Intel view is to have a well understood UE behaviour. Ericsson/Nokia confirm the intention is to have a well-defined UE behaviour.
* HW thinks that even if we go for option1 we need to modify the wording.
* Draft a CR in R2-2010789 based on the Ericsson TP, including comment from HW on the detailed wording

R2-2010496 Clarification on the selection of suitable cell

• Changes related to proposal 2, 3 can be merged in a rapporteur CR (if there is any)

• Check online if changes related to proposal 1 can be accepted

CRs that should not be pursued

R2-2009066 Corrections for PNI-NPN related parameter selection

R2-2009628 CR on Forbidden Tracking Areas

R2-2009629 CR on NPN-only Cell

Agreements via email - offline 102:

1. R2-2010033 Clarification on the total number of CAG identifiers:

* Merge the changes related to proposal 2 in a rapporteur 38.331CR.
* Not to pursue the changes related to proposal 1

1. R2-2010496 Clarification on the selection of suitable cell:

• Changes related to proposal 2, 3 can be merged in a rapporteur CR (if there is any)

• Check online if changes related to proposal 1 can be accepted

1. The following CRs should not be pursued

* R2-2009066 Corrections for PNI-NPN related parameter selection
* R2-2009628 CR on Forbidden Tracking Areas
* R2-2009629 CR on NPN-only Cell

PRN - Stage2 corrections

[R2-2009627](file:///C:\Data\3GPP\Extracts\R2-2009627.docx) CR on non-CAG-capable UE ZTE Corporation, Sanechips CR Rel-16 38.300 16.3.0 0309 - F NG\_RAN\_PRN-Core

* Nokia disagrees with this proposal; 3GPP is not controlling the PLMN IDs and we should not refer to any IDs in our specs.
* Samsung agrees with Nokia on the second change, but also the first change in not needed. Nokia agrees. Also Huawei thinks the current text is ok
* Not pursued

[R2-2010016](file:///C:\Data\3GPP\Extracts\R2-2010016%20-%20Aligning%20use%20of%20PNI-NPN%20in%20RAN2%20specs%20to%20SA2%20specs.docx) Aligning use of PNI-NPN in RAN2 specs to SA2 specs Ericsson discussion

Proposal 1 Align RAN2 specifications to SA2 specifications by clarifying that CAG is optionally present for PNI-NPNs.

Proposal 2 Align RAN2 specifications to SA2 specifications by removing the use of PNI-NPN identity.

* HW understands the motivation but think that from RAN2 perspective the current description is fine: there is no need for any Stage 2 change
* Nokia has no strong view but tends to agree with HW. Maybe a note in the beginning of the spec would be sufficient. Ericsson is fine to have a different clarification provided we are consistent with what is specified in SA2.
* Qualcomm don't think we need a Stage 3 change either. ZTE also don't support a change to stage 3.
* Samsung is fine with Stage 2 change but not Stage 3
* Stage 2 change is agreeable and can be put in a rapporteur CR as a general description
* Stage 3 change is not pursued.

R2-2010792 Clarifying the use of PNI-NPN term in RAN specifications Nokia, Ericsson CR Rel-16 38.300 16.3.0 XXXX - F NG\_RAN\_PRN-Core

[R2-2010630](file:///C:\Data\3GPP\Extracts\R2-2010630%2038.300%20Correction%20on%20the%20SNPN-only%20cell.docx) 38.300 Correction on the SNPN-only cell vivo CR Rel-16 38.300 16.3.0 0320 - F NG\_RAN\_PRN-Core

* Nokia/ZTE thinks it's ok for now: the change is not wrong but not needed. QC thinks that for Rel-16 this is not correct and not needed. Samsung thinks this is not needed
* Not pursued

[R2-2010631](file:///C:\Data\3GPP\Extracts\R2-2010631%2038.300%20Correction%20on%20CAG%20information.docx) 38.300 Correction on CAG information vivo CR Rel-16 38.300 16.3.0 0321 - F NG\_RAN\_PRN-Core

* Ericsson thinks there is a "may" in the sentence so the CR is not needed. Nokia agrees. Huawei/Samsung agree.
* Not pursued

RACS/SRVCC

[R2-2010259](file:///C:\Data\3GPP\Extracts\R2-2010259%20Dynamic%20UMTS%20Radio%20Capability%20impact%20on%20SRVCC%20and%20RACS.docx) Dynamic UMTS Radio Capability impact on SRVCC and RACS Huawei, HiSilicon, Vodafone, China Unicom CR Rel-16 38.300 16.3.0 0317 - F SRVCC\_NR\_to\_UMTS-Core, RACS-RAN-Core

* Ericsson does not understand the reference to UE capability in the description and think we cannot put network requirements
* Lenovo agrees with the intention but some changes are needed, i.e. 7.5.
* Continue offline
* revised in R2-2010790

R2-2010790 Dynamic UMTS Radio Capability impact on SRVCC and RACS Huawei, HiSilicon, Vodafone, China Unicom CR Rel-16 38.300 16.3.0 0317 1 F SRVCC\_NR\_to\_UMTS-Core, RACS-RAN-Core

* [AT112-e][115][SRVCC] Corrections (Huawei)

Scope: discuss revisions for 38.300CR0317 and 38.331CR2215

Intended outcome: Agreeable CRs in R2-2010790 and R2-2010791

Initial deadline (for companies' feedback): Tuesday 2020-11-10 11:00 UTC

Initial deadline (for CRs): Tuesday 2020-11-10 17:00 UTC

[R2-2010407](file:///C:\Data\3GPP\Extracts\R2-2010407_Clarification%20on%20SRVCC%20handover_R16.docx) Clarification on SRVCC handover Google Inc. CR Rel-16 38.331 16.2.0 2215 - F SRVCC\_NR\_to\_UMTS-Core

* Lenovo agrees with the intention but wonders about the security parameters
* Continue offline
* revised in R2-2010791

R2-2010791 Clarification on SRVCC handover Google Inc. CR Rel-16 38.331 16.2.0 2215 1 F SRVCC\_NR\_to\_UMTS-Core

Other

[R2-2010632](file:///C:\Data\3GPP\Extracts\R2-2010632%2038.331%20Clarification%20on%20the%20release%20of%20RRC%20connection.docx) 38.331 Clarification on the release of RRC connection vivo CR Rel-16 38.331 16.2.0 2264 - F NG\_RAN\_PRN-Core

* VC: the spec number in the coversheet and the clauses affected are not correct. Also the CR does not seem a PRN related CR
* Lenovo agrees with VC but thinks that this a useful clarification also for Rel-15 and should be resubmitted in the main session.
* Not pursued

## 6.13 NR eMIMO

(NR\_eMIMO-Core, leading WG: RAN1; REL-16; started: Jun 18; target; Aug 20; WID: [RP-200474](file:///C:\Data\3GPP\archive\RAN\RAN%2387\Tdocs\RP-200474.zip); R2 part completed)

Documents in this agenda item will be handled in a break out session

Limit: 2 email threads

Stage2

[R2-2009905](file:///C:\Data\3GPP\Extracts\R2-2009905_CR0310_38300_R16_BFR%20on%20SCell.docx) BFR on SCell ZTE Corporation, Sanechips, Nokia (Rapporteur) CR Rel-16 38.300 16.3.0 0310 - F NR\_eMIMO-Core

* Huawei thinks that a suitable beam can also be indicated for PCell. Nokia agrees
* revised in R2-2010769

R2-2010769 BFR on SCell ZTE Corporation, Sanechips, Nokia (Rapporteur) CR Rel-16 38.300 16.3.0 0310 1 F NR\_eMIMO-Core

[R2-2009170](file:///C:\Data\3GPP\Extracts\R2-2009170%20Stage-2%20Description%20of%20multi-TRP.docx) Stage-2 description of multi-TRP Nokia (Rapporteur) CR Rel-16 38.300 16.3.0 0300 - F NR\_eMIMO-Core

- ZTE supports the intention of the CR but has some comments on the wording

- Ericsson also supports the intention, but TRP has not been defined so far and wonders whether we could refer to simultaneous transmission or something similar.

- Huawei thinks this should be defined by RAN1

* revised in R2-2010770

R2-2010770 Stage-2 description of multi-TRP Nokia (Rapporteur) CR Rel-16 38.300 16.3.0 0300 1 F NR\_eMIMO-Core

* [AT112-e][107][eMIMO] Stage 2 CRs (Nokia)

Scope: discuss revisions for 38.300 CRs 0300 and 0310

Intended outcome: Agreeable CRs in R2-2010769 and R2-2010770

Initial deadline (for companies' feedback): Tuesday 2020-11-10 11:00 UTC

Initial deadline (for CRs): Tuesday 2020-11-10 17:00 UTC

### 6.13.1 User plane corrections

Misc corrections to BFR procedure

[R2-2009098](file:///C:\Data\3GPP\Extracts\R2-2009098_CR0907_38321_Rel16_%20Correction%20to%20parameter%20list%20for%20beam%20failure%20recovery%20procedure.docx) Correction to parameter list for beam failure recovery procedure Samsung Electronics Co., Ltd CR Rel-16 38.321 16.2.1 0907 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Agree the CR with the following changes:

- replace “Preamble” with “Resources”

- Add the following changes:

Figure 6.1.3.23-1: BFR and Truncated BFR MAC CE with one octet Ci field~~the highest~~ *~~ServCellIndex~~* ~~of this MAC entity's SCell configured with BFD is less than 8~~

Figure 6.1.3.23-2: BFR and Truncated BFR MAC CE with four octets Ci field~~the highest~~ *~~ServCellIndex~~* ~~of this MAC entity's SCell configured with BFD is equal to or higher than 8~~

* Revised into [R2-2010762](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010762.zip)

[R2-2010762](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010762.zip) Correction to parameter list for beam failure recovery procedure Samsung Electronics Co., Ltd, ZTE Corporation, Sanechips CR Rel-16 38.321 16.2.1 0907 1 F NR\_eMIMO-Core

* Agreed (unseen)

[R2-2009904](file:///C:\Data\3GPP\Extracts\R2-2009904_CR0948_38321_R16_Miscellaneous%20correction%20on%20BFR%20and%20BFR%20MAC%20CE.docx) Miscellaneous on 38.321 for BFR and BFR MAC CE ZTE Corporation, Sanechips CR Rel-16 38.321 16.2.1 0948 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Not pursued (agreed changes included in [R2-2010762](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010762.zip))

[R2-2010494](file:///C:\Data\3GPP\Extracts\38321_CR0991_(Rel_16)_R2-2010494_correction%20to%20BFR%20MAC%20CEs.docx) Correction to bitmap length determination in MAC CEs for BFR Fujitsu CR Rel-16 38.321 16.2.1 0991 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Not pursued

BFR trigger point / BFR MAC CE generation

[R2-2009795](file:///C:\Data\3GPP\Extracts\R2-2009795%20BFR%20triggering%20with%20candidate%20beam%20search.docx) BFR triggering with candidate beam search Nokia, Nokia Shanghai Bell, Ericsson, ZTE discussion Rel-16 NR\_eMIMO-Core

* Discussed in offline 101
* QC has concerns due to RAN4 implications and wonders what happens if RAN4 does not agree to change. Nokia and Ericsson don’t think there should be a big issue in RAN4 to change this.
* VC suggests to also consider the option to change "need not" in "should" or "shall not" in the Note (according to QC proposal)
* Noted

[R2-2009796](file:///C:\Data\3GPP\Extracts\R2-2009796%20Clarification%20on%20the%20BFR%20trigger%20upon%20candidate%20search%20v1.docx) Clarification on the BFR trigger upon candidate search Nokia, Nokia Shanghai Bell, Ericsson, ZTE CR Rel-16 38.321 16.2.1 0944 - F NR\_eMIMO-Core

* Initially discussed in offline 101

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[R2-2009797](file:///C:\Data\3GPP\Extracts\R2-2009797%20Draft%20LS%20on%20BFR%20requirements%20time%20reference.docx) Draft LS on BFR requirements time reference Nokia LS out Rel-16 NR\_eMIMO-Core To:RAN WG4

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[R2-2010009](file:///C:\Data\3GPP\Extracts\R2-2010009_CR0885_38321_Rel16_%20Correction%20on%20BFR%20MAC%20CE%20generation.docx) Correction on BFR MAC CE generation Qualcomm Incorporated, Samsung CR Rel-16 38.321 16.2.1 0885 1 F NR\_eMIMO-Core [R2-2008219](file:///C:\Data\3GPP\archive\RAN2\RAN2%23111\Tdocs\R2-2008219.zip)

* Initially discussed in offline 101

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Show of hands

QC proposal ([R2-2010009](file:///C:\Data\3GPP\Extracts\R2-2010009_CR0885_38321_Rel16_%20Correction%20on%20BFR%20MAC%20CE%20generation.docx)): 4 companies

Nokia proposal ([R2-2009796](file:///C:\Data\3GPP\Extracts\R2-2009796%20Clarification%20on%20the%20BFR%20trigger%20upon%20candidate%20search%20v1.docx)): 5 companies

multi-CC simultaneous TCI activation with multi-TRP/panel transmission

[R2-2010013](file:///C:\Data\3GPP\Extracts\R2-2010013.docx) Discussion on Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC CE on multiple CC case Qualcomm Incorporated discussion Rel-16 NR\_eMIMO-Core

* Discussed in offline 101
* Noted

[R2-2010014](file:///C:\Data\3GPP\Extracts\R2-2010014_CR0955_38321_Rel16_%20Correction%20on%20Enhanced%20TCI%20States%20Activation%20Deactivation%20for%20UE-specific%20PDSCH%20MAC%20CE.docx) Correction on Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC CE Qualcomm Incorporated CR Rel-16 38.321 16.2.1 0955 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Not pursued

[R2-2010628](file:///C:\Data\3GPP\Extracts\R2-2010628%20eMIMO%20TCI%20state%20update%20sPDCCH%20mTRP%20per%20CC%20list.docx) Multi-CC simultaneous TCI activation with multi-TRP/panel transmission Ericsson discussion Rel-16 NR\_eMIMO-Core

* Discussed in offline 101
* Noted

[R2-2010634](file:///C:\Data\3GPP\Extracts\R2-2010634%20reply%20LS_update.docx) Reply LS on multi-CC simultaneous TCI activation with multi-TRP/panel transmission Ericsson LS out Rel-16 NR\_eMIMO-Core To:RAN1

* Add a reference to the need for a capability bit
* Also copy agreement 3 in the LS
* Revised in R2-2010771

R2-2010771 Reply LS on multi-CC simultaneous TCI activation with multi-TRP/panel transmission Ericsson LS out Rel-16 NR\_eMIMO-Core To:RAN1

[R2-2010637](file:///C:\Data\3GPP\Extracts\R2-2010637%20R16%2038321%20CR%20Correction%20for%20CC%20list%20operation%20for%20TCI%20state%20update%20MAC%20CE.docx) Correction for CC list operation for TCI state update MAC CE Ericsson, Samsung CR Rel-16 38.321 16.2.1 0994 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Add a reference to the need for a capability bit
* Revised in R2-2010772

R2-2010772 Correction for CC list operation for TCI state update MAC CE Ericsson, Samsung CR Rel-16 38.321 16.2.1 0994 1 F NR\_eMIMO-Core

Other

[R2-2009903](file:///C:\Data\3GPP\Extracts\R2-2009903_CR0947_38321_R16_%2038.321%20Correction%20on%20%20Enhanced%20PUCCH%20Spatial%20Relation%20ActivationDeactivation%20MAC%20CE.docx) 38.321 Correction on Enhanced PUCCH Spatial Relation ActivationDeactivation MAC CE ZTE Corporation, Sanechips CR Rel-16 38.321 16.2.1 0947 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* revised in R2-2010773 to include wording improvements

R2-2010773 38.321 Correction on Enhanced PUCCH Spatial Relation ActivationDeactivation MAC CE ZTE Corporation, Sanechips CR Rel-16 38.321 16.2.1 0947 1 F

* [AT112-e][101][eMIMO] MAC corrections (Samsung)

Scope: Discuss the CRs in AI 6.13.1

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

* + - List of CRs that can be agreed as is
    - List of CRs that can be agreed with some changes / merges with other CRs (with an indication of the needed changes)
    - List of CRs that require online discussion
    - List of CRs that should not be pursued

Initial deadline (for companies' feedback): Tuesday 2020-11-03 07:00 UTC

Initial deadline (for rapporteur's summary in R2-2010760): Tuesday 2020-11-03 09:00 UTC

Updated scope: Discuss reply LS to RAN1, revise 38.321CRs 0947 and 0994 and way forward on the BFR trigger point / BFR MAC CE generation issue

Updated intended outcome: Draft LS in R2-2010771, agreeable CRs in R2-2010772 and R2-2010773 and way forward in R2-2010774

Deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Deadline (for Draft LS, CRs and way forward): Wednesday 2020-11-11 01:00 UTC

[R2-2010760](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010760.zip) Summary of offline 101 - MAC corrections for eMIMO Samsung discussion Rel-16 NR\_eMIMO-Core

Proposal 1: Agree CR R2-2009098 with the following changes:

- replace “Preamble” with “Resources”

- Add the following changes:

Figure 6.1.3.23-1: BFR and Truncated BFR MAC CE with one octet Ci field~~the highest ServCellIndex of this MAC entity's SCell configured with BFD is less than 8~~

Figure 6.1.3.23-2: BFR and Truncated BFR MAC CE with four octets Ci field~~the highest ServCellIndex of this MAC entity's SCell configured with BFD is equal to or higher than 8~~

Proposal 2: CR R2-2010494 is not pursued.

Proposal 3: If the indicated Serving Cell is configured as part of a simultaneousTCI-UpdateList1 or simultaneousTCI-UpdateList2, this MAC CE applies to all the Serving Cells configured in the set simultaneousTCI-UpdateList1 or simultaneousTCI-UpdateList2, respectively

* Huawei thinks this makes the UE behaviour different so we need a capability bit. QC agrees. Huawei thinks that per-UE capability would be enough.

Proposal 4: Agree the CR R2-2010637.

Proposal 5: RAN2 to send reply LS to RAN1 confirming the current status of RAN2 specification. Draft LS R2-2010634 can be agreed.

Proposal 6: Agree the CR R2-2009903 as a baseline.

Agreements via email - offline 101:

1. Agree CR R2-2009098 with the following changes:

- replace “Preamble” with “Resources”

- Add the following changes:

Figure 6.1.3.23-1: BFR and Truncated BFR MAC CE with one octet Ci field ~~the highest ServCellIndex of this MAC entity's SCell configured with BFD is less than 8~~

Figure 6.1.3.23-2: BFR and Truncated BFR MAC CE with four octets Ci field ~~the highest ServCellIndex of this MAC entity's SCell configured with BFD is equal to or higher than 8~~

2. CR R2-2010494 is not pursued.

3. If the indicated Serving Cell is configured as part of a simultaneousTCI-UpdateList1 or simultaneousTCI-UpdateList2, this MAC CE applies to all the Serving Cells configured in the set simultaneousTCI-UpdateList1 or simultaneousTCI-UpdateList2, respectively.

4. Agree a revision of CR R2-2010637.

5. Introduce a new per-UE capability bit for this

5. RAN2 to send reply LS to RAN1 confirming the current status of RAN2 specification. Draft LS R2-2010634 can be agreed.

6. Agree a revision of CR R2-2009903 taking wording improvements into account.

R2-2010774 Summary of offline 101 - Way forward on BFR trigger point / BFR MAC CE generation issue Samsung discussion Rel-16 NR\_eMIMO-Core

### 6.13.2 Control plane corrections

38.331 CRs

[R2-2009169](file:///C:\Data\3GPP\Extracts\R2-2009169%20Correction%20to%20PDSCH%20TDRA%20for%20DCI%201-2.docx) Clarification to DCI format 1-2 TDRA Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.2.0 2038 - F NR\_eMIMO-Core

* HW is fine in general but wonders if the interoperability analysis in the coversheet is correct. Nokia thinks that this is correct strictly looking at RRC spec.
* ZTE supports the CR but would like to clarify the last part of the field description
* revised in R2-2010775

R2-2010775 Clarification to DCI format 1-2 TDRA Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.2.0 2038 1 F NR\_eMIMO-Core

[R2-2010011](file:///C:\Data\3GPP\Extracts\R2-2010011_CR2159_38331_Rel16_Correction%20on%20BFD%20resource%20on%20SCell.docx) Correction on BFD resource on SCell Qualcomm Incorporated CR Rel-16 38.331 16.2.0 2159 - F NR\_eMIMO-Core

* content seems agreeable.

[R2-2010126](file:///C:\Data\3GPP\Extracts\R2-2010126.docx) Correction on HARQ ACK/NACK feedback configuration Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2181 - F NR\_eMIMO-Core

* Nokia supports this, but we can also fix the reference to the right RAN1 spec
* content seems agreeable
* revised in R2-2010776

R2-2010776 Correction on HARQ ACK/NACK feedback configuration Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2181 1 F NR\_eMIMO-Core

[R2-2010127](file:///C:\Data\3GPP\Extracts\R2-2010127.docx) Correction on slot based repetition Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2182 - F NR\_eMIMO-Core

* HW thinks the CR is needed because of a RAN2 mistake
* continue offline
* revised in R2-2010777

R2-2010777 Correction on slot based repetition Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2182 1 F NR\_eMIMO-Core

[R2-2010625](file:///C:\Data\3GPP\Extracts\R2-2010625%20eMIMO%20capability.docx) On number for supported CORESETs Ericsson discussion Rel-16 NR\_eMIMO-Core

Proposal 1 RAN2 to agree to delete the sentences for the number of CORESETs per BWP per cell in the field descriptions in 38.331 as show in the TP in Annex A.

Proposal 2 RAN2 to agree the field description of multipleCORESET change from “more than one” to “two” and to clarify that “The upper limit is further extended if UE supports multiDCI-MultiTRP”.

Proposal 3 RAN2 to agree the TPs in Annex A also in Rel-15 specification .

* Huawei suggest to simply refer to RAN1 spec in 38.331
* Continue offline
* Draft an actual CR in R2-2010778

R2-2010778 On number for supported CORESETs Ericsson CR Rel-16 38.331 16.2.0 XXXX - F NR\_eMIMO-Core

R2-2010782 Introduction of capability bit for multi-CC simultaneous TCI activation with multi-TRP Huawei, HiSilicon CR Rel-16 38.331 16.2.0 XXXX - F NR\_eMIMO-Core

R2-2010783 Introduction of capability bit for multi-CC simultaneous TCI activation with multi-TRP Huawei, HiSilicon CR Rel-16 38.306 16.2.0 XXXX - F NR\_eMIMO-Core

* [AT112-e][108][eMIMO] RRC corrections (Huawei)

Scope: Discuss:

* + revised 38.331CRs 2038, 2181 and 2182
  + whether CR2159 can be merged with any other one or can be agreed as is
  + proposals in [R2-2010625](file:///C:\Data\3GPP\Extracts\R2-2010625%20eMIMO%20capability.docx)
  + revised 38.306CR 0469
  + new 38.331 and 38.306 CRs to introduce a capability bit for multi-CC simultaneous TCI activation with multi-TRP

Intended outcome: agreeable CRs in R2-2010775, R2-2010776, R2-2010777, R2-2010778, R2-2010779, R2-2010782, R2-2010783

Initial deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Initial deadline (for CRs): Tuesday 2020-11-10 23:00 UTC

38.306 CRs

[R2-2010636](file:///C:\Data\3GPP\Extracts\R2-2010636%20R16%2038306%20CR%20Clarification%20for%20mTRP.docx) Clarification for multiDCI-MultiTRP-r16 applicability Ericsson CR Rel-16 38.306 16.2.0 0469 - F NR\_eMIMO-Core

* HW suggest to change "feature" into "capability"
* Continue offline
* revised in R2-2010779

R2-2010779 Clarification for multiDCI-MultiTRP-r16 applicability Ericsson CR Rel-16 38.306 16.2.0 0469 1 F NR\_eMIMO-Core

R2-2010655 Correction on slot based repetition Huawei, HiSilicon CR Rel-16 38.306 16.2.0 0470 - F NR\_eMIMO-Core Late

## 6.14 NR Other R1 WIs

(NR\_CLI\_RIM; leading WG: RAN1; REL-16; started: Dec 18; Completed: Jun 20; WID: [RP-191997](file:///C:\Data\3GPP\archive\RAN\RAN%2385\Tdocs\RP-191997.zip);)

(NR\_L1enh\_URLLC-Core, leading WG: RAN1; REL-16; Completed: June 20; WID: [RP-191584](file:///C:\Data\3GPP\archive\RAN\RAN%2384\Tdocs\RP-191584.zip))

(R1 Led NR TEI16, Other R1 led items)

Documents in this agenda item will be handled in a break out session

Limit: 5 email threads

### 6.14.1 User plane corrections

### 6.14.2 Control plane corrections

CLI

[R2-2008705](file:///C:\Data\3GPP\Extracts\R2-2008705_R1-2007187.doc) Reply LS on exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI (R1-2007187; contact: ZTE) RAN1 LS in Rel-16 NR\_CLI\_RIM To:RAN3 Cc:RAN2

* Noted

[R2-2008729](file:///C:\Data\3GPP\Extracts\R2-2008729_R3-205794.docx) Full slot formats support in TDD UL-DL configuration (R3-205794; contact: Qualcomm) RAN3 LS in Rel-16 NR\_CLI\_RIM To:RAN1, RAN2

[R2-2010172](file:///C:\Data\3GPP\Extracts\R2-2010172.docx) DRAFT Reply LS on Full slot formats support in TDD UL-DL configuration Qualcomm Incorporated LS out Rel-16 NR\_CLI\_RIM To:RAN3 Cc:RAN1

* ZTE agrees with the explanation from QC and thinks we can reply about restriction on the RRC signalling over the Uu interface and leave it to RAN3 to decide what to do for their interfaces. QC agrees
* HW has the same understanding as QC
* continue offline
* revised in R2-2010780

R2-2010780 DRAFT Reply LS on Full slot formats support in TDD UL-DL configuration Qualcomm Incorporated LS out Rel-16 NR\_CLI\_RIM To:RAN3 Cc:RAN1

* [AT112-e][109][CLI] Reply LS to RAN3 (Qualcomm)

Scope: Draft a revised reply LS to RAN3

Intended outcome: draft reply LS in R2-2010780

Initial deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Initial deadline (for draft LS): Wednesday 2020-11-11 01:00 UTC

[R2-2010134](file:///C:\Data\3GPP\Extracts\R2-2010134.docx) Discussion on RAN3 LS on full slot format support Huawei, HiSilicon discussion Rel-16 NR\_CLI\_RIM-Core

[R2-2010521](file:///C:\Data\3GPP\Extracts\R2-2010521%20-%20Supported%20slot%20formats%20in%20RAN2%20specifications.docx) Supported slot formats in RAN2 specifications Ericsson discussion

TEI16

[R2-2008825](file:///C:\Data\3GPP\Extracts\R2-2008825%20TS%2038.331%20Directional%20collision%20handling.docx) Missing configuration for half-DuplexTDD-CA-SameSCS-r16 Nokia, Nokia Shanghai Bell, Ericsson CR Rel-16 38.331 16.2.0 2017 - B TEI16

[R2-2008826](file:///C:\Data\3GPP\Extracts\R2-2008826%20Draft%20LS%20on%20half-duplex%20operation.docx) Missing configuration for half-DuplexTDD-CA-SameSCS-r16 Nokia, Nokia Shanghai Bell LS out TEI16 To:RAN1

## 8.10 NR Non-Terrestrial Networks (NTN)

(NR\_NTN\_solutions-Core; leading WG: RAN2; REL-17; WID: [RP-201256](file:///C:\Data\3GPP\archive\RAN\RAN%2388\Tdocs\RP-201256.zip))

Time budget: 2 TU

Tdoc Limitation: 6 tdocs

Email max expectation: 4-5 threads

### 8.10.1 Organizational

Rapporteur inputs and other organizational documents. Documents in this AI do not count towards the tdoc limitation.

Workplan

[R2-2009695](file:///C:\Data\3GPP\Extracts\R2-2009695-Rel17%20NR-NTN%20workplan%20v25.docx) NR\_NTN\_solutions work plan THALES Work Plan Rel-17

* Noted

Incoming LS

[R2-2010686](file:///C:\Data\3GPP\Extracts\R2-2010686_C1-205967.doc) LS on NAS procedure guard timers for GEO satellite (C1-205967; contact: OPPO) CT1 LS in Rel-17 5GSAT\_ARCH-CT To:RAN2 Cc:SA2

[R2-2009377](file:///C:\Data\3GPP\RAN2\Docs\R2-2009377.zip) Discussion on CT1 LS on NAS procedure guard timers for GEO satellite OPPO discussion Rel-17 NR\_NTN\_solutions-Core Late

Proposal 1 UE conclude that the maximum value for t-PollRetransmit is 4000ms for GEO satellite.

Proposal 2 T300 is extended to [20]s for GEO satellite.

* QC wonders whether this is too large. There are other timers to extend as well
* LG agrees p1 and p2 but need to discuss the maximum value of timers
* ZTE agrees with comments from QC and LG
* Nokia thinks that we can answer that timers will be extended, but exact values will be decided later.

Proposal 3 Send reply LS to CT1 and provide RAN2’s answers.

* Discuss offline the content of a reply LS to CT1 saying that timers will be extended, but exact values will be decided later (offline discussion to be started after the second NTN GTW session)
* [AT112-e][110][NTN] Reply LS to CT1 (Oppo)

Scope: Discuss the content of a reply LS to CT1 saying that timers will be extended but exact values will be decided later

Intended outcome: Reply LS to CT1 in R2-2010763 on NAS procedure guard timers for GEO satellite

Initial deadline (for companies' feedback): Thursday 2020-11-12 11:00 UTC

Initial deadline (for LS): Thursday 2020-11-12 17:00 UTC

[R2-2009378](file:///C:\Data\3GPP\RAN2\Docs\R2-2009378.zip) Draft reply LS on NAS procedure guard timers for GEO satellite OPPO LS out Rel-17 NR\_NTN\_solutions-Core To:CT1 Cc:SA2 Late

* revised in R2-2010763

R2-2010763 Draft reply LS on NAS procedure guard timers for GEO satellite OPPO LS out Rel-17 NR\_NTN\_solutions-Core To:CT1 Cc:SA2

[R2-2008730](file:///C:\Data\3GPP\Extracts\R2-2008730_R3-205795.docx) Reply LS on SA WG2 assumptions from conclusion of study on architecture aspects for using satellite access in 5G (R3-205795;; contact: Qualcomm) RAN3 LS in Rel-17 NR\_NTN\_solutions-Core To:SA2, RAN2, CT1

* Noted

[R2-2010696](file:///C:\Data\3GPP\Extracts\R2-2010696_S2-2008307.docx) Reply LS on SA WG2 assumptions from conclusion of study on architecture aspects for using satellite access in 5G (S2-2008307; contact: Intel) SA2 LS in Rel-17 5GSAT\_ARCH To:RAN3 Cc:RAN2, SA3-LI, SA5

* Noted

[R2-2010697](file:///C:\Data\3GPP\Extracts\R2-2010697_S2-2008308.doc) LS on signalling of satellite backhaul connection (S2-2008308;contact: Samsung) SA2 LS in Rel-17 5GSAT\_ARCH To:RAN3 Cc:RAN1, RAN2

* Noted

[R2-2011041](file:///C:\Data\3GPP\RAN2\Inbox\R2-2011041.zip) Reply LS on SA WG2 assumptions from conclusion of study on architecture aspects for using satellite access in 5G (R3-207062; contact: Qualcomm) RAN3 LS in Rel-17 NR\_NTN\_solutions-Core, 5GSAT\_ARCH To: SA2, RAN2 Cc: SA3-LI, SA5

* Start discussing a reply LS to RAN3 in an offline discussion until Friday
* Noted
* [AT112-e][116][NTN] Reply LS to RAN3 (Qualcomm)

Scope: Start discussing the possible content of a reply LS to RAN3

Intended outcome: Summary of the offline discussion in R2-2010793

Initial deadline (for companies' feedback): Thursday 2020-11-12 22:00 UTC

Initial deadline (for rapporteur's summary): Friday 2020-11-12 04:00 UTC

R2-2010793 Summary of offline 116 - NTN - Possible content of a reply LS to RAN3 Qualcomm discussion Rel-17 NR\_NTN\_solutions-Core

Stage 2

[R2-2009136](file:///C:\Data\3GPP\Extracts\R2-2009136_NTN%20TP%20for%20TS%2038%20300_v4.docx) NR-NTN: TP for TS 38.300 Thales, Huawei, CATT, ZTE other Rel-17 38.300

* Nokia wonders whether the Stage 2 rapporteur was involved in this
* the TS rapporteur confirms he's fine with the structure
* Endorsed as a baseline for further discussion
* [POST112-e][1xx][NTN] Stage 2 running CR (Thales)

Scope: add Stage 2 agreements in the running CR

Intended outcome: endorsed running CR in R2-2010781

Deadline: Short?

R2-2010781 NR-NTN: TP for TS 38.300 Thales, Huawei, CATT, ZTE other Rel-17 38.300

Positioning aspects

[R2-2008884](file:///C:\Data\3GPP\Extracts\R2-2008884_NR-NTN_Positioning.docx) NR-NTN: Positioning Methods Fraunhofer IIS, Fraunhofer HHI discussion Rel-17 38.821 [R2-2006699](file:///C:\Data\3GPP\archive\RAN2\RAN2%23111\Tdocs\R2-2006699.zip)

* Noted

### 8.10.2 User Plane

#### 8.10.2.1 RACH aspects

Including the outcome of Post111-e][908][NTN] RACH and HARQ feedback aspects

[R2-2010455](file:///C:\Data\3GPP\Extracts\R2-2010455%20(R17%20NTN%20WI%20AI%208.10.2.1%20Summary%20of%20%5bPost111-e%5d%5b908%5d%5bNTN%5d).docx) Summary of [Post111-e][908][NTN] RACH and HARQ feedback aspects InterDigital discussion Rel-17 NR\_NTN\_solutions-Core Late

* based on the comments in the email discussion, VC thinks that one possible source of misunderstanding is related to the "UE-specific RTD" terminology, which could either refer to the UE-satellite RTT or UE-gNB RTT. Suggests to use "UE-gNB RTT" where applicable

Consensus

Proposal 6: If UE pre-compensates UE-specific RTD, preamble ambiguity is not an issue in Rel-17 NTN (i.e. no enhancements are necessary). (consensus)

Updated p6 for agreeement: If the UE-gNB RTT is pre-compensated, preamble ambiguity is not an issue in Rel-17 NTN (i.e. no enhancements are necessary)

Proposal 8: From RAN2 perspective, for UE with UE-specific pre-compensation as a baseline it is up to gNB implementation to ensure sufficient time on UE side for the Msg3 transmission. (consensus)

Proposal 11: HARQ uplink retransmission at the UE transmitter is enabled/disabled per HARQ process (consensus)

Updated p11 for agreeement (or we can wait to settle the discussion on p10 first): If HARQ uplink retransmission need to be enabled/disabled at the UE transmitter, they shall be enabled/disabled per HARQ process. FFS if HARQ uplink retransmission need to be enabled/disabled at the UE transmitter.

Agreements:

1. RAN2 working assumption (for RRC idle. FFS for Inactive/Connected): Rel-17 UE with pre-compensation capability obtains UE specific UE-gNB RTT based on its GNSS in LEO/GEO. FFS how this is calculated and what/if anything needs to be broadcasted for the different pre-compensation methods (e.g. common TA) to help the UE to obtain the full UE-gNB RTT.
2. If the UE-gNB RTT is pre-compensated, preamble ambiguity is not an issue in Rel-17 NTN (i.e. no enhancements are necessary). FFS how and by whom the possibly multiple components of UE-gNB RTT are pre-compensated
3. From RAN2 perspective, for UE with UE-specific pre-compensation as a baseline it is up to gNB implementation to ensure sufficient time on UE side for the Msg3 transmission.
4. For UE with pre-compensation capability (at least for the HARQ-feedback enabled case. FFS for HARQ-feedback disabled, if supported), drx-HARQ-RTT-TimerDL is offset by UE-specific RTT (UE-gNB delay) in LEO/GEO. FFS if offset is applied to: 1) the start of the timers or 2) the timer value range (i.e. existing values within value range increased by offset)

Likely Agreeable

Proposal 1: RAN2 working assumption: Rel-17 UE with pre-compensation capability can at least obtain UE specific RTD based on its GNSS in LEO/GEO. FFS additional signalling (e.g. common TA) to obtain full UE-gNB RTD. (27/28)

Updated p1 for agreeement: RAN2 working assumption: Rel-17 UE with pre-compensation capability ~~can at least~~ obtains UE specific UE-gNB RTT based on its GNSS in LEO/GEO. FFS what/if anything needs to be broadcasted for the different pre-compensation methods (e.g. common TA) to help the UE to obtain the full UE-gNB RTT.

* Huawei, Mediatek, Samsung, Xiaomi, Apple and others think this should be equally applicable for Connected.

Proposal 2: For UE with pre-compensation capability, start of the ra-ContentionResolutionTimer is offset by UE-gNB RTD in LEO/GEO. (24/28)

Proposal 3: From RAN2 perspective, for UE with pre-compensation capability, start of the ra-ResponseWindow and msgB-ResponseWindow is offset by UE-gNB RTD in LEO/GEO. (23/28)

Proposal 5: If the start of the ra-ResponseWindow and msgB-ResponseWindow is compensated by UE-gNB RTD, ra-ResponseWindow and msgB-ResponseWindow are not extended in LEO/GEO. (26/28)

Proposal 10: From a RAN2 perspective, HARQ uplink retransmission relying on the decoding result of previous PUSCH transmission at the UE transmitter can be enabled/disabled in Rel-17 NTN (i.e. blind retransmission and slot aggregation if configured are not disabled). (25/28)

Proposal 12: From RAN2 perspective, HARQ uplink retransmission at the UE transmitter can be enabled/disabled, but HARQ processes remain configured. The criteria to enable/disable HARQ uplink retransmission is under network control, and is signalled to UE via RRC in a semi-static manner. (24/26)

Proposal 14: An LS is sent to RAN1 regarding RAN2 agreements on HARQ UL retransmission (20/26).

Proposal 15: For UE with pre-compensation capability, drx-HARQ-RTT-TimerUL and drx-HARQ-RTT-TimerDL are offset by UE-specific RTD (UE-gNB delay) in LEO/GEO. FFS if offset is applied to: 1) the start of the timers or; 2) the timer value range (i.e. existing values within value range increased by offset); (26/27)

* Ericsson has concerns with the UL part

Proposal 16: If HARQ feedback is disabled, drx-HARQ-RTT-TimerDL and drx-HARQ-RTT-TimerUL are not started for both LEO and GEO scenarios. FFS modification of drx-RetransmissionTimerDL and drx-RetransmissionTimerUL to support blind retransmission, if agreed. (21/27)

Requires Discussion

Proposal 4: An LS is sent to RAN1 to inform RAN1 of the following (if agreed), and ask it be captured in TS 38.213 (20/27):

From RAN2 perspective, for UE with pre-compensation capability, start of the ra-ResponseWindow and msgB-ResponseWindow is offset by UE-gNB RTD in LEO/GEO.

Proposal 7a: RAN2 preference on UE-specific timing pre-compensation method is Option 1 (i.e. TA is estimated by the UE based on its GNSS acquired position together with the serving satellite ephemeris indicated by the network). However, RAN2 has not identified any prohibitive technical constraint to RAN2 specification for Option 2. (17/28)

Proposal 7b: Inform RAN1 of RAN2 preference on UE-specific timing pre-compensation (i.e. Option 1).

Proposal 9: The following 2-step and 4-step RACH enhancements are FFS:

4. Report UE-calculated TA in e.g. msg3/msg5/msgA (7);

5. Enhancements to RSRP-based selection mechanism of 2-step vs. 4-step RACH (6);

6. Introduction of K\_offset in SI (to support RAN1 agreements) (5).

Proposal 13: FFS: LCP impact caused by disabling HARQ UL retransmission.

* [AT112-e][103][NTN] RACH and HARQ feedback aspects (IDC)

Scope: Discuss (a revision of) p2, p3, p5, p10, p12, p9, p13 from [R2-2010455](file:///C:\Data\3GPP\Extracts\R2-2010455%20(R17%20NTN%20WI%20AI%208.10.2.1%20Summary%20of%20%5bPost111-e%5d%5b908%5d%5bNTN%5d).docx)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Monday 2020-11-09 17:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010764](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010764.zip)): Monday 2020-11-09 23:00 UTC

Proposals marked "for agreement" in [R2-2010764](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010764.zip) not challenged until Tuesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair. For the rest the discussion will continue online.

[R2-2010764](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010764.zip) Summary of offline 103 - NTN RACH and HARQ feedback aspects InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

Proposals for agreement:

Proposal 1: RAN2 decision on offset method for ra-ContentionResolutionTimer, ra-ResponseWindow and msgB-ResponseWindow is postponed until further progress in RAN1 regarding UE pre-compensation method and TA estimation accuracy.

* Mediatek is confused about the wording and thinks the majority in RAN2 is in favor of “is via UE-gNB RTT estimate”, as originally mentioned in “Observation-1”: in that sense, the original observation 1 seems more viable.
* Qualcomm suggests to replace "RAN2 decision on offset method" with "Details of offset". IDC supports this.
* Ericsson suggests to replace "offset method for" with "starting"
* Continue online
* Agreed with the wording "RAN2 decision on starting…"

Proposal 2: If the start of the ra-ResponseWindow and msgB-ResponseWindow is accurately compensated by UE-gNB RTT, ra-ResponseWindow and msgB-ResponseWindow are not extended in LEO/GEO. (consensus)

* Agreed

Proposal 3: From RAN2 perspective, HARQ uplink retransmission relying on the decoding result of previous PUSCH transmission can be enabled/disabled at UE transmitter by gNB implementation (i.e. gNB can send grant with NDI not toggled/toggled without waiting for decoding result of previous PUSCH transmission) (22/27)

* HW still thinks we should have same behaviour for DL and UL
* Samsung suggests to replace the text in the brackets with "FFS if the gNB uses RRC signaling, PHY signaling (e.g., NDI not toggled/toggled without waiting for decoding result of previous PUSCH transmission), or MAC signaling."
* HW and LS suggest to remove "relying on the decoding result of previous PUSCH transmission"
* Qualcomm would like to remove "by gNB implementation". BT does not agree
* Ericsson and ZTE think that p3 reflect the discussion and support it as it is
* Continue online
* HW thinks the advance of RRC signalling is that both the NW and the UE know. QC agrees: DL and UL should behave in the same way. LGE has the same view. Also Apple prefers the same signalling in UL and DL. Mediatek/Oppo also support. Xiaomi agrees
* Ericsson thinks we should not introduce signalling if it’s not specified what it's used for: why should the UE know the eGB strategy. Nokia doesn't think the UE should be informed by RRC signalling, DCI signalling is ok. ZTE thinks the UE can know based on DCI signalling: why is RRC signalling needed? Intel also does not understand why RRC is needed. Sequans agrees.
* HW thinks this could also be related to LCP, the UE could behave differently based on the pre-configured knowledge of whether this is enabled or disabled. QC thinks the UE needs to know how to use RTT / DRX timers. Ericsson thinks we don't need to have the same timers in UL and DL. Additionally Ericsson thinks that this would impact LCP. Lenovo agrees with Ericsson and thinks that first of all we need to decide which kind of functionality we need to achieve, the signalling type would then follow.
* HW has concerns on the DCI based solution because of the CG. Oppo agrees. Ericsson think that for CG it's fine: it's already possible to do this via RRC.
* LGE could accept the WA (legacy behaviour) but wonders on the need for FFS.
* Xiaomi cannot accept the Working Assumptions
* A Working Assumption will be attempted online during Friday CB session

Working assumption to be attempted online during Friday CB session:

1. From RAN2 perspective, for dynamic grant, HARQ uplink retransmission can be "enabled"/"disabled" at UE transmitter without introducing an additional mechanism (i.e. gNB can send grant with NDI not toggled/toggled without waiting for decoding result of previous PUSCH transmission).

Proposal 5: At least the following are FFS in Rel-17 NTN:

1. Report UE-calculated TA in e.g. msg3/msg5/msgA (24/28)

2. Enhancements to RSRP-based selection mechanism of 2-step vs. 4-step RACH (22/28)

3. LCP impact caused by disabling HARQ UL retransmission (21/28)

- based on the comments in the offline IDC suggests to add another FFS on "Configuration of drx-HARQ-RTT-TimerUL and drx-RetransmissionTimerUL when HARQ UL retransmission disabled"

* FFS 1, 2 and 3 agreed. Continue online for the rest

Proposals for discussion:

Proposal 4: HARQ uplink retransmission at the UE transmitter is enabled/disabled per HARQ process, but HARQ processes remain configured. The criteria to enable/disable HARQ uplink retransmission is under network control.

Agreements via email - offline 103:

1. If the start of the ra-ResponseWindow and msgB-ResponseWindow is accurately compensated by UE-gNB RTT, ra-ResponseWindow and msgB-ResponseWindow are not extended in LEO/GEO.
2. At least the following are FFS in Rel-17 NTN:

* Report UE-calculated TA in e.g. msg3/msg5/msgA
* Enhancements to RSRP-based selection mechanism of 2-step vs. 4-step RACH
* LCP impact caused by disabling HARQ UL retransmission

Agreements online:

1. RAN2 decision on starting ra-ContentionResolutionTimer, ra-ResponseWindow and msgB-ResponseWindow is postponed until further progress in RAN1 regarding UE pre-compensation method and TA estimation accuracy.

[R2-2010456](file:///C:\Data\3GPP\RAN2\Docs\R2-2010456.zip) [DRAFT] LS to RAN1 on RAN2 agreements for ra-ResponseWindow and msgB-ResponseWindow InterDigital LS out Rel-17 NR\_NTN\_solutions-Core To:RAN1 Late

[R2-2010457](file:///C:\Data\3GPP\RAN2\Docs\R2-2010457.zip) [DRAFT] LS to RAN1 on RAN2 agreements for enabling/disabling HARQ UL retransmission InterDigital LS out Rel-17 NR\_NTN\_solutions-Core To:RAN1 Late

[R2-2008911](file:///C:\Data\3GPP\Extracts\R2-2008911_For8.10.2.1_RACH_Aspects_ObservationsProposals_Samsung.doc) RACH Aspects for an NTN- Observations and Proposals Samsung Research America discussion

[R2-2008979](file:///C:\Data\3GPP\Extracts\R2-2008979.docx) MAC issues for NTN Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2008980](file:///C:\Data\3GPP\Extracts\R2-2008980.docx) Timing advance for NTN Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2008998](file:///C:\Data\3GPP\Extracts\R2-2008998%20Consideration%20on%20TA%20compensation%20for%20HAPS%20and%20ATG%20case.doc) Consideration on TA compensation for HAPS and ATG case Beijing Xiaomi Mobile Software discussion Rel-17

[R2-2009063](file:///C:\Data\3GPP\Extracts\R2-2009063_MAC_NTN.docx) Enhancements for NTN on MAC Layer Nomor Research GmbH, Thales discussion Rel-17 [R2-2006702](file:///C:\Data\3GPP\archive\RAN2\RAN2%23111\Tdocs\R2-2006702.zip)

[R2-2009107](file:///C:\Data\3GPP\Extracts\R2-2009107%20-%20Discussion%20on%20RACH%20in%20NTN.doc) Discussion on RACH in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009139](file:///C:\Data\3GPP\Extracts\R2-2009139.doc) Discussion on Random Access Spreadtrum Communications discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009451](file:///C:\Data\3GPP\Extracts\R2-2009451.doc) Random Access procedure with timing reference at gateway vs satellite Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009514](file:///C:\Data\3GPP\Extracts\._R2-2009514%20On%20Preamble%20Ambiguity%20in%20NTN%20networks.docx) On preamble ambiguity in NTN networks Apple discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009595](file:///C:\Data\3GPP\Extracts\R2-2009595%20Discussion%20on%20HARQ%20and%20RACH%20aspects%20in%20NTN.docx) Discussion on HARQ and RACH aspects in NTN Asia Pacific Telecom co. Ltd discussion NR\_NTN\_solutions-Core

[R2-2009635](file:///C:\Data\3GPP\Extracts\R2-2009635%20Consideration%20on%20MAC%20enhancements%20for%20NTN.doc) Consideration on MAC enhancements for NTN Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009636](file:///C:\Data\3GPP\Extracts\R2-2009636%20Consideration%20on%20varying%20RTD%20for%20earth%20fixed%20beam%20case.doc) Consideration on varying RTD for earth fixed beam case Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009860](file:///C:\Data\3GPP\Extracts\R2-2009860%20Considerations%20on%20timing%20advance%20pre-compensation%20in%20NTN.docx) Considerations on timing advance pre-compensation in NTN Lenovo, Motorola Mobility discussion Rel-17

[R2-2009861](file:///C:\Data\3GPP\Extracts\R2-2009861%20Preamble%20ambiguity%20for%20UE%20without%20TA%20pre-compensation%20capability.docx) Preamble ambiguity for UE without TA pre-compensation capability Lenovo, Motorola Mobility discussion Rel-17

[R2-2009932](file:///C:\Data\3GPP\Extracts\R2-2009932.docx) Considerations on RACH procedure enhancements in NTN CAICT discussion

[R2-2009975](file:///C:\Data\3GPP\Extracts\R2-2009975_Support%20UE%20with%20or%20without%20UE-specific%20pre-compensation.docx) Support of UEs with/without UE-specific pre-compensation NEC Telecom MODUS Ltd. discussion

[R2-2009981](file:///C:\Data\3GPP\Extracts\R2-2009981%20Discussion%20on%202-step%20RACH%20adaptation%20in%20NTN.docx) Discussion on 2-step RACH adaptation in NTN Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009984](file:///C:\Data\3GPP\Extracts\R2-2009984%20NTN%20timers%20and%20common%20delay%20update%20in%20moving%20satellite%20scenario.docx) NTN timers and common delay update in moving satellite scenario Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010091](file:///C:\Data\3GPP\Extracts\R2-2010091%20Timing%20Advance%20management%20in%20NTN.docx) Timing Advance management in NTN ETRI discussion Rel-17 NR\_NTN\_solutions

[R2-2010169](file:///C:\Data\3GPP\Extracts\R2-2010169%20-%20On%20Random%20Access%20in%20NTN.docx) On Random Access in NTN Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

* revised in [R2-2010980](file:///C:\Data\3GPP\RAN2\Docs\R2-2010980.zip)

[R2-2010980](file:///C:\Data\3GPP\RAN2\Docs\R2-2010980.zip) On Random Access in NTN Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010319](file:///C:\Data\3GPP\Extracts\R2-2010319%20Considerations%20on%20Random%20Access%20in%20NTN.doc) Considerations on Random Access in NTN ZTE Corporation, Sanechips discussion Rel-17

[R2-2010339](file:///C:\Data\3GPP\Extracts\R2-2010339_Enhancement%20on%20random%20access%20procedure_r2.DOCX) Enhancement on random access procedure LG Electronics Inc. discussion NR\_NTN\_solutions-Core

[R2-2010393](file:///C:\Data\3GPP\Extracts\R2-2010393%20Discussion%20on%20pre-compensation%20in%20NTN.docx) Discussion on pre-compensation in NTN CMCC discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010451](file:///C:\Data\3GPP\Extracts\R2-2010451%20(R17%20NTN%20WI%208.10.2.1%20Delay%20compensation).docx) Delay calculation and compensation in NTN InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

#### 8.10.2.2 Other MAC aspects

[R2-2009064](file:///C:\Data\3GPP\Extracts\R2-2009064_NTN_MAC_UL_scheduling.docx) Enhancements on UL scheduling for NTN Nomor Research GmbH, Thales discussion Rel-17

Proposal 1: In NTN, the preferred configured grant is Type 1, which is configurable for a group of UEs.

Proposal 2: Enhancement to reduce the signaling overhead on configuration as well as activation / deactivation of configured grant should be discussed for NTN.

Proposal 3: There is no need to modify periodicity of information element (IE) ConfiguredGrantConfig to support NTN.

Proposal 4: There is no need to modify maxNrofConfiguredGrantConfig-r16 and maxNrofConfiguredGrantConfigMAC-r16 to support NTN.

Proposal 5: Support configured grant in NTN for UL scheduling.

Proposal 6: 2-step RACH procedure will be the preferred random access procedure to request for a grant for UL data transmission in NTN.

Proposal 7: In NTN, use BSR over 2-step RACH only to a limited level. FFS whether a level should be specified or is up to network implementation.

Proposal 8: Support BSR over 2-step RACH procedure in NTN for UL scheduling.

[R2-2009109](file:///C:\Data\3GPP\Extracts\R2-2009109%20-%20Discussion%20on%20other%20MAC%20issues%20in%20NTN.doc) Discussion on other MAC issues in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

Proposal 1 For a UE configured with both CG and 2-step RACH, when a BSR is triggered, whether the UE triggers 2-step RACH or send BSR through CG is up to UE implementation.

Proposal 2 Introduce an offset for the start of sr-ProhibitTimer.

[R2-2008836](file:///C:\Data\3GPP\Extracts\R2-2008836%20Discussion%20on%20other%20MAC%20Enhancement%20and%20Impact%20for%20NTN.docx) Discussion on Other MAC aspects enhancements in NR NTN CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2008912](file:///C:\Data\3GPP\Extracts\R2-2008912_For8.10.2.2_OtherMACAspects_ObservationsProposals_Samsung.doc) MAC Aspects for an NTN- Observations and Proposals Samsung Research America discussion

[R2-2008936](file:///C:\Data\3GPP\Extracts\R2-2008936%20Discussion%20on%20DRX%20operation%20associated%20with%20blind%20retransmission.docx) Discussion on DRX operation associated with blind retransmission PANASONIC R&D Center Germany discussion

[R2-2008969](file:///C:\Data\3GPP\Extracts\R2-2008969%20RTD%20offset%20for%20CG%20timers_v2.docx) Round trip delay offset for configured grant timers MediaTek Inc. discussion

[R2-2008970](file:///C:\Data\3GPP\Extracts\R2-2008970%20LCP%20impact%20of%20disabling%20HARQ%20UL%20retransmission_v2.docx) LCP impact of disabling HARQ uplink retransmission MediaTek Inc. discussion

[R2-2008997](file:///C:\Data\3GPP\Extracts\R2-2008997%20Consideration%20on%20HARQ%20blind%20retransmission.doc) Consideration on HARQ blind retransmission Beijing Xiaomi Mobile Software discussion Rel-17

[R2-2009108](file:///C:\Data\3GPP\Extracts\R2-2009108%20-%20HARQ%20impact%20on%20MAC%20procedures%20in%20NTN.doc) HARQ impact on MAC procedures in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009140](file:///C:\Data\3GPP\Extracts\R2-2009140.doc) Discussion on HARQ and related timers Spreadtrum Communications discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009452](file:///C:\Data\3GPP\Extracts\R2-2009452.doc) UL HARQ process without HARQ retransmission Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009511](file:///C:\Data\3GPP\Extracts\._R2-2009511%20On%20User%20Plane%20Latency%20Reduction%20Mechanisms%20in%20NTN%20Networks.docx) On user plane latency reduction mechanisms in NTN networks Apple discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009864](file:///C:\Data\3GPP\Extracts\R2-2009864%20Discussion%20on%20DRX%20in%20NTN-v1.0.doc) Discussion on DRX for NTN Lenovo, Motorola Mobility discussion Rel-17

[R2-2009895](file:///C:\Data\3GPP\Extracts\R2-2009895.doc) Other MAC aspects in NTN Sony discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009987](file:///C:\Data\3GPP\Extracts\R2-2009987%20Discussion%20on%20HARQ%20and%20UL%20scheduling%20enhancement%20aspects%20in%20NTN.docx) Discussion on HARQ and UL scheduling enhancement aspects in NTN Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010168](file:///C:\Data\3GPP\Extracts\R2-2010168%20-%20On%20scheduling%20HARQ%20and%20DRX%20for%20NTN.docx) On scheduling, HARQ, and DRX for NTN Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010320](file:///C:\Data\3GPP\Extracts\R2-2010320%20Considerations%20on%20HARQ%20in%20NTN.doc) Considerations on HARQ in NTN ZTE Corporation, Sanechips discussion Rel-17

[R2-2010334](file:///C:\Data\3GPP\Extracts\R2-2010334_Discussion%20on%20disabling%20HARQ%20feedback%20and%20uplink%20retransmission_r4.DOCX) Discussion on disabling HARQ feedback and uplink retransmission LG Electronics Inc. discussion NR\_NTN\_solutions-Core

[R2-2010335](file:///C:\Data\3GPP\Extracts\R2-2010335_Discussion%20on%20scheduling%20enhancement_r1.DOCX) Discussion on scheduling enhancement LG Electronics Inc. discussion NR\_NTN\_solutions-Core

[R2-2010368](file:///C:\Data\3GPP\Extracts\R2-2010368%20Further%20discussion%20of%20HARQ%20operation%20for%20NTN.docx) Further discussion of HARQ operation for NTN CMCC discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010369](file:///C:\Data\3GPP\Extracts\R2-2010369%20HARQ%20enhancement%20for%20NTN%20system.docx) HARQ enhancement for NTN system CMCC discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010533](file:///C:\Data\3GPP\Extracts\R2-2010533%20HARQ%20aspects%20in%20NTN%20-%20final.docx) HARQ aspects in NTN ETRI discussion

[R2-2010664](file:///C:\Data\3GPP\Extracts\R2-2010664.docx) Considerations on scheduling request in NTN CAICT discussion

#### 8.10.2.3 RLC and PDCP aspects

Including the outcome of Post111-e][909][NTN] RLC and PDCP aspects

[R2-2008896](file:///C:\Data\3GPP\Extracts\R2-2008896_PDCP-RLC_EMail%20Discussion%20Summary.docx) [POST111e][909][NTN] Email Discussions Summary on RLC and PDCP aspects (MediaTek) MediaTek Inc. discussion

Proposals with Complete Consensus

Proposal 1: RLC t-Reassembly timer needs to be extended in NR-NTN.

Proposal 3: There is no need to extend t-PollRetransmit Timer in NR-NTN.

Proposal 4: There is no need to extend t-statusProhibit Timer in NR-NTN.

Proposal 5: There is no need to extend RLC SN length in NR-NTN

Proposal 9: There is no need to extend PDCP SN length in NR-NTN

Agreements:

1. RLC t-Reassembly timer needs to be extended in NR-NTN.
2. There is no need to extend t-PollRetransmit Timer in NR-NTN.
3. There is no need to extend t-statusProhibit Timer in NR-NTN.
4. There is no need to extend RLC SN length in NR-NTN
5. There is no need to extend PDCP SN length in NR-NTN

Proposals with Majority Support

Proposal 2: The extension of RLC t-Reassembly timer is left on network implementation. The maximum value (or value range) of the extended timer is FFS.

* Samsung would like to have a general framework for all R16 timers

Proposal 6: There is no need to extend the PDCP Discard timer in NR-NTN until any new QoS requirement (5QI) is defined.

Proposal 7: If RAN2 agrees to extend the PDCP Discard timer, it will extend the value-range of the PDCP discard timer by a fixed set of values.

Proposal 8: There is no need to extend the PDCP t-Reordering timer in NR-NTN until any new QoS requirement (5QI) is defined

Proposals with No Clear Majority (Needs Online Discussion)

Proposal 10: RAN2 to send an LS to SA2, requesting to define new 5QI values that can meet NTN requirements (including GEO).

[R2-2008913](file:///C:\Data\3GPP\Extracts\R2-2008913_For8.10.2.3_RLC_PDCP_Aspects_ObservationsProposals_Samsung.doc) RLC and PDCP Aspects for an NTN- Observations and Proposals Samsung Research America discussion

[R2-2009070](file:///C:\Data\3GPP\Extracts\R2-2009070_RLC_PDCP_NTN.doc) Remaining Aspects on Enhancements for NTN on RLC and PDCP Timers Nomor Research GmbH, Thales discussion Rel-17

[R2-2009647](file:///C:\Data\3GPP\Extracts\R2-2009647_Consideration%20of%20RLC%20and%20PDCP%20in%20NTN.docx) Consideration of RLC and PDCP in NTN China Telecom discussion

[R2-2010167](file:///C:\Data\3GPP\Extracts\R2-2010167%20-%20On%20RLC%20and%20PDCP%20for%20NTN.docx) On RLC and PDCP for NTN Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010170](file:///C:\Data\3GPP\Extracts\R2-2010170_Additional%20RLC%20and%20PDCP%20aspects_for_NTN.docx) Additional RLC and PDCP aspects for NTN Sequans Communications discussion Rel-17 NR\_NTN\_solutions-Core

### 8.10.3 Control Plane

Also identify things not covered in the TR that need to be covered, if any.

#### 8.10.3.1 Earth fixed moving beams related issues

Including the outcome of Post111-e][910[NTN] Impacts of earth fixed and moving beams

[R2-2009820](file:///C:\Data\3GPP\Extracts\R2-2009820_RAN2Email910_EarthFixedMovingBeams_Report.docx) [POST111e][910][NTN] Impacts of earth fixed and moving beams (Ericsson) Ericsson report

Proposal 1 RAN2 to consider Case 1 where gNB is co-located at the GW as priority.

Proposal 2 RAN2 does not continue inspecting differences between Earth fixed and Earth moving beams for Case 2. This does not preclude individual companies to bring contributions to RAN2 about it.

Proposal 3 RAN2 to discuss below issues for soft feeder link switch

Issue 1: Many connected mode UEs need to be handed over within the duration of the feeder link switch

Issue 2: Many idle mode UEs need to reselect another cell

Proposal 4 RAN2 to discuss below issues for hard feeder link switch

Issue 6: Many connected mode UEs need to be moved to next cell within the duration of the feeder link switch

Issue 7: Many idle mode UEs need to reselect another cell

Issue 9: Service interruption due to tearing down one feeder&service link and building other

Proposal 5 RAN2 to send LS to RAN1 to ask feasibility of having same PCI from two satellites during service link switch.

Proposal 6 RAN2 to discuss below issues for service link switch

Issue 10: Many connected mode UEs need to be handed over within the duration of the service link switch

Issue 11: Many idle mode UEs need to reselect another cell

Proposal 7 RAN2 to prioritize discussing CHO in context of Scenarios 1-3.

Proposal 8 RAN2 to discuss the below solutions or their variants further(yellow most straightforward additions added)

* Solution 11: Informing of the upcoming feeder link switch (the UE about PCI leaving and another PCI appearing due to feeder link switch)
  + stored at UE or via system information or paging indicator
* Solution 12: UE does cell ranking and reselection based on
* information of Solution 7 stored at UE or via system information or paging indicator
* UE absolute location
* UE location relative to serving satellite
* Round trip time (RTT) for the satellite
* Remaining dwell time(time left to be served) in a cell that is leaving or appearing

Proposal 9 RAN2 to agree to support the following solutions (details FFS)

* information of Solution 7(Informing of the upcoming feeder link switch (the UE about PCI leaving and another PCI appearing due to feeder link switch))
* Remaining dwell time(time left to be served) in a cell that is leaving or appearing(which is same as signal left to be available):
* Samsung and ZTE would like to continue discussing this offline

Proposal 10 RAN2 to study further whether location can be used as part of cell reselection procedure while concerning UE’s power consumption.

Proposal 11 RAN2 to prioritize discussing soft TAI update

Agreements:

1. RAN2 to consider the case where gNB is co-located at the GW with higher priority.
2. RAN2 will continue working with the assumption that service link switch implies L3 mobility (meaning that at least in case the SSBs are on the same sync raster point the PCIs need to be different). Check if an LS to RAN1 asking for feasibility of having same PCI as well can be agreed

* [AT112-e][104][NTN] Misc CP issues (Ericsson)

Scope: Discuss (a revision of) p7, p8, p9, p11 from [R2-2009820](file:///C:\Data\3GPP\Extracts\R2-2009820_RAN2Email910_EarthFixedMovingBeams_Report.docx) and discuss an LS to RAN1 asking for feasibility of having two satellites with same PCI during service link switch

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

and draft LS to RAN1

Initial deadline (for companies' feedback): Monday 2020-11-09 17:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010765](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010765.zip) and draft LS in R2-2010766): Monday 2020-11-09 23:00 UTC

Proposals marked "for agreement" in [R2-2010765](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010765.zip) not challenged until Tuesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair. For the rest the discussion will continue online.

[R2-2010765](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010765.zip) Summary of offline 104 - Misc CP issues Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

Proposals for online discussion:

Proposal 1 Rel-16 CHO is considered as baseline and a combination of NTN specific triggers is adopted. These may be at least location and timer based and it should be able to reflect the feeder/service link switch timing.

* Discussed as part of report of offline 105

Proposal 2 Rel-16 cell reselection principles are considered as baseline and that information about when a cell is going to stop serving the area and information about new upcoming cell is needed. In which for and how this is exactly implemented in the cell reselection principles is FFS.

* ZTE does not think that additional information is needed. Oppo agrees. CATT thinks additional information is needed. Nokia is fine with the proposal
* Agreed with the clarification that additional information "can be further considered"

Proposal 3 Discuss RAN3 LS online

* Start discussing a reply LS to RAN3 in an offline discussion until Friday

Proposal 4 Discuss online whether to sent the LS to RAN1 or not

* VC suggests first of all to clarify agreement 2 from "RAN2 will continue working with the assumption that during service link switch two satellites have two different PCIs." into "RAN2 will continue working with the assumption that service link switch implies L3 mobility (meaning that at least in case the SSBs are on the same sync raster point the PCIs need to be different)"
* Agree to clarify agreement 2 as above.
* VDF thinks we should avoid having different Cell IDs for the same cell. Ericsson thinks this is not related to this discussion (which is on PCI, not Cell ID).
* Intel thinks we should avoid the same PCI case.
* Sony is ok to send an LS to RAN1 on this.
* QC/Intel/LGE think this is in the RAN1 area and any decision on this should come from RAN1.
* No LS to RAN1 on this is sent from this meeting. We can come back to this in the future if needed.

Agreements:

1. Existing cell reselection principles are considered as baseline and that information about when a cell is going to stop serving the area and information about new upcoming cell can be further considered. In which form and how this is exactly implemented in the cell reselection principles is FFS.

R2-2010766 Draft LS to RAN1 on same PCI during service link switch Ericsson LS out Rel-17 NR\_NTN\_solutions-Core To:RAN1

* Withdrawn

[R2-2010377](file:///C:\Data\3GPP\Extracts\R2-2010377%20Considerations%20on%20Soft%20TAI%20Update.docx) Considerations on Soft TAI Update CMCC discussion Rel-17 NR\_NTN\_solutions-Core

Proposal 2: it is proposed that the UE can derive the TAC according to the geographical location, and such kind of TAC change causing by satellite moving will not trigger paging for system information change.

[R2-2008838](file:///C:\Data\3GPP\Extracts\R2-2008838%20Discussion%20on%20Tracking%20Area%20for%20Earth%20Moving%20Cells.docx) Discussion on tracking area for earth moving cells CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2008914](file:///C:\Data\3GPP\Extracts\R2-2008914_For8.10.3.1_BeamAspects_ObservationsProposals_Samsung.doc) Beam Aspects for an NTN- Observations and Proposals Samsung Research America discussion

[R2-2009110](file:///C:\Data\3GPP\Extracts\R2-2009110%20Discussion%20on%20earth%20fixed%20and%20moving%20cells.doc) Discussion on earth fixed and moving cells OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009141](file:///C:\Data\3GPP\Extracts\R2-2009141.doc) Discussion on Floor Layout Information Spreadtrum Communications discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009256](file:///C:\Data\3GPP\Extracts\R2-2009256%20Earth%20fixed,%20moving%20cells%20in%20NTN.doc) Earth fixed/moving beams related issues THALES discussion Rel-17

[R2-2009453](file:///C:\Data\3GPP\Extracts\R2-2009453.docx) Gateway switch procedure for earth fixed and moving beam scenario Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009512](file:///C:\Data\3GPP\Extracts\._R2-2009512%20Analysis%20of%20Mobility%20Management%20with%20Earth%20Fixed%20and%20Earth%20Moving%20Beams_Cells%20in%20NTN%20Networks.docx) Analysis of mobility management solutions with earth fixed and earth moving beams/cells in NTN networks Apple discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009773](file:///C:\Data\3GPP\Extracts\R2-2009773%20On%20Feeder%20Link%20Mobility%20in%20Transparent%20Satellite%20Payload%20Scenarios.docx) On Feeder Link Mobility in Transparent Satellite Payload Scenarios Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009805](file:///C:\Data\3GPP\Extracts\R2-2009805_Tracking%20area%20management%20for%20earth%20moving%20cells.docx) Tracking area management for earth moving cells ZTE corporation, Sanechips discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009823](file:///C:\Data\3GPP\Extracts\R2-2009823%20NTN%20Fixed%20Moving%20Beams.docx) Aspects for Earth fixed and Earth moving beams for NTN Ericsson discussion NR\_NTN\_solutions-Core

[R2-2009977](file:///C:\Data\3GPP\Extracts\R2-2009977_Mobility%20scenarios%20of%20Earth%20fixed-moving%20beams.docx) Mobility scenarios of Earth fixed/moving beams NEC Telecom MODUS Ltd. discussion

[R2-2009980](file:///C:\Data\3GPP\Extracts\R2-2009980_TAI%20update%20for%20earth%20moving%20cell.docx) TAI update for earth moving cell NEC Telecom MODUS Ltd. discussion

[R2-2010261](file:///C:\Data\3GPP\Extracts\R2-2010261%20Discussion%20on%20soft%20feeder%20link%20switch.doc) Discussion on soft feeder link switch Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010447](file:///C:\Data\3GPP\Extracts\R2-2010447_Discussion%20on%20service%20link%20feeder%20link%20switch%20in%20NTN.doc) Discussion on service link/feeder link switch in NTN Xiaomi Communications discussion

[R2-2010452](file:///C:\Data\3GPP\Extracts\R2-2010452%20(R17%20NTN%20WI%20AI%208.10.3.1%20Feeder%20link%20switch).docx) Feeder-link switch InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

Withdrawn

R2-2010480 Tracking area management for earth moving cells ZTE corporation, Sanechips discussion Rel-17 NR\_NTN\_solutions-Core Withdrawn

#### 8.10.3.2 Idle Inactive mode

Idle/inactive mode specific issues.

Including cell selection/reselection & system information.

[R2-2009774](file:///C:\Data\3GPP\Extracts\R2-2009774%20IDLE%20mode%20aspects%20for%20Non-Terrestrial%20Networks%20(NTN).docx) IDLE mode aspects for Non-Terrestrial Networks (NTN) Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

Proposal 1: RAN2 is asked to discuss what implicit means can be used to make the UE aware of network type. RAN2 may consider e.g. PLMN ID or the existence of NTN SIB in SI scheduling information.

Proposal 2: RAN2 does not define any explicit NTN scenario indication. Instead satellite ephemeris or Koffset can be considered to make the UE aware of the associated NTN scenario.

Proposal 3: RAN2 is asked to consider two groups of ephemeris elements: satellite-specific and orbit-common. The latter is not provided multiple times for satellites in the same orbit.

Observation 2: Single satellite’s ephemeris can consume 56 bytes while the NR System Information Block size is constrained to 372 bytes.

Proposal 4: RAN2 shall consider other means than SIB segmentation to address the excessive size of satellite ephemeris which needs to be broadcasted in NTN cells.

Proposal 5: RAN2 is asked to consider which elements of the ephemeris could be preconfigured to the UE, to avoid the Uu interface signalling overload.

Proposal 6: RAN2 is asked to conclude the existing cell reselection prioritization is sufficient for NTN Rel-17.

[R2-2008984](file:///C:\Data\3GPP\Extracts\R2-2008984.docx) Idle mode operation in NTN Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

Proposal 1: RAN2 to discuss the options below for cell selection and reselection for NTN.

• Option 1: UE performs cell selection and reselection procedure based on satellite/HAPS ephemeris information and its own location (e.g. distance between the UE and satellite).

• Option 2: UE performs cell selection and reselection procedure based on measurement of satellite but the measurement requirement can be based on the distance between UE and the satellite.

• Option 3: It is up to UE implementation how to use the satellite/HAPS ephemeris information for cell selection and reselection.

[R2-2008814](file:///C:\Data\3GPP\Extracts\R2-2008814%20Consideration%20on%20idle%20mode%20issues%20in%20NTN.docx) Consideration on idle mode issues in NTN CAICT discussion

[R2-2008837](file:///C:\Data\3GPP\Extracts\R2-2008837.docx) Remaining Issues of IDLE and Inactive Mode for NTN CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2008897](file:///C:\Data\3GPP\Extracts\R2-2008897_Cell-Reselection_NR-NTN_v2.0.docx) On Cell Re-selection in NR-NTN MediaTek Inc. discussion

[R2-2008898](file:///C:\Data\3GPP\Extracts\R2-2008898_TAU_NR-NTN_v2.0.docx) Improving Tracking Area Updates in NR-NTN MediaTek Inc. discussion

[R2-2008915](file:///C:\Data\3GPP\Extracts\R2-2008915_For8.10.3.2_IdleInactiveMode_ObservationsProposals_Samsung.doc) Idle and Inactive Mode Aspects for an NTN- Observations and Proposals Samsung Research America discussion

[R2-2009111](file:///C:\Data\3GPP\Extracts\R2-2009111%20NTN%20Idle%20inactive%20mode%20procedures.doc) Discussion on idle/inactive mode procedures in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009120](file:///C:\Data\3GPP\Extracts\R2-2009120%20Fixed%20Tracking%20Area%20and%20the%20Tracking%20Area%20Code%20in%20NTN.docx) Fixed Tracking Area and the Tracking Area Code in NTN PANASONIC R&D Center Germany discussion [R2-2006821](file:///C:\Data\3GPP\archive\RAN2\RAN2%23111\Tdocs\R2-2006821.zip)

[R2-2009142](file:///C:\Data\3GPP\Extracts\R2-2009142.doc) Discussion on Mobility Spreadtrum Communications discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009255](file:///C:\Data\3GPP\Extracts\R2-2009255%20Idle%20mode%20procedures%20in%20NR%20NTN.doc) Idle mode procedures in NR NTN THALES discussion Rel-17

[R2-2009454](file:///C:\Data\3GPP\Extracts\R2-2009454.doc) Cell selection and reselection enhancements Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009510](file:///C:\Data\3GPP\Extracts\._R2-2009510%20Cell%20Selection%20And%20Reselection%20Solutions%20for%20NTN%20Networks.docx) Cell Selection and Reselection solutions for NTN networks Apple discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009597](file:///C:\Data\3GPP\Extracts\R2-2009597_Control%20plane%20for%20idle%20mode%20UE%20.doc) Control Plane for Idle mode UE Xiaomi discussion Rel-17

[R2-2009621](file:///C:\Data\3GPP\Extracts\R2-2009621_Enhancements%20on%20cell%20reselection.doc) Enhancements on cell reselection Xiaomi discussion Rel-17

[R2-2009637](file:///C:\Data\3GPP\Extracts\R2-2009637%20Discussion%20on%20RRC_IDLE%20mode%20issues%20in%20NTN.DOC) Discussion on RRC\_IDLE mode issues in NTN Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009645](file:///C:\Data\3GPP\Extracts\R2-2009645_NTN_ephemeris.doc) Ephemeris data to be included in system information ITRI discussion NR\_NTN\_solutions-Core

[R2-2009648](file:///C:\Data\3GPP\Extracts\R2-2009648_The%20consideration%20of%20satellite%20ephemeris%20in%20NTN.docx) The consideration of satellite ephemeris in NTN China Telecom discussion

[R2-2009818](file:///C:\Data\3GPP\Extracts\R2-2009818%20NTN%20Idle%20mode.docx) Idle mode aspects for NTN Ericsson LM discussion NR\_NTN\_solutions-Core

[R2-2009862](file:///C:\Data\3GPP\Extracts\R2-2009862%20Ephemeris%20data%20provision%20in%20NTN%20(Revision%20of%20R2-2007473).docx) Ephemeris data provision in NTN Lenovo, Motorola Mobility discussion Rel-17

[R2-2009894](file:///C:\Data\3GPP\Extracts\R2-2009894.doc) Idle mode aspects in NTN Sony discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010094](file:///C:\Data\3GPP\Extracts\R2-2010094%20Earth%20moving%20beam%20scenarios%20in%20Earth%20fixed%20tracking%20areas.docx) Earth moving beam scenarios in Earth fixed tracking areas ETRI discussion Rel-17 NR\_NTN\_solutions

[R2-2010260](file:///C:\Data\3GPP\Extracts\R2-2010260%20Considerations%20on%20satellite%20ephemeris.doc) Considerations on satellite ephemeris Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010370](file:///C:\Data\3GPP\Extracts\R2-2010370%20Discussion%20of%20UE%20location%20information%20assistant%20for%20cell%20selection%20and%20reselection%20in%20NTN.docx) Discussion of UE location information assistant for cell selection and reselection in NTN CMCC discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010453](file:///C:\Data\3GPP\Extracts\R2-2010453%20(R17%20NTN%20WI%20AI%208.10.3.2%20Ephemeris).docx) Satellite ephemeris in NTN InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010578](file:///C:\Data\3GPP\Extracts\R2-2010578%20Idle%20mode%20issues%20in%20NR%20NTN.DOC) Idle mode issues in NR NTN LG Electronics Inc. discussion Rel-17 NR\_NTN\_solutions-Core

#### 8.10.3.3 Connected mode

Connected mode specific issues.

Including the outcome of Post111-e][911[NTN] Connected mode aspects

[R2-2009803](file:///C:\Data\3GPP\Extracts\R2-2009803_Report%20of%20%5bPost111-e%5d%20%5b911%5d%20%5bNTN%5d%20Connected%20mode%20aspects%20(ZTE).doc) Report of [Post111-e] [911] [NTN] Connected mode aspects (ZTE) ZTE corporation, Sanechips discussion Rel-17 NR\_NTN\_solutions-Core

List of agreeable proposals

Proposal 1: Reconfiguration with sync shall be used for connected mode mobility (at least) for the following scenarios (the use of legacy RLF and re-establishment mechanism are not excluded):

Scenario 4: Connected mode mobility for earth moving cell when the cell no longer serves the UE

Scenario 5: Connected mode mobility for both earth moving and earth fixed cell due to UE movement

Proposal 2.1: The CHO can be used in NTN for both moving cell and fixed cell scenarios, and the CHO procedure and execution condition defined in Rel-16 shall be considered as baseline.

Proposal 2.2: NTN specific CHO execution condition should be introduced.

Proposal 2.3a: location based CHO execution condition should be introduced for both moving cell and fixed cell scenario.

* Mediatek/Nokia do not agree on this. Nokia thinks we cannot rely purely on UE location.

Proposal 4: The existing measurement framework (e.g. measurement configuration, execution and reporting) shall be considered as a baseline, and all the existing measurement criteria and event can be used in NTN.

Proposal 5.1: Permission from UE is needed for the network to collect the UE location information for the purpose other than SON/MDT. If the UE location information is collected for other purpose, the UE consent for SON/MDT cannot be reused and a similar but independent procedure for permission should be considered.

Proposal 6.1: The Location-based measurement event should be supported in NTN for both moving cell and fixed cell scenario.

Proposal 7.1: Some enhancement is needed in SMTC and measurement gap configuration, taken into consideration the propagation delay difference in NTN.

Proposal 7.2: SSB period other than 5ms shall be supported in NTN.

Agreements

1. Reconfiguration with sync is the baseline for connected mode mobility in NTN (the use of legacy RLF and re-establishment mechanism are not excluded)
2. The CHO can be used in NTN for both moving cell and fixed cell scenarios, and the CHO procedure and execution condition defined in Rel-16 is the baseline for NTN CHO.

3. NTN specific CHO execution condition can be further discussed.

4. The existing measurement framework (e.g. measurement configuration, execution and reporting) is the baseline, and all the existing measurement criteria and event can be used in NTN. Support for new measurement is not excluded.

5. Legacy SSB periods (as in TN) shall be supported in NTN

List of proposals to be discussed

Proposal 2.3b: Timer based CHO execution condition should be introduced for moving cell scenario.

Proposal 3.1: From RAN2’s perspective, RACH-less HO should be introduced in NTN. An LS should be sent to RAN1 to confirm the feasibility of RACH-less HO in NTN.

Proposal 3.2a: DAPS HO for NTN is de-prioritized in this release.

Proposal 5.2: The location information report should be supported in NTN for the purpose other than SON/MDT.

Proposal 6.2a: For moving cell scenario, a relative area scope expressed as the distance between UE and satellite or cell center will be configured and measurement report will be triggered when UE moves out of or moves in the area scope configured.

Proposal 6.2b: For fixed cell scenario, an absolute area scope will be configured and measurement report will be triggered when UE moves out of or moves in the area scope configured.

* [AT112-e][105][NTN] RRC aspects (ZTE)

Scope: Discuss remaining proposals from [R2-2009803](file:///C:\Data\3GPP\Extracts\R2-2009803_Report%20of%20%5bPost111-e%5d%20%5b911%5d%20%5bNTN%5d%20Connected%20mode%20aspects%20(ZTE).doc)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Monday 2020-11-09 17:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010767](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010767.zip)): Tuesday 2020-11-10 01:00 UTC

Updated Scope: Discuss remaining proposals from [R2-2010767](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010767.zip) (p2.1, p3.1, p3.2)

Updated Intended outcome: summary of the offline discussion in R2-2010794 with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Thursday 2020-11-12 10:00 UTC

Initial deadline (for rapporteur's summary): Thursday 2020-11-12 16:00 UTC

Proposals marked "for agreement" in R2-2010794 not challenged until Friday 2020-11-13 04:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue online.

[R2-2010767](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010767.zip) Summary of offline 105 - RRC aspects ZTE Corporation discussion Rel-17 NR\_NTN\_solutions-Core

Proposals for agreement

Proposal 1.1: Location based CHO triggering event, in combination with the existing R16 CHO measurement based event, should be introduced for both moving cell and fixed cell scenario. FFS on how to configure the location based CHO triggering event.

* Regarding P1.1 and P4 Nokia thinks this kind of separation is a bit artificial, as if we follow the existing measurement framework then agreeing to have a CHO triggered based on measurements + location (P1.1) will implicitly mean there is such event defined (P4 is fulfilled). So maybe we should decide in general to introduce a measurement event (location + meas. results) and then to possibly use it also for CHO execution in NTN
* Continue online (e.g. to check whether p1.1 and p4 should be merged somehow)
* Samsung wonders whether 1.1 and 4 apply to normal HO as well. Nokia thinks 1.1 is about triggers for CHO so it's not directly applicable.
* Agreed

Proposal 1.2: Time or timer based CHO triggering event, in combination with the existing R16 CHO measurement based event, should be introduced for both moving cell and fixed cell scenario. FFS on how to configure the time or timer based CHO triggering event.

* Agreed

Proposal 2.2: DAPS HO for NTN is de-prioritized in this release.

* Agreed

Proposal 3.1: Permission from UE is needed for the network to collect the UE location information for the purpose other than SON/MDT. If the UE location information is collected for other purpose, the UE consent for SON/MDT cannot be reused and a similar but independent procedure for permission should be considered.

* Ericsson and Sony think this still needs further discussion
* Continue online

Proposal 4: The Location-based measurement event, in combination with the existing measurement event in NR, should be supported in NTN for both moving cell and fixed cell scenarios. FFS on how to configure the location based measurement event.

* Continue online (e.g. to check whether p1.1 and p4 should be merged somehow)
* Agreed

Proposals for online discussion

Proposal 2.1: RACH-less HO for NTN is de-prioritized in this release.

Proposal 3.2: The UE location information report should be supported in NTN for the purpose other than SON/MDT.

Agreements via email - offline 105:

1. Time or timer based CHO triggering event, in combination with the existing R16 CHO measurement based event, should be introduced for both moving cell and fixed cell scenario. FFS on how to configure the time or timer based CHO triggering event. Also FFS how to consider the feeder/service link switch timing.
2. DAPS HO for NTN is de-prioritized in this release.
3. Location based CHO triggering event, in combination with the existing R16 CHO measurement based event, should be introduced for both moving cell and fixed cell scenario. FFS on how to configure the location based CHO triggering event. FFS if location based CHO triggering event only (not in combination with other events) can also be considered.
4. The Location-based measurement event, in combination with the existing measurement event in NR, should be supported in NTN for both moving cell and fixed cell scenarios. FFS on how to configure the location based measurement event.

R2-2010794 Summary of offline 105 - RRC aspects - second round ZTE Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009859](file:///C:\Data\3GPP\Extracts\R2-2009859%20Conditional%20handover%20in%20NTN%20v1.0.doc) Conditional handover in NTN Lenovo, Motorola Mobility discussion Rel-17

Proposal 3: Independent location-based trigger condition should be supported as the execution condition for NTN CHO.

Proposal 4: Independent UTC time (or timer-based) trigger condition should be supported as the execution condition for NTN CHO.

Proposal 5: TA-based trigger condition is not supported for NTN CHO.

Proposal 6: Elevation angles-based trigger condition is not supported for NTN CHO.

Proposal 7: RAN2 should discuss whether the ‘OR’ association between two conditions can be supported for NTN CHO or not. The potential combinations are listed as follows:

- Execution condition A: location-based trigger condition OR measurement-based trigger condition;

- Execution condition B: UTC time trigger condition OR measurement-based trigger condition

- Execution condition C: Timer-based trigger condition OR measurement-based trigger condition

Proposal 8: RAN2 should discuss whether the ‘AND’ association between two conditions can be supported for NTN CHO or not. The potential combinations are listed as follows:

- Execution condition D: location-based trigger condition AND measurement-based trigger condition;

- Execution condition E: UTC time trigger condition AND measurement-based trigger condition

- Execution condition F: Timer-based trigger condition AND measurement-based trigger condition

[R2-2008834](file:///C:\Data\3GPP\Extracts\R2-2008834%20Open%20Issues%20for%20Measurements%20in%20NTN.docx) Open Issues for Measurements in NTN CATT discussion Rel-17 NR\_NTN\_solutions-Core

Proposal 6: For SMTC configuration in NTN, the following potential solutions can be considered:

Alt.1: Extend the measurement window to cover all the possible SSB period in NTN, in which case the configuration of SMTC is not needed.

Alt.2: Reuse current signaling for SMTC configuration. The timing of configured SMTC refer to the timing on satellites of PCell or on NTN GW of PCell (assuming that the SMTC is the same on satellite or on NTN GW for intra-frequency NTN cells), and it is up to UE to derive the real timing on UE side (e.g. take the transmission delay into account)

Alt.3: Extend the SMTC configuration based on the max propagation delay difference between serving and neighbour satellite to avoid UE missing the SSB burst of neighbour satellites.

Alt.4: NW provides SMTC configuration for each neighbour cell with different offset value, while taking different transmission delay into account. The timing of SMTC refers to the timing of PCell at UE side.

Proposal 7: For measurement gap configuration in NTN, the following potential solutions can be considered:

Alt.1: Extend the length of the measurement gap to ensure that the length is larger than or equal to the SSB periodicity.

Alt.2: Reuse the current signaling for measurement gap configuration (i.e. configure measurement gap per frequency), and the timing of measurement gap configured refer to the timing on satellites or on NTN GW. With the configured measurement gap, it is up to UE/NW to derive the measurement gap on UE side based on its location and the ephemeris of candidate satellites. Since the real timing of SMTC window on UE side for cells in other satellites will change from time to time based on the movement of satellites, the NW need to derive the real timing of measurement gap on UE side based the location of UE and the ephemeris of candidate satellites. Note: In this alternative, the measurement gap is maintained per satellite.

Alt.3: Configure multiple measurement gaps per frequency and the timing of measurement gap configured refer to the timing of PCell on UE side.

Alt 4: Extend the length of the measurement gap based on the max propagation delay difference between serving and neighbor satellite to avoid UE missing the SSB burst of neighbor satellites.

[R2-2009456](file:///C:\Data\3GPP\Extracts\R2-2009456.doc) SMTC and measurement gap configuration Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

Proposal 1 Send a LS to RAN4 asking feedback on RRM requirements in NTN considering SMTC and measurement miss-alignment issue due to large differential propagation delay.

Proposal 2 If needed, network provides a list of cells that need +/- offset to the SMTC

* [AT112-e][106][NTN] SMTC and gaps (CATT)

Scope: Discuss p6 and p7 in [R2-2008834](file:///C:\Data\3GPP\Extracts\R2-2008834%20Open%20Issues%20for%20Measurements%20in%20NTN.docx) and proposals in [R2-2009456](file:///C:\Data\3GPP\Extracts\R2-2009456.doc)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Monday 2020-11-09 17:00 UTC

Initial deadline (for rapporteur's summary in [R2-2010768](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010768.zip)): Tuesday 2020-11-10 01:00 UTC

Updated Scope: Discuss remaining proposals from [R2-2010768](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010768.zip)

Updated Intended outcome: summary of the offline discussion in R2-2010795 with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Thursday 2020-11-12 17:00 UTC

Initial deadline (for rapporteur's summary): Friday 2020-11-13 02:00 UTC

Proposals marked "for agreement" in R2-2010795 not challenged until Friday 2020-11-13 04:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue online.

[R2-2010768](file:///C:\Data\3GPP\RAN2\Inbox\R2-2010768.zip) Summary of offline 106 - SMTC and gaps CATT discussion Rel-17 NR\_NTN\_solutions-Core

List of agreeable proposals

Proposal 1: SMTC and gap configuration in NTN are configured based on the timing of PCell (23/0).

* ZTE suggests to add "From network's perspective," in front
* Continue online

Proposal 3: RAN2 understanding that UE shall not be forced to detect the SSB burst outside the corresponding configured SMTC window in NTN, just like the principle in TN (20/2).

* Agreed

Proposal 5: UE along with the network in NTN should also have a consistent understanding of the measurement gap to avoid any un-synchronized behaviour between UE and the network, just like the way we have in TN (22/0).

* ZTE suggests to add "(the use of autonomous gap is not excluded) " at the end
* Continue online

List of proposals to be discussed

Proposal 2-1: RAN2 understanding that the impact on SMTC configuration due to delay difference between satellites should be addressed in NTN. FFS：whether any enhancement for SMTC configuration is needed in NTN.

Proposal 2-2: RAN2 can first identify the scenarios and discuss how serious the impact is before addressing any enhancement for SMTC configuration in NTN.

Proposal 4: RAN2 can’t assume that the network will always have UE accurate location info for SMTC window configuration in NTN (19/5).

Agreements via email - offline 106:

1. RAN2 understanding that UE shall not be forced to detect the SSB burst outside the corresponding configured SMTC window in NTN, just like the principle in TN.

R2-2010795 Summary of offline 106 - SMTC and gaps - second round CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2008833](file:///C:\Data\3GPP\Extracts\R2-2008833%20Feeder%20Link%20Switch.docx) Feeder Link Switch CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2008835](file:///C:\Data\3GPP\Extracts\R2-2008835%20Discussion%20on%20UE-based%20location%20requirement%20in%20NR%20NTN.docx) Discussion on UE-based location requirement in NR NTN CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2008916](file:///C:\Data\3GPP\Extracts\R2-2008916_For8.10.3.3_ConnectedMode_ObservationsProposals_Samsung.doc) Connected Mode Aspects for an NTN- Observations and Proposals Samsung Research America discussion

[R2-2008973](file:///C:\Data\3GPP\Extracts\R2-2008973%20Service%20Continuity%20between%20NTN%20and%20TN%20.docx) Service continuity between NTN and TN HUGHES Network Systems Ltd, Thales, BT, Turkcell, Vodafone discussion Rel-17 38.821

[R2-2008981](file:///C:\Data\3GPP\Extracts\R2-2008981.docx) Feeder link switch over for NTN Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2008982](file:///C:\Data\3GPP\Extracts\R2-2008982.docx) Mobility enhancement for NTN Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009112](file:///C:\Data\3GPP\Extracts\R2-2009112%20NTN%20connected%20mode%20mobility.doc) Discussion on mobility management for connected mode UE in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009121](file:///C:\Data\3GPP\Extracts\R2-2009121%20Overhead%20Reduction%20for%20the%20Handover%20Procedure%20in%20NTN.docx) Overhead Reduction for the Handover Procedure in NTN PANASONIC R&D Center Germany discussion [R2-2006822](file:///C:\Data\3GPP\archive\RAN2\RAN2%23111\Tdocs\R2-2006822.zip)

[R2-2009443](file:///C:\Data\3GPP\Extracts\R2-2009443%20Measurement%20window%20enhancements.doc) Measurement window enhancements LG Electronics Inc. discussion

[R2-2009455](file:///C:\Data\3GPP\Extracts\R2-2009455.doc) Configuration and triggering of CHO Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009513](file:///C:\Data\3GPP\Extracts\._R2-2009513%20Analysis%20of%20Proposed%20Conditional%20Handover%20Solutions%20for%20NTN%20Networks.docx) Analysis of proposed conditional handover solutions for NTN Networks Apple discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009772](file:///C:\Data\3GPP\Extracts\R2-2009772%20Simulation%20assumptions%20for%20evaluating%20NTN%20mobility.docx) Simulation assumptions for evaluating NTN mobility Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core [R2-2007363](file:///C:\Data\3GPP\archive\RAN2\RAN2%23111\Tdocs\R2-2007363.zip)

[R2-2009804](file:///C:\Data\3GPP\Extracts\R2-2009804_Consideration%20on%20the%20measurement%20configuration%20and%20reporting%20in%20NTN.docx) Consideration on the measurement configuration and reporting in NTN ZTE corporation, Sanechips discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2009821](file:///C:\Data\3GPP\Extracts\R2-2009821%20NTN%20connected%20mode.docx) Connected mode aspects for NTN Ericsson discussion

[R2-2009863](file:///C:\Data\3GPP\Extracts\R2-2009863%20Considerations%20on%20measurements%20in%20NTN.docx) Considerations on measurements in NTN Lenovo, Motorola Mobility discussion Rel-17

[R2-2009896](file:///C:\Data\3GPP\Extracts\R2-2009896.doc) Mobility management in NTN Sony discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010262](file:///C:\Data\3GPP\Extracts\R2-2010262%20Discussion%20on%20enhancements%20for%20connected%20mode%20in%20NTN.DOC) Discussion on enhancements for connected mode in NTN Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010371](file:///C:\Data\3GPP\Extracts\R2-2010371%20Discussion%20of%20mobility%20enhancements%20for%20NTN.docx) Discussion of mobility enhancements for NTN CMCC discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2010446](file:///C:\Data\3GPP\Extracts\R2-2010446_Discussion%20on%20mobility%20management%20in%20NTN.doc) Discussion on mobility management in NTN Xiaomi Communications discussion

[R2-2010454](file:///C:\Data\3GPP\Extracts\R2-2010454%20(R17%20NTN%20WI%20AI%208.10.3.3%20Mobility).docx) Connected mode mobility in NTN InterDigital discussion Rel-17 NR\_NTN\_solutions-Core [R2-2007618](file:///C:\Data\3GPP\archive\RAN2\RAN2%23111\Tdocs\R2-2007618.zip)

[R2-2010579](file:///C:\Data\3GPP\Extracts\R2-2010579%20New%20triggering%20condition%20for%20CHO%20in%20NTN.DOC) New triggering condition for CHO in NTN LG Electronics Inc. discussion Rel-17 NR\_NTN\_solutions-Core

Withdrawn

R2-2010478 Report of [Post111-e] [911] [NTN] Connected mode aspects (ZTE) ZTE corporation, Sanechips discussion Rel-17 NR\_NTN\_solutions-Core Withdrawn

R2-2010479 Consideration on the measurement configuration and reporting in NTN ZTE corporation, Sanechips discussion Rel-17 NR\_NTN\_solutions-Core Withdrawn

## 8.12 Reduced Capability SI

(FS\_NR\_redcap; leading WG: RAN1; REL-17; WID: [RP-201386](file:///C:\Data\3GPP\archive\RAN\RAN%2388\Tdocs\RP-201386.zip))

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

Email max expectation: 3 threads

### 8.12.1 Organizational

Rapporteur inputs and other organizational documents. Documents in this AI do not count towards the tdoc limitation.

Including outcome of [Post111-e][912][REDCAP] TP for the TR

[R2-2009615](file:///C:\Data\3GPP\Extracts\R2-2009615%20-%20Way%20forward%20for%20RedCap%20in%20RAN2.docx) Way forward for RedCap in RAN2 Ericsson discussion FS\_NR\_redcap

Proposal 1 Prioritize listing of potential solutions to the open issues in the TR. TR should capture feasibility, pros and cons and specification impact of the different solutions.

* Noted

[R2-2009617](file:///C:\Data\3GPP\Extracts\R2-2009617%20-%20Report%20of%20%5b912%5d%20TP%20for%20the%20TR.docx) Summary of [Post111-e][912][RedCap] TP for TR Ericsson report FS\_NR\_redcap

Proposal 1 Endorse the TR revision in R2-2009616.

* Xiaomi wonders about the text for eDRX. VC: This can be further checked when discussing the TP. Apple thinks we don't even need the first paragraph (which is related to LTE).
* Endorsed (further changes to the content in the initial TR are of course possible)

Proposal 2 Use the power consumption model in TR 38.840, taking the latest RAN1 agreements into account, as the baseline for the power consumption analysis of eDRX and RRM relaxation.

* QC is fine with p2. Vivo as well, as this was also discussed in RAN1
* Agreed

Proposal 3 Capture power consumption analysis of eDRX in RRC\_IDLE and RRC\_INACTIVE and of alternatives for RRM relaxation in the TR.

* QC wonders what "capture" means here: are we expected to provide simulation results for power consumption? Ericsson thinks that at least companies are allowed to bring evaluations. Whether this goes in an Annex can be discussed.
* Vivo supports p3
* LGE is fine with p2 and p3, but if we don't support longer eDRX for Inactive there is probably not much to do. Ericsson clarifies this is also about RRM relaxation
* Power saving simulations results can be included case by case based on discussion
* Power consumption analysis can be put in an Annex of the TR

[R2-2009616](file:///C:\Data\3GPP\Extracts\R2-2009616%20TR%2038875%20update.docx) TR38875 update Ericsson discussion FS\_NR\_redcap

* Endorsed as a baseline. Further RAN2 TP will be based on v0.0.3 provide d by RAN1 and taking the content of [R2-2009616](file:///C:\Data\3GPP\Extracts\R2-2009616%20TR%2038875%20update.docx) into account.
* [AT112-e][111][REDCAP] TP drafting for the TR (Ericsson)

Scope: draft a TP based on meeting agreements

Intended outcome: Endorsed TP

Deadline (for companies' feedback): Friday 2020-11-13 02:00 UTC

Deadline (for rapporteur's summary in R2-2010784): Friday 2020-11-13 10:00 UTC

R2-2010784 TP for TR38875 Ericsson discussion FS\_NR\_redcap

### 8.12.2 Framework for reduced capabilities

#### 8.12.2.1 Principles for how to define and constrain reduced capabilities

Including outcome of [Post111-e][913][REDCAP] Definition and constraining of reduced capabilities

[R2-2009004](file:///C:\Data\3GPP\Extracts\R2-2009004%20Report%20of%20913-RedCap-Capabilities.docx) Report of [POST111e][913][REDCAP] Definition and constraining of reduced capabilities (Intel) Intel Corporation discussion Rel-17 FS\_NR\_redcap

Proposal 1: RedCap UE capabilities can be categorized as:

* Min capabilities all RedCap UEs support (i.e. mandatory for RedCap UE) if identified;

o FFS on whether some features are mandatory with signaling for RedCap UE, i.e. IOT bit;

o It is up to RAN1 on the number of RedCap UE types and whether different RedCap type UEs may support different value for mandatory features;

* Optional capabilities (signaled explicitly)

Proposal 2: Following scenarios are considered when design the capability signaling for RedCap UE, but FFS on the details, e.g. what each category of features may include:

For the features that are mandatory for non-Redcap UEs, following scenarios are considered:

Case1: The Redcap UE mandatorily supports the feature with the same value;

Case2: The Redcap UE mandatorily supports the feature, but with different value (e.g. bandwidth value);

Case3: The Redcap UE optionally supports the feature;

Case4: The Redcap UE does not support the feature at all.

For the features that are optional for non-Redcap UEs, following scenario is considered:

Case1: The Redcap UE does not support the feature at all.

Case 2: The RedCap UE supports the feature with different value;

Proposal 3: Following capability design principle is considered for RedCap UE, but details should be discussed in WI phase:

* The UE capability requirements for a RedCap device type, that are different from those for non-RedCap UEs, are listed in the specifications. That is:

o Mandatory features for non-RedCap UE that are not supported for RedCap UE;

o Mandatory features for non-RedCap UE that are optional for RedCap UE;

o Mandatory features for non-RedCap UE that are supported for RedCap UE but with different value;

o Optional features for non-RedCap UE that are not supported for RedCap UE;

o Optional features for non-RedCap UE that are mandatorily supported for RedCap UE.

For a RedCap device type, define new signaling fields in UE Capability for the features that are mandatory w/o capability signaling for non-RedCap UEs but are optional for Redcap UEs, or mandatory with capability signaling for non-RedCap UEs but with different value for RedCap UEs.

Proposal 4: Regarding how can the network know whether the UE is RedCap UE or not in order to handle UE capabilities properly, following options are considered and to be captured in the TR, the further analysis/down selection should be done in WI phase:

Option 1: RedCap device type is indicated as part of the capability signaling

Option 2: Define a new IE specifically for RedCap Ues containing these additional Redcap specific capabilities that is included only by Redcap UEs.

Option 3: The network obtains the RedCap based on identification solution during initial access, and forwards it to target during Handover.

Proposal 5: Regarding how to ensure the RedCap UE is only used for intended use cases, following potential solutions are considered in the SI phase (other solutions are not precluded), and to be captured in the TR. The decision should be made in WI phase.

* Option 1:

One potential problem could be when a RedCap UE requests a service that does not match the RedCap UE type. This would be similar to if e.g. an NB-IoT UE requested a video call to be set up. RAN can already reject an RRC connection establishment attempt e.g. based on the establishment cause provided in Msg3 or through higher layer mechanisms.

RAN can reject an RRC connection establishment attempt for a RedCap UE if the service the UE requested is not allowed for the RedCap UE. That is, the RAN needs to identify whether the UE is a RedCap UE or not, and be aware of the requested service, e.g. based on the cause value or other ways.

* Option 2: subscription validation

During RRC connection setup, UE indicates it is a RedCap UE to core network, e.g.

• UE includes this indication in its NAS signaling message to core network; or

• UE informs this indication during its RRC connection establishment procedure to RAN; RAN then informs core network of UE’s RedCap type in its Initial UE Context message to core network.

After network receives UE’s RedCap indication, it validates UE’s indication against its subscription plan, which includes information such as the set of services allowed for the UE. Based on the outcome of this validation, network then decide whether to accept or reject UE’s registration request. For example, network may reject UE if UE indicates RedCap but its subscription does not include any RedCap-specific services.

* Option 3. Verification of RedCap UE

Network can additionally perform capability match procedure between UE’s reported radio capabilities and the set of capability criteria associated with UE’s RedCap type, to prevent a hacked or misconfigured UE from falsely reporting as a RedCap UE.

Agreements:

1. RedCap UE capabilities can be categorized as:

• Min capabilities all RedCap UEs support (i.e. mandatory for RedCap UE) if identified;

o FFS on whether some features are mandatory with signaling for RedCap UE, i.e. IOT bit;

o (Note: RedCap UEs might have the same set of higher layer capabilities, however this is FFS in RAN2)

• Optional capabilities (signaled explicitly)

1. Following scenarios are considered when design the capability signaling for RedCap UE, but FFS on the details, e.g. what each category of features may include and on the applicability of the cases:

For the features that are mandatory for non-Redcap UEs:

Case1: The Redcap UE mandatorily supports the feature with the same value;

Case2: The Redcap UE mandatorily supports the feature, but with different value (e.g. bandwidth value);

Case3: The Redcap UE optionally supports the feature;

Case4: The Redcap UE does not support the feature at all.

For the features that are optional for non-Redcap UEs:

Case1: The Redcap UE does not support the feature at all.

Case2: The Redcap UE supports the feature with different value;

Case3: The Redcap UE supports the feature with the same value;

Case4: The Redcap UE mandatorily supports the feature

* [AT112-e][112][REDCAP] Capabilities (Intel)

Scope: Continue the discussion on remaining proposals from [R2-2009004](file:///C:\Data\3GPP\Extracts\R2-2009004%20Report%20of%20913-RedCap-Capabilities.docx)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Initial deadline (for rapporteur's summary in R2-2010785): Wednesday 2020-11-10 03:00 UTC

Proposals marked "for agreement" in R2-2010785 not challenged until Wednesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair and can be considered for inclusion in the TP for the TR. For the rest the discussion might continue online in the CB online session on Wednesday.

R2-2010785 Summary of offline 112 - RedCap capabilities Intel Corporation discussion Rel-17 FS\_NR\_redcap

[R2-2008889](file:///C:\Data\3GPP\Extracts\R2-2008889_Define%20and%20constrain%20RedCap%20UEs_v1.docx) Define and constrain RedCap UEs Qualcomm Incorporated discussion Rel-17 FS\_NR\_redcap

[R2-2008951](file:///C:\Data\3GPP\Extracts\R2-2008951%20General%20views%20on%20Higher-layer%20impacts%20for%20Redcap%20devices.doc) General views on Higher-layer impacts for Redcap devices Xiaomi Communications discussion

[R2-2009008](file:///C:\Data\3GPP\Extracts\R2-2009008_Device%20type%20definition%20and%20how%20to%20signal%20the%20device%20type%20to%20network.doc) Device type definition and how to signal the device type to network Fujitsu discussion Rel-17 FS\_NR\_redcap

[R2-2009085](file:///C:\Data\3GPP\Extracts\R2-2009085_UE%20type%20definition%20and%20constraining%20for%20RedCap%20UEs.doc) UE type defination and constraining for RedCap UEs vivo, Guangdong Genius discussion Rel-17 FS\_NR\_redcap

[R2-2009104](file:///C:\Data\3GPP\Extracts\R2-2009104%20-%20Discussion%20on%20definition%20of%20reduced%20capabilities.doc) Discussion on definition of reduced capabilities OPPO discussion Rel-17 FS\_NR\_redcap

[R2-2009115](file:///C:\Data\3GPP\Extracts\R2-2009115%20-%20On%20the%20definition%20of%20a%20RedCap%20device%20type.docx) On the definition of a RedCap device type MediaTek Inc. discussion Rel-17 FS\_NR\_redcap [R2-2007492](file:///C:\Data\3GPP\archive\RAN2\RAN2%23111\Tdocs\R2-2007492.zip)

[R2-2009248](file:///C:\Data\3GPP\Extracts\R2-2009248%20Consideration%20on%20definition%20and%20constraining%20of%20Reduced%20Capability.docx) Consideration on definition and constraining of Reduced Capability ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_redcap

[R2-2009361](file:///C:\Data\3GPP\Extracts\R2-2009361.doc) On Definition and Constraint of Reduced Capabilities CATT discussion Rel-17 FS\_NR\_redcap

[R2-2009618](file:///C:\Data\3GPP\Extracts\R2-2009618%20-%20Framework%20and%20principles%20for%20RedCap.docx) Framework and principles for RedCap Ericsson discussion FS\_NR\_redcap

[R2-2009762](file:///C:\Data\3GPP\Extracts\R2-2009762%20Discussion%20on%20how%20to%20define%20and%20constrain%20the%20REDCAP%20UE.doc) Discussion on how to define and constrain the REDCAP UE China Telecommunications discussion

[R2-2009933](file:///C:\Data\3GPP\Extracts\R2-2009933%20Capability%20framework%20and%20constraining%20of%20RedCap%20UE.doc) Capability framework and constraining of RedCap UE Huawei, HiSilicon discussion Rel-17 FS\_NR\_redcap

[R2-2009958](file:///C:\Data\3GPP\Extracts\R2-2009958_Discussion%20on%20how%20to%20ensure%20devices%20only%20access%20to%20intended%20services.docx) Discussion on how to ensure devices only access to intended services China Telecommunications discussion Rel-17

[R2-2010225](file:///C:\Data\3GPP\Extracts\R2-2010225%20Discussion%20on%20the%20intended%20use%20cases%20for%20RedCap%20UEs.doc) Discussion on the intended use cases for RedCap UEs LG Electronics UK discussion Rel-17

[R2-2010376](file:///C:\Data\3GPP\Extracts\R2-2010376.docx) Discussion on the definition and constraining of reduced capabilities CMCC discussion Rel-17 FS\_NR\_redcap

[R2-2010458](file:///C:\Data\3GPP\Extracts\R2-2010458%20(R17%20RedCap%20WI%20AI%208.12.2.1%20Device%20Type).docx) Reduced capability device type definition InterDigital discussion Rel-17 FS\_NR\_redcap

Withdrawn

R2-2009957 Discussion on how to ensure devices only access to intended services China Telecommunications discussion Rel-17 Late

#### 8.12.2.2 Identification and access restrictions

Including outcome of [Post111-e][914][REDCAP] UE identification and access restrictions

[R2-2009936](file:///C:\Data\3GPP\Extracts\R2-2009936%20Summary%20of%20email%20discussion%20%5b914%5d.docx) Summary of email discussion 914 on UE identification and access restrictions Huawei report Rel-17 FS\_NR\_redcap

Proposal 1: It is not needed from RAN2 perspective to identify RedCap UEs during Msg1.

Proposal 2: Whether it is needed to identify RedCap UEs during Msg3 from RAN2 perspective or not depends on the following two aspects:

- Whether Msg4/5 special handing for RedCap UE is needed, pending RAN1

- Whether there is a need to reject part of RedCap UEs in addition to cell barring and UAC mechanism.

Proposal 3: It is not needed from RAN2 perspective to identify RedCap UEs during Msg5.

Proposal 4: From RAN2 perspective, the need to identify RedCap UEs during MsgA is the same as the need to identify RedCap UEs during Msg1 or Msg3.

Proposal 5: Capture options Msg1/A and Msg3/A in the TR with the following clarification:

- From RAN2 perspective, it is not needed to identify RedCap UEs during Msg1.

- The final decision of solution selection is pending on RAN1 output.

Proposal 6: Do not send a LS on RedCap UE identification to RAN1 and wait for more RAN1 process.

Proposal 7: Send a LS to SA1 including the following contents:

- RAN2 motivation for UAC enhancement for RedCap UEs

- Ask SA1 whether they see any issue

Proposal 8: Postpone the discussion on the camping indicator for RedCap UEs to the WI phase.

Proposal 9: Postpone the discussion on intraFreqReselection indicator for RedCap UEs to the WI phase.

Agreements:

1. Whether it is needed to identify RedCap UEs during Msg3 from RAN2 perspective or not depends on the following two aspects:

- Whether Msg4/5 special handing for RedCap UE is needed, pending RAN1

- Whether there is a need to reject part of RedCap UEs in addition to cell barring and UAC mechanism

* [AT112-e][113][REDCAP] Identification and access restrictions (Huawei)

Scope: Continue the discussion on remaining proposals from [R2-2009936](file:///C:\Data\3GPP\Extracts\R2-2009936%20Summary%20of%20email%20discussion%20%5b914%5d.docx)

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Tuesday 2020-11-10 17:00 UTC

Initial deadline (for rapporteur's summary in R2-2010786): Wednesday 2020-11-10 03:00 UTC

Proposals marked "for agreement" in R2-2010786 not challenged until Wednesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair and can be considered for inclusion in the TP for the TR. For the rest the discussion might continue online in the CB online session on Wednesday.

R2-2010786 Summary of offline 113 - RedCap identification and access restrictions Huawei discussion Rel-17 FS\_NR\_redcap

[R2-2008890](file:///C:\Data\3GPP\Extracts\R2-2008890_Impact%20of%20reduced%20capabilities%20on%20idle%20mode%20procedures%20_v1.docx) Impact of reduced capabilities on idle mode procedures Qualcomm Incorporated discussion Rel-17 FS\_NR\_redcap

[R2-2008947](file:///C:\Data\3GPP\Extracts\R2-2008947%20Discussion%20on%20Identification%20and%20UE%20access%20restrictions%20for%20Redcap%20devices.doc) Discussion on Identification and UE access restrictions for Redcap devices Xiaomi Communications discussion

[R2-2008996](file:///C:\Data\3GPP\Extracts\R2-2008996.docx) Early identification of RedCap UEs Samsung discussion Rel-17 FS\_NR\_redcap

[R2-2009009](file:///C:\Data\3GPP\Extracts\R2-2009009%20Access%20restriction%20of%20RedCap%20UE.doc) Access restriction of RedCap UE Fujitsu discussion Rel-17 FS\_NR\_redcap

[R2-2009010](file:///C:\Data\3GPP\Extracts\R2-2009010%20UAC%20for%20RedCap%20UE.doc) UAC for RedCap UE Intel Corporation, Facebook discussion Rel-17 FS\_NR\_redcap

[R2-2009086](file:///C:\Data\3GPP\Extracts\R2-2009086%20Identification%20and%20Access%20Restrictions%20for%20RedCap%20UEs.docx) Identification and access restrictions for RedCap UEs vivo, Guangdong Genius discussion Rel-17 FS\_NR\_redcap

[R2-2009105](file:///C:\Data\3GPP\Extracts\R2-2009105%20RedCap%20access%20control.doc) Discussion on RedCap UE’s access control OPPO discussion Rel-17 FS\_NR\_redcap

[R2-2009249](file:///C:\Data\3GPP\Extracts\R2-2009249%20Further%20consideration%20on%20Redcap%20UE%20identification%20and%20access%20control.docx) Further consideration on Identification and access restrictions ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_redcap

[R2-2009362](file:///C:\Data\3GPP\Extracts\R2-2009362%20On%20Identification%20and%20Access%20Restrictions%20for%20Reduced%20Capability%20UE.doc) On Identification and Access Restrictions for Reduced Capabilities UE CATT discussion Rel-17 FS\_NR\_redcap

[R2-2009515](file:///C:\Data\3GPP\Extracts\._R2-2009515-RedCap-MSG3.docx) Ineffectiveness of MSG3 based RAN node identification of RedCap UE Apple discussion Rel-17 FS\_NR\_redcap

[R2-2009619](file:///C:\Data\3GPP\Extracts\R2-2009619%20-%20Identification%20and%20access%20control%20of%20RedCap%20UEs.docx) Identification and access control of RedCap Ues Ericsson discussion FS\_NR\_redcap

[R2-2009670](file:///C:\Data\3GPP\Extracts\R2-2009670_Redcap_early_identification.doc) Early identification of Redcap UEs Lenovo, Motorola Mobility discussion Rel-17 FS\_NR\_redcap

[R2-2009751](file:///C:\Data\3GPP\Extracts\R2-2009751%20Discussion%20on%20identification%20and%20access%20restriction%20of%20REDCAP%20UE.docx) Discussion on identification and access restriction of REDCAP UE China Telecommunications discussion

[R2-2009800](file:///C:\Data\3GPP\Extracts\R2-2009800%20Cell%20access%20for%20REDCAP%20UE%20with%20reduced%20bandwidth.docx) Cell access for REDCAP UE with reduced bandwidth Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_redcap

[R2-2009817](file:///C:\Data\3GPP\Extracts\R2-2009817_RedCap%20identify.docx) RedCap UE identification options NEC discussion Rel-17 FS\_NR\_redcap

[R2-2009871](file:///C:\Data\3GPP\Extracts\R2-2009871_Cell%20restriction%20and%20UAC%20enhancement%20for%20REDCAP%20UEs.docx) Cell restriction and UAC enhancement for REDCAP Ues Lenovo, Motorola Mobility discussion Rel-17

[R2-2009916](file:///C:\Data\3GPP\Extracts\R2-2009916%20Cell%20access%20restrictions%20for%20REDCAP%20UE.docx) Cell access restrictions for REDCAP UE Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_redcap

[R2-2009934](file:///C:\Data\3GPP\Extracts\R2-2009934%20Identification%20and%20access%20restriction%20of%20RedCap%20UE.docx) Identification and access restriction of RedCap UE Huawei, HiSilicon discussion Rel-17 FS\_NR\_redcap

[R2-2010224](file:///C:\Data\3GPP\Extracts\R2-2010224%20Discussion%20on%20access%20restriction%20during%20Msg3.doc) Consideration on access restriction during Msg3 LG Electronics UK discussion Rel-17

### 8.12.3 UE power saving and battery lifetime enhancement

UE power saving and battery lifetime enhancement for reduced capability UEs in applicable use cases (e.g. delay tolerant case).

Including outcome of [Post111-e][915][REDCAP] UE power saving features

[R2-2009364](file:///C:\Data\3GPP\Extracts\R2-2009364%20Summary%20of%20email%20discussion%20915%20-%20Summary%20-%20final.docx) Summary of email discussion 915 - UE power saving features CATT discussion Rel-17 FS\_NR\_redcap

Proposal 1: Supporting years-long battery life is a requirement of REDCAP UEs

Proposal 2: The eDRX cycle in RRC\_IDLE is extended beyond 10.24s for REDCAP UEs.

Proposal 3: The eDRX cycle in RRC\_IDLE is extended up to 2621.44s for REDCAP UEs, as a baseline.

Proposal 4: If it is agreed to extend the eDRX cycle in RRC\_INACTIVE beyond 10.24s for REDCAP UEs, the extended value is the same as for RRC\_IDLE i.e. 2621.44s, as a baseline.

Proposal 5: In case RAN2 agrees to extend the maximum eDRX cycle in RRC\_INACTIVE beyond 10.24s, SA2/CT1/RAN3 should be informed.

* Mediatek has strong concerns to go for longer eDRX cycles for RRC Inactive and send LS to other groups for this. Intel agrees, they also have concerns on the related complexity: no need to send LS until RAN2 agrees on the need. QC/Oppo/ZTE agree.
* Apple thinks that there could be benefits in going for this and then have no objections to ask other groups.
* Strong concerns to send an LS, at least from this meeting. Can continue to discuss the need for longer eDRX in Inactive in the next meeting.

Proposal 6: The lowest value of eDRX cycle is 5.12s for RRC\_IDLE and RRC\_INACTIVE REDCAP UEs.

Proposal 7: For UE in RRC IDLE/INACTIVE and eDRX cycle is less than 10.24s, paging monitoring is based on eDRX cycle and PTW, PH, if any, are not used.

Proposal 8: For UE in RRC IDLE and eDRX cycle is equal to 10.24s:

• If eDRX cycle > 10.24s is not supported (as outcome of Q1.1), paging monitoring is based on eDRX cycle (taking eDRX cycle as T in PF/PO formula);

• If eDRX cycle > 10.24s is supported (as outcome of Q1.1), paging monitoring involves PTW, PH, similar to the LTE ‎eDRX mechanism beyond 10.24s

Proposal 9: For UE in RRC INACTIVE and eDRX cycle is equal to 10.24s:

• If eDRX cycle > 10.24s is supported for RRC\_INACTIVE (as outcome of Q1.3) or for RRC\_IDLE (as outcome of Q1.1), paging monitoring involves PTW, PH, similar to the LTE ‎eDRX mechanism beyond 10.24s.

o FFS how to support PTW and PH for both RRC\_IDLE and RRC\_INACTIVE

• Otherwise, paging monitoring is based on eDRX cycle (taking eDRX cycle as T in PF/PO formula)

Proposal 10: The target REDCAP UE, considering mobility, is not limited to a fixed UE, but can also experience some low mobility, and this, during some “stationary” periods of time.

Proposal 11: RAN2 will study ways and feasibility of supporting different relaxation levels for fixed UEs and slightly moving UEs.

Proposal 12: The RRM relaxation of REDCAP UEs is triggered based on measurements.

Proposal 13: RAN2 takes R16 NR RRM relaxation procedures as a baseline to study further enhancements for REDCAP UEs.

Proposal 14: RAN2 de-prioritizes work on RRM relaxation of the serving cell for REDCAP UEs until RAN4 analyzes the resulting performance impact. RAN2 sends an LS at this meeting to RAN4 asking to study such performance impacts.

* Mediatek wonders about the content of the LS. Is this to ask about power consumption evaluations or performance requirements? CATT thinks the intention is to ask about possible impacts. ZTE agrees with Mediatek and doesn't see the need for relaxation for serving cell measurements. ZTE thinks RAN4 needs at least 2 meetings to provide simulation results and then provide feedback to RAN2. Vivo also has some concerns on the timeline if we send an LS to RAN4: RAN2 should discuss first if this is needed
* We don't send an LS to RAN4, at least from this meeting. We can continue to discuss in RAN2 about the potential benefit for this and then decide how to progress
* [AT112-e][114][REDCAP] Power saving (CATT)

Scope: Continue the proposals from [R2-2009364](file:///C:\Data\3GPP\Extracts\R2-2009364%20Summary%20of%20email%20discussion%20915%20-%20Summary%20-%20final.docx), apart those on eDRX cycle in Inactive longer than 10.24s and on RRM relaxation for serving cell

Intended outcome: summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions

Initial deadline (for companies' feedback): Tuesday 2020-11-11 17:00 UTC

Initial deadline (for rapporteur's summary in R2-2010787): Tuesday 2020-11-10 23:00 UTC

Proposals marked "for agreement" in R2-2010787 not challenged until Wednesday 2020-11-10 12:00 UTC will be declared as agreed by the session chair and can be considered for inclusion in the TP for the TR. For the rest the discussion might continue online in the CB online session on Wednesday.

R2-2010787 Summary of offline 114 - RedCap power saving CATT discussion Rel-17 FS\_NR\_redcap

[R2-2008891](file:///C:\Data\3GPP\Extracts\R2-2008891_DRX%20enhancements%20for%20RedCap%20UEs_v1.docx) DRX enhancements for RedCap UEs Qualcomm Incorporated discussion Rel-17 FS\_NR\_redcap

[R2-2008948](file:///C:\Data\3GPP\Extracts\R2-2008948%20Discussion%20on%20e-DRX%20for%20Redcap%20Devices.doc) Discussion on e-DRX for Redcap Devices Beijing Xiaomi Mobile Software discussion

[R2-2009011](file:///C:\Data\3GPP\Extracts\R2-2009011_RedCap_eDRX%20INACTIVE.docx) Support of extend paging DRX cycle for Inactive UE Intel Corporation discussion Rel-17

[R2-2009022](file:///C:\Data\3GPP\Extracts\R2-2009022.docx) Relax measurement for stationary and low mobility devices Intel Corporation discussion Rel-17 FS\_NR\_redcap

[R2-2009087](file:///C:\Data\3GPP\Extracts\R2-2009087%20RRM%20Relaxation%20for%20Power%20Saving.docx) RRM relaxation for power saving vivo, Guangdong Genius discussion Rel-17 FS\_NR\_redcap

[R2-2009106](file:///C:\Data\3GPP\Extracts\R2-2009106%20RRM%20relax.doc) Discussion on RRM relaxation OPPO discussion Rel-17 FS\_NR\_redcap

[R2-2009116](file:///C:\Data\3GPP\Extracts\R2-2009116%20-%20Further%20considerations%20for%20eDRX.DOCX) Further considerations for eDRX MediaTek Inc. discussion Rel-17 FS\_NR\_redcap

[R2-2009247](file:///C:\Data\3GPP\Extracts\R2-2009247%20Discussion%20on%20eDRX%20for%20Redcap%20UE.docx) Discussion on eDRX for Redcap UE ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_redcap

[R2-2009363](file:///C:\Data\3GPP\Extracts\R2-2009363%20On%20eDRX%20for%20NR%20RRC%20Inactive%20and%20Idle.doc) On eDRX for NR RRC Inactive and Idle CATT discussion Rel-17 FS\_NR\_redcap

[R2-2009532](file:///C:\Data\3GPP\Extracts\._R2-2009532_edrx256_cmas_v3.docx) Support of 2.56 eDRX cycle and emergency broadcast reception for RedCap UEs Apple, Facebook discussion Rel-17 FS\_NR\_redcap

[R2-2009620](file:///C:\Data\3GPP\Extracts\R2-2009620%20-%20RedCap%20Power%20Saving.docx) RedCap power saving enhancements Ericsson discussion FS\_NR\_redcap

[R2-2009877](file:///C:\Data\3GPP\Extracts\R2-2009877%20RRM%20relaxation%20for%20stationary%20UE%20with%20reduced%20capability.docx) RRM relaxation for stationary UE with reduced capability Lenovo, Motorola Mobility discussion Rel-17

[R2-2009917](file:///C:\Data\3GPP\Extracts\R2-2009917%20UE%20power%20saving%20and%20battery%20lifetime%20enhancement%20for%20REDCAP%20UE.docx) Power saving and battery lifetime enhancement for REDCAP UE Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_redcap

[R2-2009935](file:///C:\Data\3GPP\Extracts\R2-2009935%20eDRX%20and%20RRM%20measurement%20relaxation%20for%20RedCap%20UE.doc) eDRX and RRM measurement relaxation for RedCap UE Huawei, HiSilicon discussion Rel-17 FS\_NR\_redcap

[R2-2010113](file:///C:\Data\3GPP\Extracts\R2-2010113%20eDRX%20for%20Reduced%20Capability%20NR%20Devices.docx) eDRX for Reduced Capability NR Devices Convida Wireless discussion Rel-17

[R2-2010392](file:///C:\Data\3GPP\Extracts\R2-2010392%20eDRX%20for%20reduced%20capability%20UE.docx) eDRX for reduced capability UE CMCC discussion Rel-17 FS\_NR\_redcap

[R2-2010406](file:///C:\Data\3GPP\Extracts\R2-2010406.doc) Introducing Extended DRX for RRC Inactive and/or Idle Samsung discussion FS\_NR\_redcap

[R2-2010580](file:///C:\Data\3GPP\Extracts\R2-2010580%20RRM%20relaxation%20for%20stationary%20RedCap%20UEs.doc) RRM relaxation for stationary RedCap Ues LG Electronics Inc. discussion Rel-17 FS\_NR\_redcap

[R2-2010592](file:///C:\Data\3GPP\Extracts\R2-2010592.doc) RRM relaxation for RedCap devices Samsung Electronics discussion Rel-17

## Summary

TBD