3GPP TSG-RAN WG2 Meeting #111 electronic R2-2008122

Online, August 17th - 28th, 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 [AT111e][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 discusison 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:

* [AT111e][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

eMIMO:

The discussion will initially happen in offline email discussions (101) kicked off at the e-meeting start and will then continue during the web conference call(s).

Tuesday August 18th, 13:30 - 15:00 UTC:

* Check the status of email discussion 101 and decide on next steps

CLI and other NR R1 WIs Corrections:

The discussion will initially happen in offline email discussions (102) kicked off at the e-meeting start and will then continue during the web conference call(s).

Tuesday August 18th, 13:30 - 15:00 UTC:

* Check the status of email discussion 102 and decide on next steps
* Discuss other NR R1 WI corrections

RACS:

The discussion will initially happen in offline email discussions (103) kicked off at the e-meeting start and will then continue during the web conference call(s).

Wednesday August 19th, 13:30 - 15:00 UTC:

* Check the status of email discussion 103 and decide on next steps

PRN:

The discussion will initially happen in offline email discussions (104) kicked off at the e-meeting start and will then continue during the web conference call(s).

Wednesday August 19th, 13:30 - 15:00 UTC:

* Check the status of email discussion 104 and decide on next steps

NTN:

The discussion will initially happen in offline email discussions (105, 106 and 107) kicked off at the e-meeting start and will then continue during the web conference call(s).

Friday August 21th, 3:30 - 5:00 UTC:

* Check the status of email discussion 105 and decide on next steps
* Discuss the incoming LS in [R2-2006530](file:///C:\Data\3GPP\Extracts\R2-2006530_S2-2004688.doc) and suggested reply LS

Monday August 24th, 13:00 - 14:30 UTC:

* Check the status of email discussion 106 and 107 and decide on next steps
* Continue the discussion on UP aspects (if time allows)

Fridat August 28th, 04:00 - 5:30 UTC:

* Discuss the outcome of email discussion 105, 106, 107, 115
* Discuss next steps

REDCAP:

The discussion will initially happen in offline email discussions (108, 109, 110 and 111) kicked off at the e-meeting start and will then continue during the web conference call(s).

Tuesday August 25th, 13:00 - 16:00 UTC:

* Check the status of email discussion 108, 109, 110, 111 and decide on next steps
* Start the discussion on the other aspects

Fridat August 28th, 04:00 - 5:30 UTC:

* Discuss the outcome of email discussion 111
* Start the discussion on RRM relaxation aspects
* Discuss next steps

List and status of offline email discussions

NOTE: No offline email discussions will be kicked off before Monday August 17th, 07:00 UTC

* [AT111e][101][eMIMO] MAC corrections (Samsung)

Initial scope: Discuss the CRs in [R2-2006779](file:///C:\Data\3GPP\Extracts\R2-2006779_CR0784_38321_Rel16_Corrections%20to%20description%20of%20Candidate%20RS%20ID%20in%20BFR%20MAC%20CE.docx), [R2-2007525](file:///C:\Data\3GPP\Extracts\R2-2007525%20CR%20on%2038.321%20for%20BFR%20MAC%20CE%20design.docx), [R2-2006797](file:///C:\Data\3GPP\Extracts\R2-2006797%2038321%20CR0785%20Clarification%20on%20the%20BFR%20MAC%20CE%20report.docx), [R2-2007485](file:///C:\Data\3GPP\Extracts\R2-2007485%20Correction%20on%20the%20BFR%20cancellation.docx), [R2-2007736](file:///C:\Data\3GPP\Extracts\R2-2007736%20CR0837_BFR%20Cancellation%20regarding%20MAC%20reset.docx), [R2-2007526](file:///C:\Data\3GPP\Extracts\R2-2007526%20CR%20on%2038.321%20for%20BFR%20procedure.docx), [R2-2007895](file:///C:\Data\3GPP\Extracts\._R2-2007895.doc) and [R2-2008053](file:///C:\Data\3GPP\Extracts\R2-2008053.docx)

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 (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 2020-08-18 07:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008181](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008181.zip)): Tuesday 2020-08-18 09:00 UTC

Updated scope: Draft the CR in [R2-2008196](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008196.zip) and continue the discussion on [R2-2008053](file:///C:\Data\3GPP\Extracts\R2-2008053.docx), e.g. to see whether this issue should be addressed in RAN2 or other groups.

Updated intended outcome: Agreeable CR in [R2-2008196](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008196.zip) and summary of the discussion in [R2-2008197](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008197.zip)

New deadline (for companies' feedback): Wednesday 2020-08-26 07:00 UTC

Updated deadline (for rapporteur's summary in [R2-2008197](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008197.zip)): Wednesday 2020-08-26 09:00 UTC

Final scope: Draft R2-2008219 and discuss implications of the reply LS from RAN1 (if it will be made available with a R2 number before the end of the meeting)

Final intended outcome: Agreeable CR in R2-2008219 and summary of the discussion on the implications of the reply LS from RAN1 in R2-2008221 (if there will be consensus for a further CR, a 1-week email discussion will be allocated for this)

Final deadline (for companies' feedback): Friday 2020-08-28 06:00 UTC

Final deadline (for uploading R2-2008219 and R2-2008221): Friday 2020-08-28 08:00 UTC

Status: Ongoing

* [AT111e][102][CLI] Reply LS to RAN3 (ZTE)

Scope: Attempt drafting a reply LS to the incoming LS in [R2-2006524](file:///C:\Data\3GPP\Extracts\R2-2006524_R3-204399.docx) based on the related contributions in [R2-2006898](file:///C:\Data\3GPP\Extracts\R2-2006898%20Discussion%20on%20RAN3%20LS%20about%20SRS%20resource%20exchange.docx) and [R2-2007355](file:///C:\Data\3GPP\Extracts\R2-2007355-SRS-RSRP%20Xn.docx) and draft reply LS proposals in [R2-2006899](file:///C:\Data\3GPP\Extracts\R2-2006899%20Draft%20reply%20LS%20on%20exchange%20of%20information%20related%20to%20SRS-RSRP%20measurement%20resource%20configuration%20for%20UE-CLI.doc), [R2-2007356](file:///C:\Data\3GPP\Extracts\R2-2007356-Draft-LS-Response.docx) and [R2-2007851](file:///C:\Data\3GPP\Extracts\R2-2007851%20Draft%20LS%20on%20Update%20frequency%20of%20SRS-RSRP%20configuration%20for%20CLI.doc)

Initial intended outcome: initial draft reply LS to RAN3 in [R2-2008182](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008182.zip):

Initial deadline (for companies' feedback): Tuesday 2020-08-18 10:00 UTC

Initial deadline (for initial draft reply LS in [R2-2008182](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008182.zip)): Tuesday 2020-08-18 12:00 UTC

Updated Scope: Continue the discussion and attempt a revision of the reply LS

Updated intended outcome: revised draft reply LS to RAN3 in [R2-2008200](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008200.zip)

Updated interim deadline (for companies' feedback): Wednesday 2020-08-26 00:00 UTC

Updated interim deadline (for revised draft reply LS in [R2-2008200](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008200.zip)): Wednesday 2020-08-26 02:00 UTC

If the draft reply LS in [R2-2008200](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008200.zip) will be not challenged until Wednesday 2020-08-26 12:00, it will be declared as agreed by the session chair. Otherwise the discussion will continue until the CB online session on Wednesday 2020-08-26.

Status: Closed

* [AT111e][103][RACS] Corrections (Huawei)

Scope: Discuss the CRs in [R2-2008104](file:///C:\Data\3GPP\Extracts\R2-2008104%20Correction%20on%20the%20UE%20Capability%20presence%20upon%20SN%20addition%20and%20SN%20change.docx), [R2-2007806](file:///C:\Data\3GPP\Extracts\R2-2007806%20CR%20on%20UE%20capability%20of%20segmentation%20for%20UE%20capability%20information%20(38.306).docx) and [R2-2007807](file:///C:\Data\3GPP\Extracts\R2-2007807%20CR%20on%20UE%20capability%20of%20segmentation%20for%20UE%20capability%20information%20(36.306).docx)

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 (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 2020-08-19 07:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008183](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008183.zip)): Wednesday 2020-08-19 09:00 UTC

Updated Scope: Discuss a revision of the Rel-15&16 CRs in [R2-2006884](file:///C:\Data\3GPP\Extracts\R2-2006884_Clarification%20on%20CG-ConfigInfo%20for%20NR-DC%20and%20NE-DC_38.331_R15.docx) in [R2-2006885](file:///C:\Data\3GPP\RAN2\Docs\R2-2006885.zip) (so far discussed in offline 007) and the Rel-16 CR in [R2-2008204](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008204.zip)

Initial intended outcome:

* + - Agreeable "NR\_newRAT-Core" Rel-15&16 CRs in [R2-2008208](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008208.zip) and [R2-2008210](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008210.zip)
    - Agreeable "RACS-RAN-Core" Rel-16 CR in [R2-2008204](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008204.zip)

Updated deadline (for companies' feedback): Friday 2020-08-21 00:00 UTC

Updated deadline (for uploading the CRs): Friday 2020-08-21 02:00 UTC

If the CRs will not be challenged until Monday 2020-08-24 10:00 UTC they will be declared as agreed by the session chair. Otherwise the discussion will continue until the CB online session on Wednesday 2020-08-26.

Status: Closed

* [AT111e][104][PRN] Stage 3 Corrections (Nokia)

Scope: Discuss the CRs in [R2-2006634](file:///C:\Data\3GPP\Extracts\38304_CR0176_(Rel-16)_R2-2006634%20Correction%20on%20Naming%20%20of%20the%20List%20of%20Forbidden%20Tracking%20Areas.docx), [R2-2006852](file:///C:\Data\3GPP\Extracts\R2-2006852-CR38304-NPN.docx), [R2-2007841](file:///C:\Data\3GPP\Extracts\R2-2007841%20Correction%20to%2038.304%20on%20any%20cell%20seletion%20in%20NPN.doc), [R2-2008114](file:///C:\Data\3GPP\Extracts\R2-2008114%2038.304%20Correction%20on%20UE%20behavior%20when%20the%20best%20cell%20is%20not%20suitable.docx), [R2-2006633](file:///C:\Data\3GPP\Extracts\38331_CR1722_(Rel-16)_R2-2006633%20Correction%20on%20First%20NPN-Identity%20Usage%20for%20SIB%20Validity.docx), [R2-2007842](file:///C:\Data\3GPP\Extracts\R2-2007842%20Correction%20to%2038.331%20on%20SIB%20validity%20and%20emergency%20services%20for%20NPN.doc), [R2-2006853](file:///C:\Data\3GPP\Extracts\R2-2006853-CR38331-NPN.docx), [R2-2007411](file:///C:\Data\3GPP\Extracts\R2-2007411%20-%20ims-EmergencySupport%20interpretation%20and%20clarification%20for%20SNPN.docx) and [R2-2008016](file:///C:\Data\3GPP\Extracts\R2-2008016_CR1973_38331_Rel16_Corrections%20to%20IntraFreqCAG-CellPerPLMN%20and%20InterFreqCAG-CellList%20in%20SIB3%20and%20SIB4.docx)

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 (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 2020-08-19 07:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008184](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008184.zip)): Wednesday 2020-08-19 09:00 UTC

Updated scope:

* + - Continue the discussion on change 2c in [R2-2006852](file:///C:\Data\3GPP\Extracts\R2-2006852-CR38304-NPN.docx)
    - Discuss whether the flow chart can be modified or a note added to address the issue in [R2-2007841](file:///C:\Data\3GPP\Extracts\R2-2007841%20Correction%20to%2038.304%20on%20any%20cell%20seletion%20in%20NPN.doc)
    - Continue the discussion on [R2-2006633](file:///C:\Data\3GPP\Extracts\38331_CR1722_(Rel-16)_R2-2006633%20Correction%20on%20First%20NPN-Identity%20Usage%20for%20SIB%20Validity.docx)
    - Continue the discussion on [R2-2007842](file:///C:\Data\3GPP\Extracts\R2-2007842%20Correction%20to%2038.331%20on%20SIB%20validity%20and%20emergency%20services%20for%20NPN.doc) (other aspects than emergency services)
    - Discuss whether there is a selected CAG in automatic and manual selection mode (and then the need for changes in [R2-2006853](file:///C:\Data\3GPP\Extracts\R2-2006853-CR38331-NPN.docx))
    - Continue the discussion on the need for the second change in [R2-2007411](file:///C:\Data\3GPP\Extracts\R2-2007411%20-%20ims-EmergencySupport%20interpretation%20and%20clarification%20for%20SNPN.docx)

Updated intended outcome: summary of the offline discussion and agreeable CRs:

Updated intermediate deadline (for companies' feedback): Monday 2020-08-24 12:00 UTC

Updated intermediate deadline (for rapporteur's summary in [R2-2008209](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008209.zip)): Monday 2020-08-24 18:00 UTC

Final scope: Discuss the 38.304 and 38.331 CRs reflecting meeting agreements

Final intended outcome: Agreeable CRs in R2-2008207 and R2-2008215

Final deadline (for companies' feedback): Friday 2020-08-28 06:00 UTC

Final deadline (for final CRs): Friday 2020-08-28 08:00 UTC

Status: Ongoing

* [AT111e][105][NTN] Workplan, scope and scenarios (Thales)

Scope: Discuss the workplan in [R2-2007565](file:///C:\Data\3GPP\Extracts\R2-2007565%20-%20Rel17%20NR-NTN%20workplan.docx) and the proposals in [R2-2007572](file:///C:\Data\3GPP\Extracts\R2-2007572%20-%20NR%20NTN%20reference%20scenarios.docx), [R2-2007537](file:///C:\Data\3GPP\Extracts\R2-2007537%20NTN%20Overview.docx), [R2-2006630](file:///C:\Data\3GPP\Extracts\R2-2006630_Further%20Clarifications%20on%20the%20NTN%20WID.docx) (and possibly others from contributions in 8.10.1)

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

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

Initial deadline (for companies' feedback): Thursday 2020-08-20 16:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008185](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008185.zip)): Thursday 2020-08-20 18:00 UTC

Updated scope: Continue the discussion on proposals in [R2-2008185](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008185.zip), from proposal 2.6.1 onwards

Final intended outcome: revised workplan and summary of the offline discussion with e.g.:

* + - List of proposals for agreement
    - List of proposals that require online discussions

Final deadline (for companies' feedback): Thursday 2020-08-27 06:00 UTC

Final deadline (for rapporteur's summary in [R2-2008228](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008228.zip)): Thursday 2020-08-27 10:00 UTC

Proposals marked "for agreement" in [R2-2008228](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008228.zip) not challenged until Thursday 2020-08-27 18:00 UTC will be declared as agreed by the session chair. For the rest the discussion will continue in the CB online session on Friday 2020-08-28.

Status: Ongoing

* [AT111e][106][NTN] Idle mode issues (ZTE)

Scope: Discuss the proposals in [R2-2006872](file:///C:\Data\3GPP\Extracts\R2-2006872_Consideration%20on%20system%20information%20and%20cell%20(re)selection%20in%20NTN-v0.docx), [R2-2006973](file:///C:\Data\3GPP\Extracts\R2-2006973.docx), [R2-2007171](file:///C:\Data\3GPP\Extracts\R2-2007171%20Discussion%20on%20RRC_IDLE%20mode%20issues%20in%20NTN.doc) and proposals 1 and 2 in [R2-2007574](file:///C:\Data\3GPP\Extracts\R2-2007574%20-%20Considerations%20on%20satellite%20ephemeris.docx). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Thursday 2020-08-20 16:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008187](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008187.zip)): Thursday 2020-08-20 18:00 UTC

Updated scope: Continue the discussion on remaining proposals in [R2-2008187](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008187.zip)and specifically: Proposals 3.1, 3.2, 4 and 6

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

* + - List of proposals for agreement
    - List of proposals that require online discussions

Final deadline (for companies' feedback): Thursday 2020-08-27 00:00 UTC

Final deadline (for rapporteur's summary in [R2-2008213](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008213.zip)): Thursday 2020-08-27 06:00 UTC

Proposals marked "for agreement" in [R2-2008213](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008213.zip) not challenged until Thursday 2020-08-27 18:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue in the CB online session on Friday 2020-08-28.

Status: Ongoing

* [AT111e][107][NTN] Pre-compensation and other MAC issues (Interdigital)

Scope: Discuss the proposals in [R2-2007615](file:///C:\Data\3GPP\Extracts\R2-2007615%20(R17%20NTN%20WI%20AI%208.10.2.1%20Summary%20of%20MAC%20open%20issues).docx), [R2-2007616](file:///C:\Data\3GPP\Extracts\R2-2007616%20(R17%20NTN%20WI%20AI%208.10.2.1%20Precompensation).docx), [R2-2006928](file:///C:\Data\3GPP\Extracts\R2-2006928.docx), [R2-2007590](file:///C:\Data\3GPP\Extracts\R2-2007590%20Timing%20Advance,%20Random%20Access%20and%20DRX%20aspects%20in%20NTN.docx) (and possibly other proposals from contributions in 8.10.2.1 focussing on pre-compensation and offset calculations), as well as proposals 1 to 5 in [R2-2007784](file:///C:\Data\3GPP\Extracts\R2-2007784-Consideration%20on%20MAC%20enhancements%20for%20NTN.doc). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Friday 2020-08-21 08:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip)): Friday 2020-08-21 10:00 UTC

Updated scope: Continue the discussion on proposals in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip) and specifically:

* + - Check whether the "FFS for UL" in meeting agreement #4 can be resolved. Also check whether an LS can be sent to RAN1 regarding RAN2 agreements on disabling HARQ feedback (proposal 23 in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip))
    - Check whether a "RAN2 Working Assumption" (to be further checked with RAN1) can be reached on (a revision of) proposals 1, 2 and 3 in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip)
    - Check whether any other proposals can be agreed from the lists "Seems agreeable" and "Require discussions" in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip)

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

* + - List of proposals for agreement
    - List of proposals that require online discussions

Final deadline (for companies' feedback): Thursday 2020-08-27 00:00 UTC

Final deadline (for rapporteur's summary in [R2-2008214](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008214.zip)): Thursday 2020-08-27 06:00 UTC

Proposals marked "for agreement" in [R2-2008214](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008214.zip) not challenged until Thursday 2020-08-27 18:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue in the CB online session on Friday 2020-08-28.

Status: Ongoing

* [AT111e][108][REDCAP] Scope and skeleton update (Ericsson)

Scope: Discuss the SI scope in [R2-2006910](file:///C:\Data\3GPP\Extracts\R2-2006910%20-%20%20Scope%20of%20Redcap%20SI.docx) and the skeleton update in [R2-2007366](file:///C:\Data\3GPP\Extracts\R2-2007366%20TR38875%20skeleton%20updates%20cover%20page.docx)

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

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

and skeleton update

Initial deadline (for companies' feedback): Monday 2020-08-24 16:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008189](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008189.zip)): Monday 2020-08-24 18:00 UTC

Status: Closed

* [AT111e][109][REDCAP] Reduced capability signalling framework (Intel)

Scope: Discuss the proposals in [R2-2006751](file:///C:\Data\3GPP\Extracts\R2-2006751-redcap-capabilty-framework.docx), [R2-2006911](file:///C:\Data\3GPP\Extracts\R2-2006911%20Framework%20and%20Principles%20for%20Reduced%20Capability.docx) and [R2-2006605](file:///C:\Data\3GPP\Extracts\R2-2006605_Defining%20and%20constraining%20UEs%20with%20reduced%20capabilities.docx). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Monday 2020-08-24 22:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008191](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008191.zip)): Tuesday 2020-08-25 02:00 UTC

Status: Closed

* [AT111e][110][REDCAP] Identification and access restriction (Huawei)

Scope: Discuss the proposals in [R2-2007345](file:///C:\Data\3GPP\Extracts\R2-2007345%20Identification%20and%20access%20restriction%20of%20REDCAP%20UE.doc), [R2-2006661](file:///C:\Data\3GPP\Extracts\R2-2006661.docx), [R2-2006786](file:///C:\Data\3GPP\Extracts\R2-2006786%20RedCap%20Identification%20and%20access%20restrictions.doc) and [R2-2007493](file:///C:\Data\3GPP\Extracts\R2-2007493%20-%20On%20UE%20identification%20and%20access%20restrictions.docx). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Monday 2020-08-24 22:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008192](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008192.zip)): Tuesday 2020-08-25 02:00 UTC

Status: Closed

* [AT111e][111][REDCAP] DRX aspects (CATT)

Scope: Discuss the proposals in [R2-2007013](file:///C:\Data\3GPP\Extracts\R2-2007013.doc), [R2-2007346](file:///C:\Data\3GPP\Extracts\R2-2007346%20Discussion%20on%20eDRX%20for%20RRC_INACTIVE%20and%20RRC_IDLE.doc), [R2-2007494](file:///C:\Data\3GPP\Extracts\R2-2007494%20eDRX%20for%20reduced%20capability%20UEs.docx) as well as proposals 1 to 4 in [R2-2006748](file:///C:\Data\3GPP\Extracts\R2-2006748_RedCap_PowSav_eDRX-Meas.docx). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Monday 2020-08-24 22:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008193](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008193‎.zip)): Tuesday 2020-08-25 02:00 UTC

Updated scope: Continue the discussion on remaining proposals in [R2-2008193](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008193‎.zip) (not agreed during the online session):

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

* + - List of proposals for agreement
    - List of proposals that require online discussions

Final deadline (for companies' feedback): Thursday 2020-08-27 06:00 UTC

Final deadline (for rapporteur's summary in [R2-2008216](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008216.zip)): Thursday 2020-08-27 08:00 UTC

Proposals marked "for agreement" in [R2-2008216](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008216.zip) not challenged until Thursday 2020-08-27 18:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue in the CB online session on Friday 2020-08-28.

Status: Ongoing

* [AT111e][112][eMIMO] RRC Corrections (Ericsson)

Scope: Continue the discussion on [R2-2007161](file:///C:\Data\3GPP\Extracts\R2-2007161%2038331CR%20Correction%20on%20number%20of%20CORESET%20per%20BWP.docx) and [R2-2007577](file:///C:\Data\3GPP\Extracts\R2-2007577%2038.331%20NReMIMO.docx)

Intended outcome: Agreeable CRs in [R2-2008198](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008198.zip) and [R2-2008199](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008199.zip)

Initial deadline (for companies' feedback): Wednesday 2020-08-26 07:00 UTC

Initial deadline (for final CRs): Wednesday 2020-08-26 09:00 UTC

Final scope: Continue the discussion on the (e)MIMO RRC CRs

Final intended outcome: Agreeable CRs in R2-2008222, R2-2008223, R2-2008224, R2-2008225, R2-2008226

Final deadline (for companies' feedback): Friday 2020-08-28 06:00 UTC

Final deadline (for final CRs): Friday 2020-08-28 08:00 UTC

Status: Ongoing

* [AT111e][113][CLI] RRC CR (LG)

Scope: Revise the CR in [R2-2007989](file:///C:\Data\3GPP\Extracts\R2-2007989%20CR%20on%20CLI%20configuration.docx)

Intended outcome: Agreeable CR in [R2-2008201](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008201.zip)

Initial deadline (for companies' feedback): Wednesday 2020-08-26 07:00 UTC

Initial deadline (for final CR): Wednesday 2020-08-26 09:00 UTC

Status: Closed

* [AT111e][114][L1enh\_URLLC] RRC CRs (CATT)

Scope: discuss the TP for a possible revision of [R2-2007080](file:///C:\Data\3GPP\Extracts\38331_CR1783r0_(Rel-16)_R2-2007080.docx) and revise [R2-2007862](file:///C:\Data\3GPP\Extracts\R2-2007862%20Converting%20suffix%20ForDCI-Formatx-y%20for%20shorter%20RRC%20parameter%20names.docx)

Intended outcome: Agreeable TP for a possible revision of [R2-2007080](file:///C:\Data\3GPP\Extracts\38331_CR1783r0_(Rel-16)_R2-2007080.docx) in [R2-2008202](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008202.zip)

and agreeable CR in [R2-2008203](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008203.zip)

Initial deadline (for companies' feedback): Wednesday 2020-08-26 07:00 UTC

Initial deadline (for TP in [R2-2008202](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008202.zip) and CR in [R2-2008203](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008203.zip)): Wednesday 2020-08-26 09:00 UTC

Status: Closed

* [AT111e][115][NTN] Reply LS to RAN2 (Qualcomm)

Scope: Discuss a (possibly intermediate) reply LS to SA2

Intended outcome: Draft reply LS to SA2 in [R2-2008212](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008212.zip)

Deadline (for companies' feedback): Thursday 2020-08-27 02:00 UTC

Deadline (for draft reply LS in [R2-2008212](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008212.zip)): Thursday 2020-08-27 06:00 UTC

If the draft reply LS in [R2-2008212](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008212.zip) will be not challenged until Thursday 2020-08-27 18:00 UTC, it will be declared as agreed by the session chair. Otherwise the discussion will continue in the CB online session on Friday 2020-08-28.

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

Email max expectation: 3 email threads

RACS

[R2-2006516](file:///C:\Data\3GPP\Extracts\R2-2006516_R3-204147.docx) LS reply on RACS multiple radio capability formats (R3-204147; contact: Huawei) RAN3 LS in Rel-16 RACS-RAN-Core To:SA2 Cc:RAN2, CT4, CT3

* Noted

[R2-2007805](file:///C:\Data\3GPP\Extracts\R2-2007805%20Correction%20on%20the%20UE%20Capability%20presence%20upon%20SN%20addition%20and%20SN%20change.docx) Correction on the UE Capability presence upon SN addition and SN change Huawei, HiSilicon CR Rel-16 38.331 16.1.0 1911 - F RACS-RAN-Core

* Revised in [R2-2008104](file:///C:\Data\3GPP\Extracts\R2-2008104%20Correction%20on%20the%20UE%20Capability%20presence%20upon%20SN%20addition%20and%20SN%20change.docx)

[R2-2008104](file:///C:\Data\3GPP\Extracts\R2-2008104%20Correction%20on%20the%20UE%20Capability%20presence%20upon%20SN%20addition%20and%20SN%20change.docx) Correction on the UE Capability presence upon SN addition and SN change Huawei, HiSilicon, Ericsson CR Rel-16 38.331 16.1.0 1911 1 F RACS-RAN-Core

* Initially discussed in offline 103
* Revised in [R2-2008204](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008204.zip) based on the outcome of offline 103

[R2-2008204](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008204.zip) Correction on the UE Capability presence upon SN addition and SN change Huawei, HiSilicon, Ericsson CR Rel-16 38.331 16.1.0 1911 2 F RACS-RAN-Core

* Agreed

[R2-2007806](file:///C:\Data\3GPP\Extracts\R2-2007806%20CR%20on%20UE%20capability%20of%20segmentation%20for%20UE%20capability%20information%20(38.306).docx) CR on UE capability of segmentation for UE capability information Huawei, HiSilicon CR Rel-16 38.306 16.1.0 0392 - F RACS-RAN-Core

* Initially discussed in offline 103
* Revised in [R2-2008205](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008205.zip) based on the outcome of offline 103

[R2-2008205](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008205.zip) CR on UE capability of segmentation for UE capability information Huawei, HiSilicon CR Rel-16 38.306 16.1.0 0392 1 F RACS-RAN-Core

* Endorsed. To be contributed as part of the offline discussion on UE capability and merged in the mega CR

[R2-2007807](file:///C:\Data\3GPP\Extracts\R2-2007807%20CR%20on%20UE%20capability%20of%20segmentation%20for%20UE%20capability%20information%20(36.306).docx) CR on UE capability of segmentation for UE capability information Huawei, HiSilicon CR Rel-16 36.306 16.1.0 1783 - F RACS-RAN-Core

* Initially discussed in offline 103
* Revised in [R2-2008206](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008206.zip) based on the outcome of offline 103

[R2-2008206](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008206.zip) CR on UE capability of segmentation for UE capability information Huawei, HiSilicon CR Rel-16 36.306 16.1.0 1783 - F RACS-RAN-Core

* Agreed

Moved from 5.4.1.4

[R2-2006884](file:///C:\Data\3GPP\RAN2\Docs\R2-2006884.zip) Clarification on CG-ConfigInfo for NR-DC and NE-DC Google Inc. CR Rel-15 38.331 15.10.0 1745 - F NR\_newRAT-Core

* Initially discussed in offline 007 and then in offline 103
* Revised in [R2-2008208](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008208.zip)

[R2-2008208](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008208.zip) Clarification on CG-ConfigInfo for NR-DC and NE-DC Google Inc., Ericsson, Huawei CR Rel-15 38.331 15.10.0 1745 1 F NR\_newRAT-Core

* Agreed

[R2-2006885](file:///C:\Data\3GPP\RAN2\Docs\R2-2006885.zip) Clarification on CG-ConfigInfo for NR-DC and NE-DC Google Inc. CR Rel-16 38.331 16.1.0 1746 - A NR\_newRAT-Core

* Initially discussed in offline 007 and then in offline 103
* Revised in [R2-2008210](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008210.zip)

[R2-2008210](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008210.zip) Clarification on CG-ConfigInfo for NR-DC and NE-DC Google Inc., Ericsson, Huawei CR Rel-16 38.331 16.1.0 1746 1 A NR\_newRAT-Core

* Agreed
* [AT111e][103][RACS] Corrections (Huawei)

Scope: Discuss the CRs in [R2-2008104](file:///C:\Data\3GPP\Extracts\R2-2008104%20Correction%20on%20the%20UE%20Capability%20presence%20upon%20SN%20addition%20and%20SN%20change.docx), [R2-2007806](file:///C:\Data\3GPP\Extracts\R2-2007806%20CR%20on%20UE%20capability%20of%20segmentation%20for%20UE%20capability%20information%20(38.306).docx) and [R2-2007807](file:///C:\Data\3GPP\Extracts\R2-2007807%20CR%20on%20UE%20capability%20of%20segmentation%20for%20UE%20capability%20information%20(36.306).docx)

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 (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 2020-08-19 07:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008183](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008183.zip)): Wednesday 2020-08-19 09:00 UTC

Updated Scope: Discuss a revision of the Rel-15&16 CRs in [R2-2006884](file:///C:\Data\3GPP\Extracts\R2-2006884_Clarification%20on%20CG-ConfigInfo%20for%20NR-DC%20and%20NE-DC_38.331_R15.docx) in [R2-2006885](file:///C:\Data\3GPP\RAN2\Docs\R2-2006885.zip) (so far discussed in offline 007) and the Rel-16 CR in [R2-2008204](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008204.zip)

Initial intended outcome:

* + - Agreeable "NR\_newRAT-Core" Rel-15&16 CRs in [R2-2008208](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008208.zip) and [R2-2008210](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008210.zip)
    - Agreeable "RACS-RAN-Core" Rel-16 CR in [R2-2008204](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008204.zip)

Updated deadline (for companies' feedback): Friday 2020-08-21 00:00 UTC

Updated deadline (for uploading the CRs): Friday 2020-08-21 02:00 UTC

If the CRs will not be challenged until Monday 2020-08-24 10:00 UTC they will be declared as agreed by the session chair. Otherwise the discussion will continue until the CB online session on Wednesday 2020-08-26.

[R2-2008183](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008183.zip) Summary of offline 103 - RACS corrections Huawei, HiSilicon discussion Rel-16 RACS-RAN-Core

Proposed agreements

Proposal 1: R2-2008104 can be agreed with some changes:

• The changes for EN-DC in the CR also applies to NGEN-DC

• Update the wording to “May not be included if the UE Radio Capability ID as specified in 23.502 [43] is used.”

• The changes for the table should be aligned with the conclusion in offline-007

* ZTE thinks we don't need to update the wording to "may not be…". Intel prefers to use "may not be" as this is an exception. ZTE could be fine but would like to change the description for HO preparation message as well, for consistency.
* Ericsson thinks that "may not be" changes the meaning.
* Nokia thinks that we should not use "may not" but rather "need not".
* Change to "need not"
* Ericsson also think we should have Rel-15 change. Intel wonders why Rel-15. Ericsson thinks this refers to the different architectures already there in Rel-15. Intel thinks this is covered by a different Rel-15 CR, as part of offline 007. Intel thinks we could continue in offline 007
* Move the discussion currently in offline 007 to a follow-up of offline 103. The output of offline 103 is expected to be both a Rel-15 CR and Rel-16 CR for "NR\_newRAT-Core" and a Rel-16 CR for "RACS-RAN-Core"

Proposal 2: R2-2007806 can be agreed with same changes:

• Update the wording to align with the description in 36.306 CR, the beginning of the sentence is corrected as “It is optional for UE to support…”

• Move this capability to a new clause “5.x Other features”

Proposal 3: R2-2007807 can be agreed with some changes:

• Correct the reference from “38.331 [9]” to “36.331 [5]”

Agreements:

1. R2-2008104 can be agreed with some changes:

• The changes for EN-DC in the CR also applies to NGEN-DC

• Update the wording to “Need not be included if the UE Radio Capability ID as specified in 23.502 [43] is used.”

• The changes for the table should be aligned with the discussion in offline-007 (which will now continue as part of the follow-up of 103)

1. R2-2007806 can be agreed with some changes:

• Update the wording to align with the description in 36.306 CR, the beginning of the sentence is corrected as “It is optional for UE to support…”

• Move this capability to a new clause “5.x Other features”

1. R2-2007807 can be agreed with some changes:

• Correct the reference from “38.331 [9]” to “36.331 [5]”

PRN

Stage 2

[R2-2006879](file:///C:\Data\3GPP\Extracts\38300_CR0261_(Rel-16)_R2-2006879_PNI-NPN%20DC%20support.docx) Correction to the support of NR-DC for PNI-NPN Lenovo, Motorola Mobility CR Rel-16 38.300 16.2.0 0261 - F NG\_RAN\_PRN-Core

* Ericsson wonders if there is any RAN2 / UE impact due to this, if RAN3 is fine with this maybe this could be fine for RAN2 as well. Huawei confirms this comes from RAN3 agreement and in case this should be discussed there. ZTE thinks there are no issues in RAN2 due to this.
* LG has some sympathy for the CR.
* Not pursued

38.304 corrections

[R2-2006634](file:///C:\Data\3GPP\Extracts\38304_CR0176_(Rel-16)_R2-2006634%20Correction%20on%20Naming%20%20of%20the%20List%20of%20Forbidden%20Tracking%20Areas.docx) Correction on Naming of the List of Forbidden Tracking Areas CATT CR Rel-16 38.304 16.1.0 0176 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 104
* Changes related to "CAG-ID" (issue 1 in the CR) are endorsed and to be merged in a WI CR for 38.304
* Changes related to the TA (issue 2 in the CR) are not pursued

[R2-2006852](file:///C:\Data\3GPP\Extracts\R2-2006852-CR38304-NPN.docx) Cell selection and reselection corrections for NPNs Nokia, Nokia Shanghai Bell CR Rel-16 38.304 16.1.0 0177 - F NG\_RAN\_PRN-Core, NR\_unlic-Core

* Initially discussed in offline 104
* Changes in 5.2.3.1 (issue 1) in the CR) are not pursued
* Changes related to "Inter-RAT" (issue 2a in the CR) are not pursued
* Discuss other changes online
* Huawei thinks the behaviour for PLMN and SNPN the behaviour is slightly different and then would prefer not to remove the "redundant text"
* Intel supports the change (2c) because there is problem in the current specification
* Samsung thinks that also the text "If the UE is redirected under NR control to a frequency for which the timer is running, any limitation on that frequency shall be removed" is redundant
* LG and ZTE support 2c and 2d
* Change 2d is endorsed
* Continue the discussion on 2c in a follow-up of offline 104

[R2-2007841](file:///C:\Data\3GPP\Extracts\R2-2007841%20Correction%20to%2038.304%20on%20any%20cell%20seletion%20in%20NPN.doc) Correction to 38.304 on any cell seletion in NPN Huawei, HiSilicon CR Rel-16 38.304 16.1.0 0181 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 104
* Discuss the CR online after a conclusion on [R2-2007404](file:///C:\Data\3GPP\Extracts\R2-2007404%20-%20Limited%20services%20and%20SNPN%20Access%20Mode.docx)
* Nokia/LG understand the intention of the CR but this should be captured in a different way
* Huawei suggests to change to "… or suitable cell for any SNPN…"
* Samsung/ZTE think the current text is ok.
* Lenovo suggests that rather than fixing the procedural text we can consider fixing the flow chart
* Discuss in a follow-up of offline 104 whether the flow chart can be modified or a note added

[R2-2007902](file:///C:\Data\3GPP\Extracts\R2-2007902%2038.304%20Correction%20on%20UE%20behavior%20when%20the%20best%20cell%20is%20not%20suitable.docx) 38.304 Correction on UE behavior when the best cell is not suitable vivo CR Rel-16 38.304 16.1.0 0183 - F NG\_RAN\_PRN-Core

* Revised in [R2-2008114](file:///C:\Data\3GPP\Extracts\R2-2008114%2038.304%20Correction%20on%20UE%20behavior%20when%20the%20best%20cell%20is%20not%20suitable.docx)

[R2-2008114](file:///C:\Data\3GPP\Extracts\R2-2008114%2038.304%20Correction%20on%20UE%20behavior%20when%20the%20best%20cell%20is%20not%20suitable.docx) 38.304 Correction on UE behavior when the best cell is not suitable vivo Nokia,  Nokia Shanghai Bell CR Rel-16 38.304 16.1.0 0183 1 F NG\_RAN\_PRN-Core

* Initially discussed in offline 104
* 1st change is not pursued
* 2nd change ("this cell does not~~is a SNPN cell that~~ belongs to a SNPN that is not equal to the registered or selected SNPN of the UE in SNPN access mode") is endorsed and to be merged in a WI CR for 38.304

R2-2008207 Idle mode corrections for NPN Nokia CR Rel-16 38.304 16.1.0 0187 - F NG\_RAN\_PRN-Core

…

RRC corrections

Clarification on first NPN-Identity

[R2-2006633](file:///C:\Data\3GPP\Extracts\38331_CR1722_(Rel-16)_R2-2006633%20Correction%20on%20First%20NPN-Identity%20Usage%20for%20SIB%20Validity.docx) Correction on First NPN-Identity Usage for SIB Validity CATT CR Rel-16 38.331 16.1.0 1722 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 104
* Discuss the CR online together with [R2-2006853](file:///C:\Data\3GPP\Extracts\R2-2006853-CR38331-NPN.docx)
* Continue the discussion as part of the follow-up of offline 104

[R2-2007842](file:///C:\Data\3GPP\Extracts\R2-2007842%20Correction%20to%2038.331%20on%20SIB%20validity%20and%20emergency%20services%20for%20NPN.doc) Correction to 38.331 on SIB validity and emergency services for NPN Huawei, HiSilicon CR Rel-16 38.331 16.1.0 1926 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 104
* Discuss this CR online together with [R2-2007411](file:///C:\Data\3GPP\Extracts\R2-2007411%20-%20ims-EmergencySupport%20interpretation%20and%20clarification%20for%20SNPN.docx)
* Continue the discussion on other aspects than emergency services as part of the follow-up of offline 104

PNI-NPN related parameter selection

[R2-2006853](file:///C:\Data\3GPP\Extracts\R2-2006853-CR38331-NPN.docx) Corrections for PNI-NPN related parameter selection Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.1.0 1742 - F NG\_RAN\_PRN-Core

* Initially discussed in offline 104
* Discuss the CR online focusing on: 1) how to handle the "selected PNI-NPN" 2) how UE should handle the case when a cell is shared between a PLMN and PNI-NPNs of that PLMN
* Huawei thinks that for SIB1 and UAC the current text is clear; on the selected CAG ID: this is always selected by NAS layer; current text is clear.
* ZTE thinks that most companies don't see the need for this CR and what is not clear can be left to UE implementation.
* Nokia would like to have some clarification on where the UE behaviour is clarified for the UAC case. Huawei thinks the current text says that the UE will select the UAC params corresponding to the selected PNI-NPN. Nokia thinks there is no selected PNI-NPN. Huawei thinks there is a selected CAG in automatic and manual selection mode.
* Discuss as part of the follow-up of offline 104 whether there is a selected CAG in automatic and manual selection mode

Emergency services support in SNPN Access Mode

[R2-2007411](file:///C:\Data\3GPP\Extracts\R2-2007411%20-%20ims-EmergencySupport%20interpretation%20and%20clarification%20for%20SNPN.docx) ims-EmergencySupport interpretation and clarification for SNPN Ericsson discussion Rel-16 NG\_RAN\_PRN-Core

* Initially discussed in offline 104
* Discuss this CR online together with [R2-2007842](file:///C:\Data\3GPP\Extracts\R2-2007842%20Correction%20to%2038.331%20on%20SIB%20validity%20and%20emergency%20services%20for%20NPN.doc) (after concluding [R2-2007404](file:///C:\Data\3GPP\Extracts\R2-2007404%20-%20Limited%20services%20and%20SNPN%20Access%20Mode.docx))
* Huawei thinks this is covered by their CR as well
* Lenovo/Samsung/ZTE prefer the Ericson CR as it is written from UE perspective.
* Nokia is ok with the second change, but not the first. Can also live without changes
* Intel/QC/Apple/LG think that no changes are needed
* Ericsson think this is needed to have a complete specification: if we have a bit we sohlud describe the logic for this.
* CATT also think that a CR is needed.
* Continue the discussion on the need for the second change (to be merged in a WI CR for 38.331 if agreed)

Other

[R2-2008016](file:///C:\Data\3GPP\Extracts\R2-2008016_CR1973_38331_Rel16_Corrections%20to%20IntraFreqCAG-CellPerPLMN%20and%20InterFreqCAG-CellList%20in%20SIB3%20and%20SIB4.docx) Corrections to IntraFreqCAG-CellPerPLMN and InterFreqCAG-CellList in SIB3 and SIB4 Samsung Electronics Co., Ltd CR Rel-16 38.331 16.1.0 1973 - D NG\_RAN\_PRN-Core

* Initially discussed in offline 104
* Changes in the CR are endorsed and to be merged in a WI CR for 38.331

R2-2008215 Corrections for NPN Nokia CR Rel-16 38.331 16.1.0 2001 - F NG\_RAN\_PRN-Core

…

* [AT111e][104][PRN] Stage 3 Corrections (Nokia)

Scope: Discuss the CRs in [R2-2006634](file:///C:\Data\3GPP\Extracts\38304_CR0176_(Rel-16)_R2-2006634%20Correction%20on%20Naming%20%20of%20the%20List%20of%20Forbidden%20Tracking%20Areas.docx), [R2-2006852](file:///C:\Data\3GPP\Extracts\R2-2006852-CR38304-NPN.docx), [R2-2007841](file:///C:\Data\3GPP\Extracts\R2-2007841%20Correction%20to%2038.304%20on%20any%20cell%20seletion%20in%20NPN.doc), [R2-2008114](file:///C:\Data\3GPP\Extracts\R2-2008114%2038.304%20Correction%20on%20UE%20behavior%20when%20the%20best%20cell%20is%20not%20suitable.docx), [R2-2006633](file:///C:\Data\3GPP\Extracts\38331_CR1722_(Rel-16)_R2-2006633%20Correction%20on%20First%20NPN-Identity%20Usage%20for%20SIB%20Validity.docx), [R2-2007842](file:///C:\Data\3GPP\Extracts\R2-2007842%20Correction%20to%2038.331%20on%20SIB%20validity%20and%20emergency%20services%20for%20NPN.doc), [R2-2006853](file:///C:\Data\3GPP\Extracts\R2-2006853-CR38331-NPN.docx), [R2-2007411](file:///C:\Data\3GPP\Extracts\R2-2007411%20-%20ims-EmergencySupport%20interpretation%20and%20clarification%20for%20SNPN.docx) and [R2-2008016](file:///C:\Data\3GPP\Extracts\R2-2008016_CR1973_38331_Rel16_Corrections%20to%20IntraFreqCAG-CellPerPLMN%20and%20InterFreqCAG-CellList%20in%20SIB3%20and%20SIB4.docx)

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 (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 2020-08-19 07:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008184](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008184.zip)): Wednesday 2020-08-19 09:00 UTC

Updated scope:

* + - Continue the discussion on change 2c in [R2-2006852](file:///C:\Data\3GPP\Extracts\R2-2006852-CR38304-NPN.docx)
    - Discuss whether the flow chart can be modified or a note added to address the issue in [R2-2007841](file:///C:\Data\3GPP\Extracts\R2-2007841%20Correction%20to%2038.304%20on%20any%20cell%20seletion%20in%20NPN.doc)
    - Continue the discussion on [R2-2006633](file:///C:\Data\3GPP\Extracts\38331_CR1722_(Rel-16)_R2-2006633%20Correction%20on%20First%20NPN-Identity%20Usage%20for%20SIB%20Validity.docx)
    - Continue the discussion on [R2-2007842](file:///C:\Data\3GPP\Extracts\R2-2007842%20Correction%20to%2038.331%20on%20SIB%20validity%20and%20emergency%20services%20for%20NPN.doc) (other aspects than emergency services)
    - Discuss whether there is a selected CAG in automatic and manual selection mode (and then the need for changes in [R2-2006853](file:///C:\Data\3GPP\Extracts\R2-2006853-CR38331-NPN.docx))
    - Continue the discussion on the need for the second change in [R2-2007411](file:///C:\Data\3GPP\Extracts\R2-2007411%20-%20ims-EmergencySupport%20interpretation%20and%20clarification%20for%20SNPN.docx)

Updated intended outcome: summary of the offline discussion and agreeable CRs:

Updated intermediate deadline (for companies' feedback): Monday 2020-08-24 12:00 UTC

Updated intermediate deadline (for rapporteur's summary in [R2-2008209](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008209.zip)): Monday 2020-08-24 18:00 UTC

Final scope: Discuss the 38.304 and 38.331 CRs reflecting meeting agreements

Final intended outcome: Agreeable CRs in R2-2008207 and R2-2008215

Final deadline (for companies' feedback): Friday 2020-08-28 06:00 UTC

Final deadline (for final CRs): Friday 2020-08-28 08:00 UTC

[R2-2008184](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008184.zip) Summary of offline 104 - PRN corrections Nokia discussion Rel-16 NG\_RAN\_PRN-Core

Proposed agreements via email:

R2-2006634 Correction on Naming of the List of Forbidden Tracking Areas (CATT)

• Endorse the changes related to "CAG-ID" (issue 1 in the CR) and merge them in a WI CR for 38.304.

• Not to pursue the changes related to the TA (issue 2 in the CR).

R2-2006852 Cell selection and reselection corrections for NPNs (Nokia, Nokia Shanghai Bell)

• Not to pursue the changes in 5.2.3.1 (issue 1) in the CR)

• Not to pursue the changes related to "Inter-RAT" (issue 2a in the CR)

R2-2008114 38.304 Correction on UE behavior when the best cell is not suitable (vivo, Nokia, Nokia Shanghai Bell)

• Not to pursue the 1st change

• Endorse the 2nd change ("this cell does notis a SNPN cell that belongs to a SNPN that is not equal to the registered or selected SNPN of the UE in SNPN access mode") and merge in a WI CR for 38.304.

R2-2008016 Corrections to IntraFreqCAG-CellPerPLMN and InterFreqCAG-CellList in SIB3 and SIB4 (Samsung Electronics Co., Ltd)

• Endorse the changes of the CR as it is and merge them in a WI CR for 38.331.

Agreements via email - offline 104:

1. On R2-2006634

• Endorse the changes related to "CAG-ID" (issue 1 in the CR) and merge them in a WI CR for 38.304.

• Not to pursue the changes related to the TA (issue 2 in the CR).

1. On R2-2006852

• Not to pursue the changes in 5.2.3.1 (issue 1) in the CR)

• Not to pursue the changes related to "Inter-RAT" (issue 2a in the CR)

1. On R2-2008114

• Not to pursue the 1st change

• Endorse the 2nd change ("this cell does not~~is a SNPN cell that~~ belongs to a SNPN that is not equal to the registered or selected SNPN of the UE in SNPN access mode") and merge in a WI CR for 38.304.

1. On R2-2008016

• Endorse the changes of the CR as it is and merge them in a WI CR for 38.331.

Proposals for further discussion:

R2-2006852 Cell selection and reselection corrections for NPNs (Nokia, Nokia Shanghai Bell)

• Discuss online except changes in 5.2.3.1 (issue 1 in the CR) changes related to "Inter-RAT" (issue 2a in the CR)

R2-2007841 Correction to 38.304 on any cell seletion in NPN (Huawei, HiSilicon)

• Discuss the CR online after concluding R2-2007404.

R2-2006633 Correction on First NPN-Identity Usage for SIB Validity (CATT)

• Discuss the CR online with R2-2006853.

R2-2007842 Correction to 38.331 on SIB validity and emergency services for NPN (Huawei, HiSilicon)

• Discuss this CR online with R2-2007411

R2-2006853 Corrections for PNI-NPN related parameter selection (Nokia, Nokia Shanghai Bell)

• Discuss the CR online focusing on the following issues

o how to handle the "selected PNI-NPN"

o how UE should handle the case when a cell is shared between a PLMN and PNI-NPNs of that PLMN

R2-2007411 ims-EmergencySupport interpretation and clarification for SNPN (Ericsson)

• Discuss this CR online with R2-2007842 (after concluding R2-2007404)

[R2-2008209](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008209.zip) Summary of offline 104 - PRN corrections Nokia - second round discussion Rel-16 NG\_RAN\_PRN-Core

Proposals for agreement without further discussion

Proposal 1.1a: Remove the following text from clause 5.2.4.4 of 38.304 (in the WI CR): "For a UE operating in SNPN AM and in shared spectrum channel access, if the highest ranked cell or best cell according to absolute priority reselection rules is a cell which is not suitable due to not broadcasting the registered or selected SNPN ID, the UE shall not consider this cell as candidate for cell reselection but should continue to consider other cells on the same frequency for cell reselection."

Proposal 1.1b: Remove the 1st occurrence of the following sentence from clause 5.2.4.4 of 38.304 (in the WI CR): "If the UE is redirected under NR control to a frequency for which the timer is running, any limitation on that frequency shall be removed"

Proposal 2.1: Add the following changes from R2-2006633 to the WI CR:

a) Change “NPN-Identity” to “NPN identity” which is not an IE structure but only represents the first NPN ID in the list in section 5.2.2.2.1

b) Other editorial changes proposed in the CR

Proposal 2.2: Add the following change from R2-2007842 to the WI CR: remove the reference to TS 23.501 for NPN identity in clause 5.2.2.2.1

Agreements via email - from offline 104:

1. Remove the following text from clause 5.2.4.4 of 38.304 (in the WI CR): "For a UE operating in SNPN AM and in shared spectrum channel access, if the highest ranked cell or best cell according to absolute priority reselection rules is a cell which is not suitable due to not broadcasting the registered or selected SNPN ID, the UE shall not consider this cell as candidate for cell reselection but should continue to consider other cells on the same frequency for cell reselection."
2. Remove the 1st occurrence of the following sentence from clause 5.2.4.4 of 38.304 (in the WI CR): "If the UE is redirected under NR control to a frequency for which the timer is running, any limitation on that frequency shall be removed"

3. Add the following changes from R2-2006633 to the WI CR:

a) Change “NPN-Identity” to “NPN identity” which is not an IE structure but only represents the first NPN ID in the list in section 5.2.2.2.1

b) Other editorial changes proposed in the CR

4. Add the following change from R2-2007842 to the WI CR: remove the reference to TS 23.501 for NPN identity in clause 5.2.2.2.1

Proposals that require further discussion

Proposal 1.2: Discuss online whether any of the following options can be agreed:

• Option 1) Add the following clarification to section 5.2.6 and 5.2.7: "the UE shall continue to search for an acceptable cell of any PLMN or a suitable cell for any SNPN"

• Option 2) Add the following clarification to section 5.2.6 and 5.2.7: "the UE not in SNPN AM mode shall attempt to find an acceptable cell of any PLMN to camp on”

* Lenovo prefers to do nothing; also think that option 1 is not correct.
* LG prefers option 2.
* Huawei thinks that UEs in SNPN mode cannot perform emergency calls not even on a public PLMN.
* Agree to go for option 2. Include changes in the 304 CR

Proposal 2.3: Discuss online whether the following changes can be agreed:

• Clause 5.2.2.4.2: If there is a manually selected CAG-ID or "Allowed CAG list" containing one or more CAG-IDs broadcast by the cell then, AS reports the TA and Cell ID from the npn-IdentityInfoList to upper layers.

• Clause 5.3.3.4 and 5.3.13.4: If there is a manually selected CAG-ID or "Allowed CAG list" containing one or more CAG-IDs broadcast by the cell, then refer to network ID from the npn-IdentityInfoList in RRCSetupComplete and in RRCResumeComplete messages.

• Clause 5.3.14.2: If there is a manually selected CAG-ID or "Allowed CAG list" containing one or more CAG-IDs broadcast by the cell, then use the UAC parameters broadcast for the PNI-NPNs of the selected/registered PLMN by the cell.

* Nokia reports that companies think this is the intended good UE behaviour but would prefer to clarify this explicitly
* LG suggests to have note and not normative text for the 2 cases (with and without "CAG only" indication).
* ZTE agrees with the 3 sub-proposals and clarify this in AS layer.
* Huawei would like to clarify that selected PLMN is chosen by NAS and selected CAG is chosen by NAS in manual mode and by AS in automatic mode. Other companies are not sure
* Issue postponed to the next meeting

Proposal 2.4: Discuss online that it should be documented in 38.331 that the UE in SNPN AM ignores ims-EmergencySupport in SIB1 in Rel-16

* Intel/QC do not think this is needed. This is clear from other specs

Other

[R2-2007404](file:///C:\Data\3GPP\Extracts\R2-2007404%20-%20Limited%20services%20and%20SNPN%20Access%20Mode.docx) Limited services and SNPN Access Mode Ericsson discussion Rel-16 NG\_RAN\_PRN-Core

Observation 1 If a UE cannot get normal service from a suitable SNPN cell, the specification leads to no service at all, irrespective of if there is coverage for limited service (emergency, PWS) from PLMNs

Observation 2 A reasonable UE implementation may switch from SNPN Access Mode when no service is available, at least to get to a limited service state in a PLMN. To then switch back to a (possibly a preferred) SNPN cell, yet another access mode change needs to take place.

Observation 3 Going forward, when emergency services are supported for SNPN, it will likely allow a UE in SNPN access mode that is within coverage of an SNPN that it cannot access for normal service, to camp on an acceptable cell in any SNPN, to get limited services. Further, it seems unnecessary to restrict the UE be camping only on SNPN cells, but it should also be allowed to find and select acceptable cells on PLMNs

Proposal 1 Send an LS to SA1 (requirements) and SA2 (with CT1 in Cc) and propose that the standard should support that if UE in SNPN access mode cannot get normal service, it should be allowed to select and camp on an acceptable PLMN cell, enter camped on any cell state, without having to switch away from SNPN access mode. This would also mean that UE regularly is trying to return to SNPN for normal service/camping.

- Huawei thinks we don't need to challenge SA2 agreements at this stage. Nokia shares the same view and think this was an intentional decision, there are no requirements from SA1 and it's too late to change for Rel-16.

- Intel thinks this is possible by UE implementation and we don't need to introduce further changes.

* Noted

## 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

Email ma*x* expectation: 2 email threads

### 6.13.1 User plane corrections

*MAC corrections*

Candidate RS ID

[R2-2006779](file:///C:\Data\3GPP\Extracts\R2-2006779_CR0784_38321_Rel16_Corrections%20to%20description%20of%20Candidate%20RS%20ID%20in%20BFR%20MAC%20CE.docx) Corrections to description of Candidate RS ID in BFR MAC CE Samsung Electronics Co., Ltd CR Rel-16 38.321 16.1.0 0784 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Revised in [R2-2008194](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008194.zip) with changes agreed in the offline 101

[R2-2008194](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008194.zip) Corrections to description of Candidate RS ID in BFR MAC CE Samsung Electronics Co., Ltd CR Rel-16 38.321 16.1.0 0784 1 F NR\_eMIMO-Core

* Agreed unseen

[R2-2007525](file:///C:\Data\3GPP\Extracts\R2-2007525%20CR%20on%2038.321%20for%20BFR%20MAC%20CE%20design.docx) CR on 38.321 for BFR MAC CE design ZTE Corporation, Sanechips CR Rel-16 38.321 16.1.0 0826 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Not pursued (as similar changes are covered in [R2-2008194](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008194.zip))

BFR cancellation

[R2-2006797](file:///C:\Data\3GPP\Extracts\R2-2006797%2038321%20CR0785%20Clarification%20on%20the%20BFR%20MAC%20CE%20report.docx) Clarification on the BFR MAC CE report vivo CR Rel-16 38.321 16.1.0 0785 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Vivo would like to clarify that NR is different from LTE and there would be some drawback in not accepting the CR. However they are ok to go for the majority view
* Not pursued

[R2-2007485](file:///C:\Data\3GPP\Extracts\R2-2007485%20Correction%20on%20the%20BFR%20cancellation.docx) Correction on the BFR cancellation Nokia, Nokia Shanghai Bell CR Rel-16 38.321 16.1.0 0824 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Revised in [R2-2008195](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008195.zip) with changes agreed in the offline 101

[R2-2008195](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008195.zip) Correction on the BFR cancellation Nokia, Nokia Shanghai Bell CR Rel-16 38.321 16.1.0 0824 - F NR\_eMIMO-Core

* Agreed unseen

[R2-2007736](file:///C:\Data\3GPP\Extracts\R2-2007736%20CR0837_BFR%20Cancellation%20regarding%20MAC%20reset.docx) BFR Cancellation regarding MAC reset ASUSTek CR Rel-16 38.321 16.1.0 0837 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* Agreed

BFR procedure

[R2-2007526](file:///C:\Data\3GPP\Extracts\R2-2007526%20CR%20on%2038.321%20for%20BFR%20procedure.docx) CR on 38.321 for BFR procedue ZTE Corporation, Sanechips CR Rel-16 38.321 16.1.0 0827 - F NR\_eMIMO-Core

* Initially discussed in offline 101
* ZTE wonders if all companies agree that with the acronym BFR we refer to Scell Beam Failure Recovery. CATT, Samsung, Qualcomm and Intel think the suggested correction is correct but maybe not essential. Ericsson thinks that this would be misleading in the SpCell case.
* Not pursued

Other corrections

[R2-2007895](file:///C:\Data\3GPP\RAN2\Docs\R2-2007895.zip) Correction on AP and SP SRS MAC-CE Asia Pacific Telecom co. Ltd discussion NR\_eMIMO-Core

* Initially discussed in offline 101
* Nokia thinks we already have similar text in 5.18.13 so we don't need the change. Samsung is fine with proposal in TP1, at the same time voiding section 5.18.13. Nokia could accept that, but think we need to check all aspects, including the title of the section
* For the second change, Ericsson suggests to use the same wording as in the Rel-15 MAC CE
* Draft an actual CR in [R2-2008196](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008196.zip) based on the status of the offline discussion (considering both proposals 1&2)
* Continue in the follow-up of offline 101

[R2-2008196](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008196.zip) Correction on AP and SP SRS MAC-CE Asia Pacific Telecom co. Ltd CR Rel-16 38.321 16.1.0 0878 - F NR\_eMIMO-Core

* Agreed

[R2-2008053](file:///C:\Data\3GPP\Extracts\R2-2008053.docx) Correction on the definition of Ci field in BFR MAC CE Qualcomm Incorporated draftCR Rel-16 38.321 16.1.0 F NR\_eMIMO-Core

* Initially discussed in offline 101
* Vivo thinks the problem described in the CR is related to RAN1 or RAN4 and should be discussed there first.
* Ericsson would not like to change the definition of the Ci field. Also think that this could be address in RAN4 to change the timing requirements.
* Continue in the follow-up of offline 101
* Ok to add a Note as agreed in offline 101 - round 2
* Draft a CR in R2-2008219

R2-2008219 Correction on BFR MAC CE generation Qualcomm Incorporated, Samsung CR Rel-16 38.321 16.1.0 0885 - F NR\_eMIMO-Core

* …
* [AT111e][101][eMIMO] MAC corrections (Samsung)

Initial scope: Discuss the CRs in [R2-2006779](file:///C:\Data\3GPP\Extracts\R2-2006779_CR0784_38321_Rel16_Corrections%20to%20description%20of%20Candidate%20RS%20ID%20in%20BFR%20MAC%20CE.docx), [R2-2007525](file:///C:\Data\3GPP\Extracts\R2-2007525%20CR%20on%2038.321%20for%20BFR%20MAC%20CE%20design.docx), [R2-2006797](file:///C:\Data\3GPP\Extracts\R2-2006797%2038321%20CR0785%20Clarification%20on%20the%20BFR%20MAC%20CE%20report.docx), [R2-2007485](file:///C:\Data\3GPP\Extracts\R2-2007485%20Correction%20on%20the%20BFR%20cancellation.docx), [R2-2007736](file:///C:\Data\3GPP\Extracts\R2-2007736%20CR0837_BFR%20Cancellation%20regarding%20MAC%20reset.docx), [R2-2007526](file:///C:\Data\3GPP\Extracts\R2-2007526%20CR%20on%2038.321%20for%20BFR%20procedure.docx), [R2-2007895](file:///C:\Data\3GPP\Extracts\._R2-2007895.doc) and [R2-2008053](file:///C:\Data\3GPP\Extracts\R2-2008053.docx)

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 (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 2020-08-18 07:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008181](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008181.zip)): Tuesday 2020-08-18 09:00 UTC

Updated scope: Draft the CR in [R2-2008196](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008196.zip) and continue the discussion on [R2-2008053](file:///C:\Data\3GPP\Extracts\R2-2008053.docx), e.g. to see whether this issue should be addressed in RAN2 or other groups.

Updated intended outcome: Agreeable CR in [R2-2008196](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008196.zip) and summary of the discussion in [R2-2008197](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008197.zip)

New deadline (for companies' feedback): Wednesday 2020-08-26 07:00 UTC

Updated deadline (for rapporteur's summary in [R2-2008197](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008197.zip)): Wednesday 2020-08-26 09:00 UTC

Final scope: Draft R2-2008219 and discuss implications of the reply LS from RAN1 (if it will be made available with a R2 number before the end of the meeting)

Final intended outcome: Agreeable CR in R2-2008219 and summary of the discussion on the implications of the reply LS from RAN1 in R2-2008221 (if there will be consensus for a further CR, a 1-week email discussion will be allocated for this)

Final deadline (for companies' feedback): Friday 2020-08-28 06:00 UTC

Final deadline (for uploading R2-2008219 and R2-2008221): Friday 2020-08-28 08:00 UTC

[R2-2008181](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008181.zip) Summary of offline 101 - MAC corrections for eMIMO Samsung discussion Rel-16 NR\_eMIMO-Core

Proposal 1: Agree the CR R2-2006779 with TP as shown below:

“Candidate RS ID: This field is set to the index of an SSB with SS-RSRP above rsrp-ThresholdBFR amongst the SSBs in candidateBeamRSSCellList or to the index of a CSI-RS with CSI-RSRP above rsrp-ThresholdBFR amongst the CSI-RSs in candidateBeamRSSCellList. Index of an SSB or CSI-RS is the index of an entry in candidateBeamRSSCellList corresponding to the SSB or CSI-RS. Index 0 corresponds to the first entry in the candidateBeamRSSCellList, index 1 corresponds to the second entry in the list and so on. The length of this field is 6 bits.”

Proposal 2: Agree the CR R2-2007736 as is.

Proposal 3: Agree the CR R2-2007485 with TP as shown below:

“Pending SR triggered prior to the MAC PDU assembly for beam failure recovery of an SCell shall be cancelled and respective sr-ProhibitTimer shall be stopped when the MAC PDU is transmitted and this PDU includes an BFR MAC CE or Truncated BFR MAC CE which contains beam failure recovery information of that SCell. Pending SR triggered for beam failure recovery of an SCell shall be cancelled upon deactivation of that SCell (as defined in clause 5.9).”

Proposal 4: The CRs CR R2-2006797 and R2-2007526 are not pursued.

Proposal 5: Further discuss the CR R2-2008053 online.

Proposal 6: Approve the Text Proposal 1 (in R2-2007895) for activation/deactivation of SP SRS resource set. The redundant sub-clause 5.18.8 is removed (i.e. can be Voided).

Agreements:

1. Agree the CR R2-2006779 with TP as shown below:

“Candidate RS ID: This field is set to the index of an SSB with SS-RSRP above rsrp-ThresholdBFR amongst the SSBs in candidateBeamRSSCellList or to the index of a CSI-RS with CSI-RSRP above rsrp-ThresholdBFR amongst the CSI-RSs in candidateBeamRSSCellList. Index of an SSB or CSI-RS is the index of an entry in candidateBeamRSSCellList corresponding to the SSB or CSI-RS. Index 0 corresponds to the first entry in the candidateBeamRSSCellList, index 1 corresponds to the second entry in the list and so on. The length of this field is 6 bits.”

1. Agree the CR R2-2007736 as is.
2. Agree the CR R2-2007485 with TP as shown below (also keep the change in 5.17)

“Pending SR triggered prior to the MAC PDU assembly for beam failure recovery of an SCell shall be cancelled and respective sr-ProhibitTimer shall be stopped when the MAC PDU is transmitted and this PDU includes an BFR MAC CE or Truncated BFR MAC CE which contains beam failure recovery information of that SCell. Pending SR triggered for beam failure recovery of an SCell shall be cancelled upon deactivation of that SCell (as defined in clause 5.9).

4. The CRs CR R2-2006797 and R2-2007526 are not pursued.

[R2-2008197](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008197.zip) Summary of offline 101 - MAC corrections for eMIMO - second round Samsung discussion Rel-16 NR\_eMIMO-Core

Proposal 1: Agree the CR R2-2008196.

* Agreed

Proposal 2: Add a note to clarify that information about a failed SCell may not be included in MAC CE until the candidate RSs are evaluated according to requirements in RAN4 specification.

Example TP for the NOTE:

“NOTE: When the MAC entity has pending BFR for an SCell and the candidate beam detection is not completed according to the requirement in [x, 38.133], it need not report SCell as failed in a BFR MAC CE or truncated BFR MAC CE; MAC CE need not be generated if there is no other failed SCell to report.”

Agreement:

1. Add a note to clarify that information about a failed SCell may not be included in MAC CE until the candidate RSs are evaluated according to requirements in RAN4 specification.

Example TP for the NOTE:

“NOTE: When the MAC entity has pending BFR for an SCell and the candidate beam detection is not completed according to the requirement in [x, 38.133], it need not report SCell as failed in a BFR MAC CE or truncated BFR MAC CE; MAC CE need not be generated if there is no other failed SCell to report.”

R2-2008221 Summary of offline 101 - MAC corrections for eMIMO - third round Samsung discussion Rel-16 NR\_eMIMO-Core

On LS exchange with RAN1

[R2-2007575](file:///C:\Data\3GPP\Extracts\R2-2007575%20MAC%20CE%20SRS.docx) On serving cell set based SRS spatial relation indication MAC CE Ericsson discussion Rel-16 NR\_eMIMO-Core

* Comeback during the CB session next week (if a reply LS will be received from RAN1)
* Noted

Withdrawn

[R2-2007544](file:///C:\Data\3GPP\Extracts\R2-2007544.docx) Correction on the definition of Ci field in BFR MAC CE Qualcomm Incorporated draftCR Rel-16 38.321 16.1.0 F NR\_eMIMO-Core Withdrawn

### 6.13.2 Control plane corrections

[R2-2007161](file:///C:\Data\3GPP\Extracts\R2-2007161%2038331CR%20Correction%20on%20number%20of%20CORESET%20per%20BWP.docx) Correction on number of CORESETs per BWP OPPO CR Rel-16 38.331 16.1.0 1793 - F NR\_eMIMO-Core

* Ericsson thinks the first change was already in an original TP and lost in the implementation. So it's ok to have. However Ericsson thinks that we should keep the sentence on Rel-15. For Rel-16 we don't need an additional sentence because there is an UE capability for this.
* Huawei thinks we cannot simply change 3 to 5, as this depends on UE capability.
* Continue the discussion in offline 112
* Revised in [R2-2008198](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008198.zip)

[R2-2008198](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008198.zip) Correction on number of CORESETs per BWP OPPO, Ericsson CR Rel-16 38.331 16.1.0 1793 1 F NR\_eMIMO-Core

* Nokia thinks this is mostly fine but referring to TS 38.213 only means that it's very difficult to understand the restrictions. Ericsson wonders if including the exact section number (10.1) is ok
* Intel and QC also think we should add a reference to 10.1
* Revised in R2-2008222 and R2-2008223 (New Rel-15 and Rel-16 "NR\_newRAT-Core" CRs)

R2-2008222 Correction on number of CORESETs per BWP OPPO, Ericsson CR Rel-15 38.331 15.10.0 2004 - F NR\_newRAT-Core

R2-2008223 Correction on number of CORESETs per BWP OPPO, Ericsson CR Rel-16 38.331 16.1.0 2005 - A NR\_newRAT-Core

R2-2008224 Correction on number of CORESETs per BWP Ericsson, Oppo CR Rel-15 38.306 15.10.0 0405 - F NR\_newRAT-Core

R2-2008225 Correction on number of CORESETs per BWP Ericsson, Oppo CR Rel-16 38.306 16.1.0 0406 - A NR\_newRAT-Core

[R2-2007577](file:///C:\Data\3GPP\Extracts\R2-2007577%2038.331%20NReMIMO.docx) Miscellaneous eMIMO corrections Ericsson CR Rel-16 38.331 16.1.0 1863 - F NR\_eMIMO-Core

* Nokia is fine to remove the text in the first change and also remove "that is configured". But they would not like to use the wording "UE may expect to…". QC is fine with the principle of the CR but would like to consider other similar changes for other modes. Apple suggests to indicate which RAN1 spec, not only the sub-clause.
* continue the discussion in offline 112
* Revised in [R2-2008199](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008199.zip)

[R2-2008199](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008199.zip) Miscellaneous eMIMO corrections Ericsson CR Rel-16 38.331 16.1.0 1863 1 F NR\_eMIMO-Core

* Revised in R2-2008226

R2-2008226 Miscellaneous eMIMO corrections Ericsson CR Rel-16 38.331 16.1.0 1863 2 F NR\_eMIMO-Core

* [AT111e][112][eMIMO] RRC Corrections (Ericsson)

Scope: Continue the discussion on [R2-2007161](file:///C:\Data\3GPP\Extracts\R2-2007161%2038331CR%20Correction%20on%20number%20of%20CORESET%20per%20BWP.docx) and [R2-2007577](file:///C:\Data\3GPP\Extracts\R2-2007577%2038.331%20NReMIMO.docx)

Intended outcome: Agreeable CRs in [R2-2008198](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008198.zip) and [R2-2008199](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008199.zip)

Initial deadline (for companies' feedback): Wednesday 2020-08-26 07:00 UTC

Initial deadline (for final CRs): Wednesday 2020-08-26 09:00 UTC

Final scope: Continue the discussion on the (e)MIMO RRC CRs

Final intended outcome: Agreeable CRs in R2-2008222, R2-2008223, R2-2008224, R2-2008225, R2-2008226

Final deadline (for companies' feedback): Friday 2020-08-28 06:00 UTC

Final deadline (for final CRs): Friday 2020-08-28 08:00 UTC

[R2-2008217](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008217.zip) Summary of offline 112 - RRC corrections for eMIMO Ericsson discussion Rel-16 NR\_eMIMO-Core

Proposal 1 Agree to refer to TS 38.213 and to remove the restrictions from 38.331, for both versions of the specification.

* Ericsson clarifies that both a Rel-15 and a Rel-16 CR are needed.
* Nokia is not sure it will be easy to have R15 CR.
* Agreed. Draft 2 CRs for 38.331 (R15 and R16) (can comeback to the R15 CR if we find issues)

Proposal 3 RAN2 to discuss to add reference to TS 38.213 in TS 38.306 in field description of multipleCORESET as well as the “up to 3”.

* Oppo wonders if "up to 3 in addition to CORESET#0 is ok" is correct. Nokia agrees with Oppo.
* Principle is agreed. Check the wording to ensure that it's up to 3 in total per BWP (including CORESET#0)
* Draft 2 CRs for 38.306 (R15 and R16) (can comeback to the R15 CR if we find issues)

Proposal 3bis RAN2 to discuss to add reference to TS 38.213 in TS 38.306 in field description of multiDCI-multiTRP as well as the “up to total 16 CORESETs per UE”.

* Further to discuss as part of offline 015 to add reference to TS 38.213 in TS 38.306 in field description of multiDCI-multiTRP as well as the “up to total 16 CORESETs per UE”.

Proposal 4 Agree 38.331 CR in R2-2008199

## 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

Email max expectation: 5 email threads

### 6.14.1 User plane corrections

### 6.14.2 Control plane corrections

CLI - Reply LS from RAN3 and related discussion

[R2-2006524](file:///C:\Data\3GPP\Extracts\R2-2006524_R3-204399.docx) Response LS on Exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI R3-204399; contact: ZTE) RAN3 LS in Rel-16 NR\_CLI\_RIM To:RAN2, RAN1 Cc:RAN4

* Discussed in offline 102
* Noted

[R2-2006898](file:///C:\Data\3GPP\Extracts\R2-2006898%20Discussion%20on%20RAN3%20LS%20about%20SRS%20resource%20exchange.docx) Discussion on RAN3 LS about SRS exchange ZTE Corporation, Sanechips discussion Rel-16 NR\_CLI\_RIM-Core

* Discussed in offline 102
* Noted

[R2-2007355](file:///C:\Data\3GPP\Extracts\R2-2007355-SRS-RSRP%20Xn.docx) Exchange of SRS Information across GNB for UE CLI Nokia, Nokia Shanghai Bell discussion Rel-16

* Discussed in offline 102
* Noted

[R2-2006899](file:///C:\Data\3GPP\Extracts\R2-2006899%20Draft%20reply%20LS%20on%20exchange%20of%20information%20related%20to%20SRS-RSRP%20measurement%20resource%20configuration%20for%20UE-CLI.doc) Draft reply LS on exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI ZTE Corporation LS out Rel-16 NR\_CLI\_RIM-Core To:RAN3 Cc:RAN1, RAN4

* Revised in [R2-2008182](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008182.zip) based on the outcome of offline 102

[R2-2008182](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008182.zip) Draft reply LS on exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI ZTE Corporation LS out Rel-16 NR\_CLI\_RIM-Core To:RAN3 Cc:RAN1, RAN4

* QCs think the latest version is a reduced version of what was discussion but it's acceptable for them.
* Huawei and Ericsson think that the frequency is up to gNB implementation and there is no additional information that we can provide.
* LG and ZTE think that for this CLI measurement purpose the SRS configuration would be semi-static. QC agrees.
* Continue the discussion in a follow-up of offline 102
* Revised in [R2-2008200](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008200.zip)

[R2-2008200](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008200.zip) Draft reply LS on exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI ZTE Corporation LS out Rel-16 NR\_CLI\_RIM-Core

* Huawei thinks that at least the LS reflects the views in RAN2 and can accept it, with the removal of "While"
* Remove "While"
* remove Draft, put RAN2 as source
* revised in [R2-2008220](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008220.zip)

[R2-2008220](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008220.zip) Reply LS on exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI ZTE Corporation LS out Rel-16 NR\_CLI\_RIM-Core

* Agreed (unseen)

[R2-2007356](file:///C:\Data\3GPP\Extracts\R2-2007356-Draft-LS-Response.docx) [Draft] Reply LS to the LS on Exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI Nokia, Nokia Shanghai Bell LS out Rel-16 NR\_CLI\_RIM To:RAN3 Cc:RAN4

* Discussed in offline 102
* Noted

[R2-2007851](file:///C:\Data\3GPP\Extracts\R2-2007851%20Draft%20LS%20on%20Update%20frequency%20of%20SRS-RSRP%20configuration%20for%20CLI.doc) Draft LS on Update frequency of SRS-RSRP configuration for CLI Samsung LS out Rel-16 NR\_CLI\_RIM To:RAN WG3 Cc:RAN WG1, RAN WG4

* Discussed in offline 102
* Noted
* [AT111e][102][CLI] Reply LS to RAN3 (ZTE)

Scope: Attempt drafting a reply LS to the incoming LS in [R2-2006524](file:///C:\Data\3GPP\Extracts\R2-2006524_R3-204399.docx) based on the related contributions in [R2-2006898](file:///C:\Data\3GPP\Extracts\R2-2006898%20Discussion%20on%20RAN3%20LS%20about%20SRS%20resource%20exchange.docx) and [R2-2007355](file:///C:\Data\3GPP\Extracts\R2-2007355-SRS-RSRP%20Xn.docx) and draft reply LS proposals in [R2-2006899](file:///C:\Data\3GPP\Extracts\R2-2006899%20Draft%20reply%20LS%20on%20exchange%20of%20information%20related%20to%20SRS-RSRP%20measurement%20resource%20configuration%20for%20UE-CLI.doc), [R2-2007356](file:///C:\Data\3GPP\Extracts\R2-2007356-Draft-LS-Response.docx) and [R2-2007851](file:///C:\Data\3GPP\Extracts\R2-2007851%20Draft%20LS%20on%20Update%20frequency%20of%20SRS-RSRP%20configuration%20for%20CLI.doc)

Initial intended outcome: initial draft reply LS to RAN3 in [R2-2008182](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008182.zip):

Initial deadline (for companies' feedback): Tuesday 2020-08-18 10:00 UTC

Initial deadline (for initial draft reply LS in [R2-2008182](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008182.zip)): Tuesday 2020-08-18 12:00 UTC

Updated Scope: Continue the discussion and attempt a revision of the reply LS

Updated intended outcome: revised draft reply LS to RAN3 in [R2-2008200](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008200.zip)

Updated interim deadline (for companies' feedback): Wednesday 2020-08-26 00:00 UTC

Updated interim deadline (for revised draft reply LS in [R2-2008200](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008200.zip)): Wednesday 2020-08-26 02:00 UTC

If the draft reply LS in [R2-2008200](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008200.zip) will be not challenged until Wednesday 2020-08-26 12:00, it will be declared as agreed by the session chair. Otherwise the discussion will continue until the CB online session on Wednesday 2020-08-26.

CLI - other

[R2-2007989](file:///C:\Data\3GPP\Extracts\R2-2007989%20CR%20on%20CLI%20configuration.docx) CR on CLI configuration LG Electronics Inc. CR Rel-16 38.331 16.1.0 1960 - F NR\_CLI\_RIM

* QC thinks this should have been submitted as a revision of the in-principle agreed CR. Interoperability should be added and "other specs affected" could be removed.
* Samsung thinks we should discuss whether to have a NBC change or not. For this CR this is fine. Also Ericsson agrees.
* Provide an update in [R2-2008201](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008201.zip), as revision of the IPA CR in [R2-2004240](file:///C:\Data\3GPP\archive\RAN2\RAN2%23109bis\Tdocs\R2-2004240.zip) that was not included in the final CR in June. Remove "other specs affected". Also include the impact analysis/interoperability part
* Discussed in offline 113

[R2-2008201](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008201.zip) CR on CLI configuration LG Electronics Inc. CR Rel-16 38.331 16.1.0 1533 2 F NR\_CLI\_RIM

* VC: as per RAN2 chair guidance the sentence "This CR is considered mandatory to support [the impacted functionality]" should be added to the coversheet.
* revised in R2-2008218 to add "This CR is considered mandatory to support CLI" in the coversheet (at the end of the interoperability statement in the summary of change)

R2-2008218 CR on CLI configuration LG Electronics Inc. CR Rel-16 38.331 16.1.0 1533 3 F NR\_CLI\_RIM

* Agreed (unseen)
* [AT111e][113][CLI] RRC CR (LG)

Scope: Revise the CR in [R2-2007989](file:///C:\Data\3GPP\Extracts\R2-2007989%20CR%20on%20CLI%20configuration.docx)

Intended outcome: Agreeable CR in [R2-2008201](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008201.zip)

Initial deadline (for companies' feedback): Wednesday 2020-08-26 07:00 UTC

Initial deadline (for final CR): Wednesday 2020-08-26 09:00 UTC

L1enh\_URLLC

[R2-2007080](file:///C:\Data\3GPP\Extracts\38331_CR1783r0_(Rel-16)_R2-2007080.docx) PUCCH configuration with subslotLengthForPUCCH-r16 CATT CR Rel-16 38.331 16.1.0 1783 - F NR\_L1enh\_URLLC-Core

* Ericsson thinks this should be captured in RAN1 specs. Huawei thinks this should be captured somewhere and this is not in RAN1 spec at the moment. ZTE thinks the principle is ok but would like to have more time to check where the description should go
* CATT suggests that the topic for the offline could be to discuss the wording for a possible RRC CR \*IF\* RAN1 will decide that this will not be described in RAN1 specs.
* Continue in offline 114

[R2-2007862](file:///C:\Data\3GPP\Extracts\R2-2007862%20Converting%20suffix%20ForDCI-Formatx-y%20for%20shorter%20RRC%20parameter%20names.docx) Converting suffix ForDCI-Formatx-y for shorter RRC parameter names Huawei, HiSilicon CR Rel-16 38.331 16.1.0 1937 - F NR\_L1enh\_URLLC-Core

* Nokia thinks this a good idea. QC thinks that in the main session it was agreed to do this and also inform RAN1. Ericsson is fine with this.
* Ok with the principle but the CR needs revision.
* Revised in [R2-2008203](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008203.zip)
* Continue in offline 114

[R2-2008203](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008203.zip) Miscellaneous RRC corrections for NR eURLLC Huawei, HiSilicon, CATT CR Rel-16 38.331 16.1.0 1937 1 F NR\_L1enh\_URLLC-Core

* Agreed
* [AT111e][114][L1enh\_URLLC] RRC CRs (CATT)

Scope: discuss the TP for a possible revision of [R2-2007080](file:///C:\Data\3GPP\Extracts\38331_CR1783r0_(Rel-16)_R2-2007080.docx) and revise [R2-2007862](file:///C:\Data\3GPP\Extracts\R2-2007862%20Converting%20suffix%20ForDCI-Formatx-y%20for%20shorter%20RRC%20parameter%20names.docx)

Intended outcome: Agreeable TP for a possible revision of [R2-2007080](file:///C:\Data\3GPP\Extracts\38331_CR1783r0_(Rel-16)_R2-2007080.docx) in [R2-2008202](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008202.zip)

and agreeable CR in [R2-2008203](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008203.zip)

Initial deadline (for companies' feedback): Wednesday 2020-08-26 07:00 UTC

Initial deadline (for TP in [R2-2008202](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008202.zip) and CR in [R2-2008203](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008203.zip)): Wednesday 2020-08-26 09:00 UTC

[R2-2008202](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008202.zip) Summary of offline 114 - TP for PUCCH configuration with subslotLengthForPUCCH-r16 CATT discussion NR\_L1enh\_URLLC-Core

Proposal 1: The following change: (see TS 38.213 [13], clause 9.1) -> (see TS 38.213 [13], clause 9) in the field description of subslotLengthForPUCCH shall be addressed it in a miscellaneous RRC CR handled in eURLLC WI.

Proposal 2: Agree the updated CR on shorter parameter names in R2-2008203.

## 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: 4 tdocs

Email max expectation: 4 threads

### 8.10.1 Scope, requirements, scenarios, architecture

E.g. understand the WID, confirm the scenarios that shall be addressed, the role of and architecture for Location Service.

Workplan

[R2-2007565](file:///C:\Data\3GPP\Extracts\R2-2007565%20-%20Rel17%20NR-NTN%20workplan.docx) NR\_NTN\_solutions work plan THALES Work Plan Rel-17

* Endorsed

R2-2008186 NR\_NTN\_solutions work plan THALES Work Plan Rel-17

* Withdrawn

[R2-2007431](file:///C:\Data\3GPP\Extracts\R2-2007431%20Discussion%20on%20NTN%20workplan.docx) Discussion on NTN workplan CMCC discussion Rel-17 NR\_NTN\_solutions-Core

Incoming LSs

[R2-2006514](file:///C:\Data\3GPP\Extracts\R2-2006514_R3-202824.doc) Response LS on the “LS out on Location of UEs and associated key issues” (R3-202824; contact: Thales) RAN3 LS in Rel-17 FS\_5GSAT\_ARCH To:SA2, RAN2, SA3-LI

* Noted

[R2-2006532](file:///C:\Data\3GPP\Extracts\R2-2006532_S3i200056.doc) Response LS on the “LS OUT on Location of UEs and associated key issues” (S3i200056; contact: Rogers) SA3-LI LS in Rel-17 FS\_5GSAT\_ARCH To:SA2, RAN2, RAN3 Cc:SA1

* Noted

[R2-2006530](file:///C:\Data\3GPP\Extracts\R2-2006530_S2-2004688.doc) LS on SA WG2 assumptions from conclusion of study on architecture aspects for using satellite access in 5G (S2-2004688; contact: Qualcomm) SA2 LS in Rel-17 FS\_5GSAT\_ARCH To:RAN2, RAN3, CT1

* Discuss a possible reply LS in offline 115

[R2-2006971](file:///C:\Data\3GPP\Extracts\R2-2006971.doc) Discussion of SA2 LS on fixed cell identity Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

* Can be considered in the discussion in offline 115

[R2-2006972](file:///C:\Data\3GPP\Extracts\R2-2006972.doc) [Draft] LS Reply on SA WG2 assumptions on architecture aspects for using Qualcomm Inc LS out Rel-17 NR\_NTN\_solutions-Core To:SA2 Cc:RAN3, CT1

* Can be considered in the discussion in offline 115
* [AT111e][115][NTN] Reply LS to SA2 (Qualcomm)

Scope: Discuss a (possibly intermediate) reply LS to SA2

Intended outcome: Draft reply LS to SA2 in [R2-2008212](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008212.zip)

Deadline (for companies' feedback): Thursday 2020-08-27 02:00 UTC

Deadline (for draft reply LS in [R2-2008212](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008212.zip)): Thursday 2020-08-27 06:00 UTC

If the draft reply LS in [R2-2008212](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008212.zip) will be not challenged until Thursday 2020-08-27 18:00 UTC, it will be declared as agreed by the session chair. Otherwise the discussion will continue in the CB online session on Friday 2020-08-28.

[R2-2008212](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008212.zip) [Draft] LS Reply on SA WG2 assumptions on architecture aspects for using Qualcomm Inc LS out Rel-17 NR\_NTN\_solutions-Core To:SA2 Cc:RAN3, CT1

* ZTE/Intel/Mediatek/Thales/Samsung/LG suggest to remove "RAN2 thinks any potential solution to mapping earth area to fixed cell ID seen by the CN is out of scope of RAN2"
* Huawei prefers to note in meeting minutes that RAN2 will not discuss this further
* Intel is not happy with keeping the sentence but ok to go with the majority
* Still Mediatek would like to remove the sentence
* CATT suggests to remove "fixed"
* Remove "fixed"
* Remove Draft
* Revised in R2-2008229

R2-2008229 LS Reply on SA WG2 assumptions on architecture aspects for using Qualcomm Inc LS out Rel-17 NR\_NTN\_solutions-Core To:SA2 Cc:RAN3, CT1

* Agreed (unseen)

[R2-2008227](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008227.zip) Summary of offline 115 - TP for reply LS to SA2 Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

Proposal 1 Radio cells for NTN can be permanently fixed, temporarily fixed or continuously moving. A moving radio cell covers different Earth area over time and system information including Cell ID moves with the radio cell.

Proposal 2 Any potential solution to mapping earth area to fixed cell ID seen by the CN is out of scope of RAN2

Proposal 3 Send LS reply provided in [4].

Scope & scenarios

[R2-2007572](file:///C:\Data\3GPP\Extracts\R2-2007572%20-%20NR%20NTN%20reference%20scenarios.docx) NR NTN Reference scenarios definition for Rel-17 normative phase THALES discussion Rel-17

* Discussed in offline 105

[R2-2007537](file:///C:\Data\3GPP\Extracts\R2-2007537%20NTN%20Overview.docx) NTN scope, scenarios, architecture, and requirements Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

* Discussed in offline 105

[R2-2006630](file:///C:\Data\3GPP\Extracts\R2-2006630_Further%20Clarifications%20on%20the%20NTN%20WID.docx) Further Clarifications on the NTN WID CATT discussion Rel-17 NR\_NTN\_solutions-Core

* Discussed in offline 105
* [AT111e][105][NTN] Workplan, scope and scenarios (Thales)

Scope: Discuss the workplan in [R2-2007565](file:///C:\Data\3GPP\Extracts\R2-2007565%20-%20Rel17%20NR-NTN%20workplan.docx) and the proposals in [R2-2007572](file:///C:\Data\3GPP\Extracts\R2-2007572%20-%20NR%20NTN%20reference%20scenarios.docx), [R2-2007537](file:///C:\Data\3GPP\Extracts\R2-2007537%20NTN%20Overview.docx), [R2-2006630](file:///C:\Data\3GPP\Extracts\R2-2006630_Further%20Clarifications%20on%20the%20NTN%20WID.docx) (and possibly others from contributions in 8.10.1)

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

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

Initial deadline (for companies' feedback): Thursday 2020-08-20 16:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008185](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008185.zip)): Thursday 2020-08-20 18:00 UTC

Updated scope: Continue the discussion on proposals in [R2-2008185](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008185.zip), from proposal 2.6.1 onwards

Final intended outcome: revised workplan and summary of the offline discussion with e.g.:

* + - List of proposals for agreement
    - List of proposals that require online discussions

Final deadline (for companies' feedback): Thursday 2020-08-27 06:00 UTC

Final deadline (for rapporteur's summary in [R2-2008228](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008228.zip)): Thursday 2020-08-27 10:00 UTC

Proposals marked "for agreement" in [R2-2008228](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008228.zip) not challenged until Thursday 2020-08-27 18:00 UTC will be declared as agreed by the session chair. For the rest the discussion will continue in the CB online session on Friday 2020-08-28.

[R2-2008185](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008185.zip) Summary of offline 105 - NTN Workplan, scope and scenarios Thales discussion Rel-16 NR\_NTN\_solutions-Core

Proposal 2.1.1: Six transparent payload based satellite reference scenarios are considered for the Rel-17 work item “NR\_NTN\_solutions” characterised in the table below:

Table 2-1 Reference satellite scenarios for Rel-17 work item “NR\_NTN\_solutions”

| *Scenarios* | *C1.1* | *C1.2* | *C2.1* | *C2.2* | *A1* | *A2* |
| --- | --- | --- | --- | --- | --- | --- |
| *Orbit* | *LEO @ 600 km altitude* | *LEO @ 600 km altitude* | *LEO @ 600 km altitude* | *LEO @ 600 km altitude* | *GEO @ 35,786 km altitude* | *GEO @ 35,786 km altitude* |
| *Frequency band* | *Sub 6GHz* | *Above 6GHz* | *Sub 6GHz* | *Above 6GHz* | *Sub 6 GHz* | *Above 6 GHz* |
| *Beams generation* | *Earth fixed beams (Note 1)* | *Earth fixed beams (Note 1)* | *Earth moving beams* | *Earth moving beams* | *Earth fixed beams* | *Earth fixed beams* |

|  |
| --- |
| *NOTE 1: Each satellite has the capability to steer beams towards fixed points on earth using beam-forming techniques. This is applicable for a period of time corresponding to the visibility time of the satellite* |

Proposal 2.1.2bis: HAPS/ATG reference scenarios are implicitly considered for the Rel-17 work item “NR\_NTN\_solutions”. They shall be defined by the proponents

* Apple would like to limit to earth fixed beams
* VC wonders the impact in RAN2 of the LEO satellites altitude
* Thales thinks RAN2 needs to consider altitude at least for delay values
* Nokia thinks that if we cover 600km altitude then we would have to separately consider 1200km
* QC thinks we don't need to limit the scenario to 600km. If there is some restriction it might come from RAN1
* RAN2 stick to WI scenarios: Any restriction, e.g. on the LEO altitude (if needed) could come from other groups.

Proposal 2.2.1: The key reference scenario parameters in table 4.2-2 of [11] is considered for the Rel-17 work item “NR\_NTN\_solutions”. It corresponds to the table 4.2-2 of [TR 38.821] in which the scenarios referring to the regenerative payload option have been removed. RAN1 to confirm the delay and Doppler values in the table.

* Ericsson and QC wonder about the meaning of this proposal
* From RAN2 perspective, the table 4.2-2 of [TR 38.821] is used as a baseline for the normative work, with the removal of the regenerative payload option
* Nokia wonders about the feeder link, is it limited to 3GPP RAT?
* Thales thinks that since we agreed to use transparent payload the feeder link should use 3GPP RAT
* Hughes thinks we could use proprietary interface on the feeder link
* Thales think the satellite could still be controlled by a proprietary interface
* (as the WI is restricted to transparent payload) we assume that the feeder link will use NR (how the satellite is controlled is out of the scope of the WI)

Proposal 2.3.1bis: The characteristics of the NTN User equipment types are in the table below.

Table 4.3-1 Reference satellite scenarios: User equipment types

|  |  |  |
| --- | --- | --- |
| *User equipment characteristics* | *Handheld* | *VSAT (Note 1)* |
| *Motion on the earth* | *Up to 500 km/h (e.g. on board a high speed train)* | *Up to 1200 km/h (e.g. aircraft mounted)* |
| *antenna types* | *Omnidirectional antenna and directional antenna* | *Directional antenna*  *(up to 60 cm equivalent aperture diameter)* |
| *Antenna polarisation* | *Linear: +/-45°X-pol* | *circular* |
| *Max transmit power* | *up to 200 mW (power class 3)* | *up to 20 W* |
| *NTN and TN capability* | *Yes for TN-NTN mobility* | *Optional* |
| *Note 1 : VSAT terminal characteristics could be implemented with phased array antenna. It may be mounted on Moving platforms (e.g., aircrafts, vessels) or building* | | |

* Oppo proposes to remove the row on NTN and TN cap. LG would like to keep this
* RAN2 confirms the assumptions on the UE ground speed in the handheld and VSAT cases

Proposal 2.4.1bis: As part of Rel-17 NR\_NTN\_solutions WI, UEs with GNSS capabilities and with/without capability on timing and frequency pre-compensation using their GNSS capabilities are assumed.

Note: The support of UEs without GNSS capability are not precluded in subsequent releases.

* In Rel-17, only UEs with GNSS capabilities are supported

Proposal 2.5.1bis: Both Earth fixed and earth moving beam scenarios are considered with NGSO constellation.

Proposal 2.5.2bis: Normative work should start with Earth fixed beam scenarios.

* Both Earth fixed and earth moving beam scenarios are considered with NGSO constellation.
* Discuss the RAN2 impacts of earth fixed and moving beams in an email discussion until the next meeting

Proposal 2.6.1bis: Soft and hard feeder link switchover (e.g. for Non GSO) are supported.

Note: This requires satellite to be connected to at least one NTN GW (hard switch) or at least two NTN GWs (soft switch).

Proposal 2.6.2bis: RAN2 to define performance requirements for feeder link switchover (e.g. delay impact)

Proposal 2.6.3bis: RAN2 to start considering soft feeder link switchover (e.g. for Non GSO).

Proposal 2.7.1bis: The following stepped approach is proposed:

- Step 1: Review of the applicability to NTN of the existing network-based location methods, adapt these methods or propose new ones if need be, and evaluate these methods.

- Step 2: Assessment the MDT framework and LCS framework ([5] to [9], in particular but not excluding other TS) and their applicability to NTN

- Step 3: Following Step 1 & 2, down-selection of a method to be specified for locating UE by an NTN NG-RAN.

Proposal 2.7.2bis: The NTN based positioning of UE should provide an accuracy comparable with terrestrial networks (typical Cell size). Location Services (LCS) framework/application protocols from Rel.16 is the basis for the NTN to locate the UE.

Proposal 2.8.1bis: For TN / NTN mobility, the UE is not required to simultaneously have TN and NTN access capability.

Proposal 2.8.2bis: For TN / NTN mobility, the UE may use different antenna types for TN and NTN (e.g. directional antenna for NTN)

Proposal 2.8.3bis: , RAN2 to discuss about trigger of TN / NTN mobility, once the Intra NTN mobility has sufficiently progressed.

Proposal 2.9.1: Transparent HAPS is assumed with the IMT BS on the ground and the HAPS is a relay.

Proposal 3.1.1: The work plan described in [10] be considered as basis for work

Proposal 3.2.1bis: The work plan should be based on the following prioritization principles:

1st priority: user plane, control plane (idle and connected)

2nd priority: NTN-TN service continuity, network based UE location

Agreements:

1. RAN2 stick to WI scenarios: Any restriction, e.g. on the LEO altitude (if needed) could come from other groups.
2. From RAN2 perspective, the table 4.2-2 of [TR 38.821] is used as a baseline for the normative work, with the removal of the regenerative payload option
3. (as the WI is restricted to transparent payload) we assume that the feeder link will use NR (how the satellite is controlled is out of the scope of the WI)
4. RAN2 confirms the assumptions on the UE ground speed in the handheld and VSAT cases
5. In Rel-17, only UEs with GNSS capabilities are supported
6. Both Earth fixed and earth moving beam scenarios are considered with NGSO constellation.

[R2-2008211](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008211.zip) Summary of offline 105 - NTN Workplan, scope and scenarios - second round Thales discussion Rel-16 NR\_NTN\_solutions-Core

* Revised in [R2-2008228](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008228.zip)

[R2-2008228](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008228.zip) Summary of offline 105 - NTN Workplan, scope and scenarios - second round (updated) Thales discussion Rel-16 NR\_NTN\_solutions-Core

Proposal 2.6.1quart: Both soft and hard feeder link switchover (e.g. for Non GSO) are supported.

Note: This requires satellite to be connected to one NTN GW at a time (hard switch) or at least two NTN GWs simultaneously (soft switch).

* Agreed

Proposal 2.6.3ter: RAN2 to start discussing enhancements for soft feeder link switchover and then solutions for hard feeder link switchover.

* Agreed

Proposal 2.7.1ter: As part of the NR-NTN WI, the following stepped approach is proposed:

- Step 1: Assessment of the Rel-16 LCS framework/application protocols (3GPP TS 23.273, TS 29.572, TS 38.455, TS 38.305, in particular but not excluding other TS) and its applicability to NTN

- Step 2: Assess whether changes to the existing network-based location methods are needed and define them if needed

- Sony asked about the use of MDT framework. Thales reports that this was discussed but reject during the discussion

* Agreed

Proposal 2.7.2quart: The NTN network based positioning of UE should provide an accuracy comparable with the network based UE location accuracy of terrestrial networks.

* Agreed

Proposal 2.8.1ter: For TN/NTN mobility, the UE is not required to connect to both TN and NTN at the same time.

* Agreed

Proposal 2.8.3ter: RAN2 to discuss about trigger(s) of TN / NTN mobility, once the Intra NTN mobility has sufficiently progressed. Intra NTN mobility refers to idle and connected mode mobility between NTN cells (e.g. intra or inter satellite).

* Agreed

Proposal 2.8.4quart: NTN capable Handheld shall support TN / NTN mobility. FFS if VSAT supports TN / NTN mobility.

* QC has some concerns with this and would like to further check if there could be UE supporting only NTN specific bands.
* Mediatek also objects this proposal

Proposal 2.9.1: Transparent HAPS is assumed with the IMT BS on the ground and the HAPS is a relay.

* Agreed

Proposal 2.10.1bis: Rel-17 NR NTN WI addresses both LEO and GEO but may start discussing solutions for LEO NTNs especially for CP aspects (mobility) and solutions for GEO NTNs for UP aspects (delay)

* Ligado is still concerned with this proposal
* Hughes agrees with Ligado: GEO and LEO should be addressed in parallel for all aspects.

Proposal 3.1.1ter: The RAN2 work plan described in [R2-2007565](file:///C:\Data\3GPP\Extracts\R2-2007565%20-%20Rel17%20NR-NTN%20workplan.docx) should be considered as a basis for work

* Agreed

Proposal 3.2.1ter: The work plan should be based on the following prioritization principles:

 1st priority: user plane, control plane (idle and connected)

 2nd priority: NTN-TN service continuity, network based UE location

* Agreed

Updated Proposal 2.8.4cinq:  The capability of UE to support TN / NTN mobility is FFS

* LG wonders about UE with NTN capability only. Thales thinks we can discuss this in the future
* BT/Vodafone/Samsung supports this
* Comeback to this discussion in the future

Updated Proposal 2.10.1ter: Rel-17 NR NTN WI addresses both LEO and GEO. RAN2 may start discussing UP solutions especially to support GEO NTNs (delay) and apply to LEO; CP solutions especially to support LEO NTNs (mobility) and apply to GEO.

* Apple doesn't think there is a need to separate the work for this

Agreements via email - from offline 105:

1. Both soft and hard feeder link switchover (e.g. for Non GSO) are supported.

Note: This requires satellite to be connected to one NTN GW at a time (hard switch) or at least two NTN GWs simultaneously (soft switch).

1. RAN2 to start discussing enhancements for soft feeder link switchover and then solutions for hard feeder link switchover.

3. As part of the NR-NTN WI, the following stepped approach is proposed:

- Step 1: Assessment of the Rel-16 LCS framework/application protocols (3GPP TS 23.273, TS 29.572, TS 38.455, TS 38.305, in particular but not excluding other TS) and its applicability to NTN

- Step 2: Assess whether changes to the existing network-based location methods are needed and define them if needed

4. The NTN network based positioning of UE should provide an accuracy comparable with the network based UE location accuracy of terrestrial networks.

5. For TN/NTN mobility, the UE is not required to connect to both TN and NTN at the same time.

6. RAN2 to discuss about trigger(s) of TN / NTN mobility, once the Intra NTN mobility has sufficiently progressed. Intra NTN mobility refers to idle and connected mode mobility between NTN cells (e.g. intra or inter satellite).

7. Transparent HAPS is assumed with the IMT BS on the ground and the HAPS is a relay.

8. The RAN2 work plan described in [R2-2007565](file:///C:\Data\3GPP\Extracts\R2-2007565%20-%20Rel17%20NR-NTN%20workplan.docx) should be considered as a basis for work

9. The work plan should be based on the following prioritization principles:

- 1st priority: user plane, control plane (idle and connected)

- 2nd priority: NTN-TN service continuity, network based UE location

[R2-2006941](file:///C:\Data\3GPP\Extracts\R2-2006941_For8.10.1_NTN_WI_ObservationsProposals_Samsung.doc) NTN WI- Overall Observations and Proposals SAMSUNG discussion Rel-17 NR\_NTN\_solutions

[R2-2007143](file:///C:\Data\3GPP\Extracts\R2-2007143%20Discussion%20on%20task%20prioritization%20for%20NR%20NTN.DOC) Discussion on task prioritization for NR NTN Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007363](file:///C:\Data\3GPP\Extracts\R2-2007363%20%20On%20the%20scenarios%20and%20simulation%20assumptions%20for%20evaluating%20NTN%20mobility.docx) On the scenarios and simulation assumptions for evaluating NTN mobility Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

Positioning

[R2-2006699](file:///C:\Data\3GPP\Extracts\R2-2006699_NR-NTN_Positioning.doc) NR-NTN: Positioning Methods Fraunhofer IIS, Fraunhofer HHI discussion Rel-17 38.821

[R2-2007185](file:///C:\Data\3GPP\Extracts\R2-2007185.doc) Location Services in NTN Sony discussion Rel-17 NR\_NTN\_solutions-Core

### 8.10.2 User Plane

In particular, initial focus on getting a common understanding of pre-compensation and offsets.

#### 8.10.2.1 MAC aspects

[R2-2007615](file:///C:\Data\3GPP\Extracts\R2-2007615%20(R17%20NTN%20WI%20AI%208.10.2.1%20Summary%20of%20MAC%20open%20issues).docx) Summary of MAC open issues in NTN InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

* Discussed in offline 107

[R2-2007616](file:///C:\Data\3GPP\Extracts\R2-2007616%20(R17%20NTN%20WI%20AI%208.10.2.1%20Precompensation).docx) Pre-compensation and offset calculation in NTN InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

* Discussed in offline 107

[R2-2006928](file:///C:\Data\3GPP\Extracts\R2-2006928.docx) Timing advance for NTN Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

* Discussed in offline 107

[R2-2007590](file:///C:\Data\3GPP\Extracts\R2-2007590%20Timing%20Advance,%20Random%20Access%20and%20DRX%20aspects%20in%20NTN.docx) Timing Advance, Random Access and DRX aspects in NTN Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

* Discussed in offline 107

[R2-2007784](file:///C:\Data\3GPP\Extracts\R2-2007784-Consideration%20on%20MAC%20enhancements%20for%20NTN.doc) Consideration on MAC enhancements for NTN ZTE Corporation, Sanechips discussion Rel-17

* Proposals 1 to 5 discussed in offline 107
* [AT111e][107][NTN] Pre-compensation and other MAC issues (Interdigital)

Scope: Discuss the proposals in [R2-2007615](file:///C:\Data\3GPP\Extracts\R2-2007615%20(R17%20NTN%20WI%20AI%208.10.2.1%20Summary%20of%20MAC%20open%20issues).docx), [R2-2007616](file:///C:\Data\3GPP\Extracts\R2-2007616%20(R17%20NTN%20WI%20AI%208.10.2.1%20Precompensation).docx), [R2-2006928](file:///C:\Data\3GPP\Extracts\R2-2006928.docx), [R2-2007590](file:///C:\Data\3GPP\Extracts\R2-2007590%20Timing%20Advance,%20Random%20Access%20and%20DRX%20aspects%20in%20NTN.docx) (and possibly other proposals from contributions in 8.10.2.1 focussing on pre-compensation and offset calculations), as well as proposals 1 to 5 in [R2-2007784](file:///C:\Data\3GPP\Extracts\R2-2007784-Consideration%20on%20MAC%20enhancements%20for%20NTN.doc). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Friday 2020-08-21 08:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip)): Friday 2020-08-21 10:00 UTC

Updated scope: Continue the discussion on proposals in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip) and specifically:

* + - Check whether the "FFS for UL" in meeting agreement #4 can be resolved. Also check whether an LS can be sent to RAN1 regarding RAN2 agreements on disabling HARQ feedback (proposal 23 in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip))
    - Check whether a "RAN2 Working Assumption" (to be further checked with RAN1) can be reached on (a revision of) proposals 1, 2 and 3 in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip)
    - Check whether any other proposals can be agreed from the lists "Seems agreeable" and "Require discussions" in [R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip)

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

* + - List of proposals for agreement
    - List of proposals that require online discussions

Final deadline (for companies' feedback): Thursday 2020-08-27 00:00 UTC

Final deadline (for rapporteur's summary in [R2-2008214](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008214.zip)): Thursday 2020-08-27 06:00 UTC

Proposals marked "for agreement" in [R2-2008214](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008214.zip) not challenged until Thursday 2020-08-27 18:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue in the CB online session on Friday 2020-08-28.

[R2-2008188](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008188.zip) Summary of offline 107 - Pre-compensation and other MAC issues Interdigital discussion Rel-16 NR\_NTN\_solutions-Core

Proposals with consensus

Proposal 4: From RAN2 perspective, an offset is applied to the start of ra-ResponseWindow in NTN for both LEO and GEO scenarios. Modification to start of ra-ResponseWindow to be defined by RAN1 in TS 38.213. (consensus)

* Samsung wonders if the offset is signalled by RAN2

Proposal 8: An offset to the start of the ra-ContentionResolutionTimer is introduced for both LEO and GEO scenarios. (consensus)

Proposal 9: Modification of drx-LongCycleStartOffset, drx-StartOffset, drx-ShortCycle, drx-ShortCycleTimer, drx-onDurationTimer, drx-SlotOffset and drx-InactivityTimer is not needed in Rel-17 NTN. (consensus)

Proposal 22: From a RAN2 perspective, HARQ feedback can be enabled/disabled in Rel-17 NTN, but HARQ processes remain configured. The criteria and decision to enable/disable HARQ feedback is under network control and is signalled to the UE via RRC in a semi-static manner. (consensus)

* Oppo wonders whether this applies only to DL
* IDC think the intention was to keep it general

Agreements via email - from offline 107

1. From RAN2 perspective, an offset is applied to the start of ra-ResponseWindow in NTN for both LEO and GEO scenarios.
2. An offset to the start of the ra-ContentionResolutionTimer is introduced for both LEO and GEO scenarios.
3. Modification of drx-LongCycleStartOffset, drx-StartOffset, drx-ShortCycle, drx-ShortCycleTimer, drx-onDurationTimer, drx-SlotOffset and drx-InactivityTimer is not needed in Rel-17 NTN.
4. From a RAN2 perspective, for DL, HARQ feedback can be enabled/disabled in Rel-17 NTN, but HARQ processes remain configured. The criteria and decision to enable/disable HARQ feedback is under network control and is signalled to the UE via RRC in a semi-static manner. FFS for UL

Seems Agreeable

Proposal 5: For at least UE with UE-specific pre-compensation, an extension to the ra-ResponseWindow is not needed for both LEO and GEO scenarios. (19/26)

Proposal 6: Discuss if it is assumed network will ensure UEs without UE-specific pre-compensation will have a ra-ResponseWindow that covers the maximum differential delay of the cell.

Proposal 7: If an extension to ra-ResponseWindow is required, baseline solution is to use the 2-bit LSBs of SFN in DCI scheduling Msg2/MsgB. (5/6)

Proposal 10: If HARQ feedback is enabled, an offset is applied to the start of drx-HARQ-RTT-TimerDL and drx-HARQ-RTT-TimerUL for both LEO and GEO scenarios. (25/27)

Proposal 11: If HARQ feedback is disabled, drx-HARQ-RTT-TimerDL and drx-HARQ-RTT-TimerUL are not started for both LEO and GEO scenarios. (23/27)

Proposal 12: Modifying start of drx-RetransmissionTimerDL(UL) based on network-scheduled offset via PDCCH is not supported at this time. (21/26)

Proposal 13: The value range of the sr-ProhibitTimer is extended for both LEO and GEO scenarios. FFS additional values and method of extension. (19/25)

Proposal 16: For 4-step RACH with pre-compensation at UE side, the following procedure can be used as baseline: (24/26)

1. In Msg1 transmission, the UE should apply the estimated TA in the preamble transmission.

2. In Msg2 reception, the UE should apply the TA command received in RAR as a delta adjustment to the TA maintained on UE side (i.e. the TA estimated in Msg1 transmission).

3. For the UL grant in Msg2 for Msg3 transmission, it is up to gNB implementation to ensure a sufficient processing time on UE side for the Msg3 transmission (e.g. gNB can always assume maximum TA is used on UE side, where the maximum TA can be determined based on the coverage of the NTN cell).

Proposal 17: Both 2-step and 4-step RACH are supported in Rel-17 NTN. FFS enhancements to 2-step RACH to accommodate the NTN environment. (24/27)

Proposal 18: For 2-step RACH with pre-compensation at UE side, the following procedure can be used as baseline. (22/27)

1. In MsgA transmission, the UE should estimate the absolute TA and apply the TA estimated in both the preamble and PUSCH transmission.

2. In MsgA transmission, the UE should include the absolute TA value estimated in the payload of MsgA.

3. In MsgB reception, the UE should apply the TA command received in RAR as a delta adjustment to the TA maintained on UE side (i.e. the TA estimated in MsgA transmission).

Proposal 21: For UE with UE-specific pre-compensation, as a baseline Msg3 scheduling adaptation will be handled by network scheduling/implementation (i.e. no modification necessary) (23/26). FFS additional enhancements for 2-step RACH. (12/26)

Proposal 25: From RAN2 perspective, the preferred granularity for disabling HARQ feedback is per-HARQ process (25/27). FFS disabling HARQ feedback on a per-UE (19/27) or per-LCH (14/27) basis.

Proposal 26: The preferred methods to enhance UL scheduling in NTN are via configured grant (21/25) and BSR over 2-step RACH (20/25). FFS the SR-BSR procedure (8/27) and sending a large grant in response to SR (13/27). BSR-indication in SR is deprioritized (6/27 support, 12/27 deprioritize).

Requires discussion

Proposal 1: Network broadcasts information related to common delay e.g. feeder-link delay (15/27) or common delay from gNB to cell/beam reference point (13/27). It is up to network implementation what the common delay represents based on scenario or deployment (e.g. small cells or large cells)

* Mediatek thinks leaving this to network implementation is not ok.
* Huawei supports the proposal regarding the feeder link delay.
* Apple wants to have more clarification what network implementation means
* Nokia think we should consider proposal 1 and 2 together. Pre-compensation accuracy should be considered first. Ericsson agrees with Nokia.
* Samsung think we can modify the agreement changing "it's up to network implementation" with an FFS
* Thales/ Loon/ Apple/ Mediatek/ Nomor/ Eutelsat/ Samsung/ Lenovo/ Oppo/ IDC/ Panasonic/ ZTE/ Intel/ Ericsson/ Oppo support the combination of proposals 1 and 2
* LG supports proposal 1 only

Proposal 2: UE-specific offset calculated by UE based on UE-satellite location can be added to common delay to obtain full UE-specific RTD timing pre-compensation. It is up to network to configure if the UE should add UE specific offset. (20/27)

Proposal 3: If Proposal 1 is agreed, FFS the impact of satellite movement in LEO on common delay (i.e. to reference point or feeder-link delay).

Proposal 14: From RAN2 perspective, explicit UE calculation (which can include addition of a common delay portion) is the baseline method of offset calculation (18/27). FFS if only common TA provided by the network can be used (8/27). Detailed solution to be left to RAN1.

Proposal 15: RAN2 to prioritize the case of UE with valid location information and capability to perform pre-compensation in RACH procedure. Discussion regarding UEs with GNSS but without pre-compensation postponed until further progress in RAN1. (20/27)

Proposal 23: If Proposal 22 agreed, an LS is sent to RAN1 regarding RAN2 agreements on disabling HARQ feedback. (15/24)

Likely not agreeable at this stage

Proposal 19: No consensus, additional considerations for 2-step RACH in NTN are to be evaluated once work on 2-step RACH has progressed.

Proposal 20: For UE with UE-specific pre-compensation, no enhancements necessary for RACH preamble ambiguity. FFS UE without UE-specific pre-compensation. (14/27 based on comments)

Proposal 24: From RAN2 perspective, the preferred method of addressing HARQ stalling is via disabling HARQ feedback (17/27). Further discussion on HARQ stalling can wait pending RAN1 feedback. (14/27)

[R2-2008214](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008214.zip) Summary of offline 107 - Pre-compensation and other MAC issues - second round Interdigital discussion Rel-16 NR\_NTN\_solutions-Core

For Online Discussion

Proposal 1: Agreement 4 is clarified as follows:

From a RAN2 perspective, uplink HARQ feedback for downlink transmission at UE receiver and HARQ uplink retransmission at UE transmitter can be enabled/disabled in Rel-17 NTN, but HARQ processes remain configured. The criteria and decision to enable/disable HARQ feedback is under network control and is signalled to the UE via RRC in a semi-static manner. (16/22).

* Ericsson think that for UL we should still allow retx

Proposal 2: If Agreement 4 is modified to include disabling/enabling UL HARQ retransmission, RAN2 to send an LS to RAN1.

Updated Proposal 3 (updated by Vice-chair): RAN2 adopts the following working assumptions for a location based pre-compensation sdolution (and a solution based on timestamp will not be adopted):

1.          A common pre-compensation value for the feeder link delay is broadcast by the network (broadcast of other delays is not excluded)

2.         UEs with UE location based delay pre-compensation capabilities calculate UE-specific delay using UE and satellite location.

3.         UEs with UE location based delay pre-compensation capabilities obtain full UE-specific RTD by adding UE-specific delay to the common compensation value broadcast by the network ~~feeder link delay~~.

4.         UE-specific pre-compensation is baseline method for Rel-17 NTN for LEO and GEO (FFS if only common delay pre-compensation is sufficient for HAPS).

5.         RAN1 to evaluate the accuracy of delay estimation and impact of satellite movement in LEO on feeder link delay. FFS impact on RAN2 pre-compensation working assumptions.

Updated proposal 5: RAN2 to prioritize the case of UE with capability to perform pre-compensation in RACH procedure.

* Nokia/Oppo/Apple do not want to prioritize anything
* Huawei is ok with prioritizing
* IDC/QC are fine to prioritize this

Updated proposal 6: Both 2-step and 4-step RACH are supported in Rel-17 NTN. FFS enhancements to RACH to accommodate the NTN environment.

* Agreed

Updated proposal 7: From RAN2 perspective, for UE with UE-specific pre-compensation as a baseline it is up to gNB implementation to ensure a sufficient processing time on UE side for the Msg3 transmission  (i.e. no modification necessary).

* QC wonders what the processing time is

Agreeable Proposals

Proposal 4: Modifying start of drx-RetransmissionTimerDL(UL) based on network-scheduled offset via PDCCH is not supported at this time (**and until at least basic functionalities (e.g. DRX, blind retransmission) have been decided in NTN)**

* Nokia suggests to modify as "… (and drx-RetransmissionTimerDL(UL) trigger can be studied after basic functionalities (e.g.  blind retransmission) have been decided in NTN)

Proposal 5: RAN2 to prioritize the case of UE with valid location information and capability to perform pre-compensation in RACH procedure.

* Oppo: The proposed prioritization is not ok to us, because we anyway have to deal with the case where UE has no available location information.
* Nokia: we disagree it as we don't want to de-prioritize any case in early phase before conclusion from RAN1.
* Ericsson thinks this is problematic because it may exclude using the timestamp based method. Suggests to revise as "RAN2 to prioritize the case of UE with GNSS capability and capability to perform pre-compensation in RACH procedure."

Proposal 6: Both 2-step and 4-step RACH are supported in Rel-17 NTN. FFS enhancements to 2-step RACH to accommodate the NTN environment.

* Samsung would like to explicitly include 4-step RACH enhancement as well
* Also Ericsson suggests to generalize this and say "FFS enhancements to 2-step RACH to accommodate the NTN environment is not precluded."

Proposal 7: From RAN2 perspective, for UE with UE-specific pre-compensation as a baseline Msg3 scheduling adaptation will be handled by network scheduling/implementation (i.e. no modification necessary).

* Ericsson suggests to revise as "From RAN2 perspective, for UE with UE-specific pre-compensation as a baseline it is up to gNB implementation to ensure a sufficient processing time on UE side for the Msg3 transmission ~~Msg3 scheduling adaptation will be handled by network scheduling/implementation~~ (i.e. no modification necessary).

Proposal 8: At least the following methods to enhance UL scheduling are further studied in NTN: configured grant and BSR over 2-step RACH. **(other solutions to enhance UL scheduling are not precluded)**

* Agreed

Agreements via email - from offline 107:

1. At least the following methods to enhance UL scheduling are further studied in NTN: configured grant and BSR over 2-step RACH. **(other solutions to enhance UL scheduling are not precluded)**

Agreements:

Both 2-step and 4-step RACH are supported in Rel-17 NTN. FFS enhancements to RACH to accommodate the NTN environment.

Phase 1 proposals to postpone until next meeting

Proposal 10: If HARQ feedback is enabled, an offset is applied to the start of drx-HARQ-RTT-TimerDL and drx-HARQ-RTT-TimerUL for both LEO and GEO scenarios.

Proposal 11: If HARQ feedback is disabled, drx-HARQ-RTT-TimerDL and drx-HARQ-RTT-TimerUL are not started for both LEO and GEO scenarios.

Proposal 16: For 4-step RACH with pre-compensation at UE side, the following procedure can be used as baseline:

1. In Msg1 transmission, the UE should apply the estimated TA in the preamble transmission.

2. In Msg2 reception, the UE should apply the TA command received in RAR as a delta adjustment to the TA maintained on UE side (i.e. the TA estimated in Msg1 transmission).

3. For the UL grant in Msg2 for Msg3 transmission, it is up to gNB implementation to ensure a sufficient processing time on UE side for the Msg3 transmission (e.g. gNB can always assume maximum TA is used on UE side, where the maximum TA can be determined based on the coverage of the NTN cell).

Proposal 18: For 2-step RACH with pre-compensation at UE side, the following procedure can be used as baseline:

1. In MsgA transmission, the UE should estimate the absolute TA and apply the TA estimated in both the preamble and PUSCH transmission.

2. In MsgA transmission, the UE should include the absolute TA value estimated in the payload of MsgA.

3. In MsgB reception, the UE should apply the TA command received in RAR as a delta adjustment to the TA maintained on UE side (i.e. the TA estimated in MsgA transmission).

[R2-2006631](file:///C:\Data\3GPP\Extracts\R2-2006631%20Discussion%20on%20MAC%20Enhancement%20and%20Impact%20for%20NTN.docx) Discussion on MAC Enhancement and Impact for NTN CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2006638](file:///C:\Data\3GPP\Extracts\R2-2006638_On%20Updating%20MAC%20Timers%20in%20NR-NTN_v2.0.docx) On Updating MAC Timers in NR-NTN MediaTek Inc. discussion

[R2-2006702](file:///C:\Data\3GPP\Extracts\R2-2006702_MAC_NTN.docx) Enhancements for NTN on MAC Layer – Impact Analysis on TS Nomor Research GmbH, Thales discussion Rel-17

[R2-2006781](file:///C:\Data\3GPP\Extracts\R2-2006781%20-%20Consideration%20on%20MAC%20enhancement%20for%20NTN.docx) Consideration on MAC enhancement for NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2006799](file:///C:\Data\3GPP\Extracts\R2-2006799%20Discussion%20on%20DRX%20and%20BSR%20in%20NTN.docx) Discussion on DRX and BSR in NTN PANASONIC R&D Center Germany discussion

[R2-2006927](file:///C:\Data\3GPP\Extracts\R2-2006927.docx) MAC issues for NTN Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2006943](file:///C:\Data\3GPP\Extracts\R2-2006943_For8.10.2.1_MAC_UP_ObservationsProposals_Samsung.doc) MAC User Plane Enhancements for an NTN- Observations and Proposals SAMSUNG discussion Rel-17 NR\_NTN\_solutions

[R2-2006974](file:///C:\Data\3GPP\Extracts\R2-2006974.doc) UP aspects including Random Access procedure enhancements Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007056](file:///C:\Data\3GPP\Extracts\R2-2007056.doc) Introducing offsets in MAC Spreadtrum Communications discussion

[R2-2007103](file:///C:\Data\3GPP\Extracts\._R2-2007103%20On%20Timing%20Advance%20for%20NTN%20Networks.docx) On Timing Advance for NTN Networks Apple discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007104](file:///C:\Data\3GPP\Extracts\._R2-2007104%20On%20Preamble%20Ambiguity%20in%20NTN%20networks.docx) On Preamble Ambiguity in NTN Networks Apple discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007105](file:///C:\Data\3GPP\Extracts\._R2-2007105%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

[R2-2007176](file:///C:\Data\3GPP\Extracts\R2-2007176_Discussion%20on%20UL%20scheduling%20enhancement.doc) Discussion on UL scheduling enhancement Beijing Xiaomi Electronics discussion

[R2-2007186](file:///C:\Data\3GPP\Extracts\R2-2007186.doc) MAC enhancements in NTN Sony discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007397](file:///C:\Data\3GPP\Extracts\R2-2007397%20Consideration%20on%20TA%20Precompensation.doc) Consideration on TA Precompensation Beijing Xiaomi Mobile Software discussion Rel-17

[R2-2007428](file:///C:\Data\3GPP\Extracts\R2-2007428%20Discussion%20of%20HARQ%20feedback%20for%20NTN.docx) Discussion of HARQ feedback for NTN CMCC discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007430](file:///C:\Data\3GPP\Extracts\R2-2007430%20Discussion%20on%20TA%20compensation.docx) Discussion on TA compensation CMCC discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007474](file:///C:\Data\3GPP\Extracts\R2-2007474%20Timing%20advance%20pre-compensation%20in%20NTN.docx) Timing advance pre-compensation in NTN Lenovo, Motorola Mobility discussion Rel-17

[R2-2007477](file:///C:\Data\3GPP\Extracts\R2-2007477%20Discussion%20on%20DRX%20in%20NTN-v1.0.doc) Discussion on DRX for NTN Lenovo, Motorola Mobility discussion Rel-17

[R2-2007617](file:///C:\Data\3GPP\Extracts\R2-2007617%20(R17%20NTN%20WI%20AI%208.10.2.1%20RACH%20preamble%20ambiguity).docx) RACH preamble ambiguity in NTN InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007712](file:///C:\Data\3GPP\Extracts\R2-2007712_Impact%20of%20pre-compensation%20on%20RACH%20capacity%20for%20NTN.docx) Impact of pre-compensation on RACH capacity for NTN NEC Telecom MODUS Ltd. discussion Rel-17

[R2-2007714](file:///C:\Data\3GPP\Extracts\R2-2007714%20-%20On%20scheduling%20HARQ%20DRX%20RLC%20and%20PDCP%20for%20NTN.docx) On scheduling, HARQ, DRX, RLC, and PDCP for NTN Ericsson discussion Rel-17 NR\_NTN\_solutions

[R2-2007715](file:///C:\Data\3GPP\Extracts\R2-2007715%20-%20On%20Random%20Access%20in%20NTN.docx) On Random Access in NTN Ericsson discussion Rel-17 NR\_NTN\_solutions

[R2-2007888](file:///C:\Data\3GPP\Extracts\R2-2007888_Discussion%20on%20MAC%20aspects%20for%20NTN_r1.DOCX) Discussion on MAC aspects for NTN LG Electronics Inc. discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007995](file:///C:\Data\3GPP\Extracts\R2-2007995%20MAC%20enhancements%20on%20the%20initial%20access%20procedures%20for%20NTN.docx) MAC enhancements on the initial access procedures for NTN ETRI discussion Rel-17

[R2-2008101](file:///C:\Data\3GPP\Extracts\R2-2008101.docx) Considerations on RACH procedure enhancements in NTN CAICT discussion Late

Withdrawn

[R2-2007519](file:///C:\Data\3GPP\Extracts\R2-2007519_Impact%20of%20pre-compensation%20on%20RACH%20capacity%20for%20NTN.docx) Impact of pre-compensation on RACH capacity for NTN NEC Telecom MODUS Ltd. agenda Withdrawn

* [POST111e][XXX][NTN] RACH and HARQ feedback aspects (Interdigital)

Scope: Continue the discussion on RACH aspects as well as on p1, p10, p11 in [R2-2008214](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008214.zip)

Intended outcome: email discussion summary

Deadline: Until next meeting

#### 8.10.2.2 Other aspects

[R2-2006640](file:///C:\Data\3GPP\Extracts\R2-2006640_Updating%20RLC%20and%20PDCP%20in%20NR-NTN_v2.0.docx) RLC and PDCP Enhancements in NR-NTN MediaTek Inc. discussion

[R2-2006703](file:///C:\Data\3GPP\Extracts\R2-2006703_RLC_NTN.doc) Enhancements for NTN on RLC Control Loops and Timers Nomor Research GmbH, Thales discussion Rel-17

[R2-2006705](file:///C:\Data\3GPP\Extracts\R2-2006705_PDCP_NTN.doc) Enhancements for NTN on PDCP Control Loops and Timers Nomor Research GmbH, Thales discussion Rel-17

[R2-2006782](file:///C:\Data\3GPP\Extracts\R2-2006782%20-%20Consideration%20on%20RLC%20and%20PDCP%20enhancement%20for%20NTN.docx) Consideration on RLC and PDCP enhancements for NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007172](file:///C:\Data\3GPP\Extracts\R2-2007172%20Discussion%20on%20UP%20enhancement%20in%20NTN.doc) Discussion on UP enhancement in NTN Huawei, HiSilicon discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007573](file:///C:\Data\3GPP\Extracts\R2-2007573%20-%20On%20NTN%20Feeder%20link%20switch%20over.docx) On NTN Feeder link switch over THALES discussion

[R2-2007785](file:///C:\Data\3GPP\Extracts\R2-2007785-Consideration%20on%20UP%20timers%20and%20RLC-PDCP%20SN%20for%20NTN.doc) Consideration on UP timers and RLC/PDCP SN for NTN ZTE Corporation, Sanechips discussion Rel-17

[R2-2007889](file:///C:\Data\3GPP\Extracts\R2-2007889_Discussion%20on%20RLC%20and%20PDCP%20aspects%20for%20NTN_r3.DOCX) Discussion on RLC and PDCP aspects for NTN LG Electronics Inc. discussion Rel-17 NR\_NTN\_solutions-Core

* [POST111e][XXX][NTN] RLC and PDCP aspects (Mediatek)

Scope: Discuss RLC and PDCP aspects

Intended outcome: email discussion summary

Deadline: Until next meeting

### 8.10.3 Control Plane

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

#### 8.10.3.1 Idle/Inactive mode

Including cell selection/reselection & system information.

[R2-2006872](file:///C:\Data\3GPP\Extracts\R2-2006872_Consideration%20on%20system%20information%20and%20cell%20(re)selection%20in%20NTN-v0.docx) Consideration on system information and cell (re)selection in NTN ZTE corporation, Sanechips discussion Rel-17 NR\_NTN\_solutions-Core

* Discussed in offline 106

[R2-2006973](file:///C:\Data\3GPP\Extracts\R2-2006973.docx) IDLE mode procedure Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

* Discussed in offline 106

[R2-2007171](file:///C:\Data\3GPP\Extracts\R2-2007171%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

* Discussed in offline 106

[R2-2007574](file:///C:\Data\3GPP\Extracts\R2-2007574%20-%20Considerations%20on%20satellite%20ephemeris.docx) Considerations on satellite ephemeris THALES discussion Rel-17

* Proposals 1 and 2 discussed in offline 106
* [AT111e][106][NTN] Idle mode issues (ZTE)

Scope: Discuss the proposals in [R2-2006872](file:///C:\Data\3GPP\Extracts\R2-2006872_Consideration%20on%20system%20information%20and%20cell%20(re)selection%20in%20NTN-v0.docx), [R2-2006973](file:///C:\Data\3GPP\Extracts\R2-2006973.docx), [R2-2007171](file:///C:\Data\3GPP\Extracts\R2-2007171%20Discussion%20on%20RRC_IDLE%20mode%20issues%20in%20NTN.doc) and proposals 1 and 2 in [R2-2007574](file:///C:\Data\3GPP\Extracts\R2-2007574%20-%20Considerations%20on%20satellite%20ephemeris.docx). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Thursday 2020-08-20 16:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008187](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008187.zip)): Thursday 2020-08-20 18:00 UTC

Updated scope: Continue the discussion on remaining proposals in [R2-2008187](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008187.zip)and specifically: Proposals 3.1, 3.2, 4 and 6

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

* + - List of proposals for agreement
    - List of proposals that require online discussions

Final deadline (for companies' feedback): Thursday 2020-08-27 00:00 UTC

Final deadline (for rapporteur's summary in [R2-2008213](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008213.zip)): Thursday 2020-08-27 06:00 UTC

Proposals marked "for agreement" in [R2-2008213](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008213.zip) not challenged until Thursday 2020-08-27 18:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue in the CB online session on Friday 2020-08-28.

[R2-2008187](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008187.zip) Summary of offline 106 - Idle mode issues ZTE corporation discussion Rel-16 NR\_NTN\_solutions-Core

List of agreeable proposals

Proposal 1: Idle mode procedure in NR is the baseline in NTN idle mode procedure.

* Panasonic think we should restrict to cell selection/reselection for now

Proposal 2: Satellite ephemeris and UE location assisted cell selection and reselection should be introduced for NTN.

* QC would like to use "and/or" rather than "and"
* Samsung thinks that at least assisted cell selection / reselection based on satellite ephemeris should be supported
* Mediatek thinks we should clarify what we mean by ephemeris, e.g. use "long term satellite ephemeris". Also supports Samsung comment on UE location
* Thales thinks we could discuss later about the details of ephemeris.
* LG thinks we can say " may be introduced"

Proposal 5.1: The satellite ephemeris should be provided to UE.

Agreements:

1. Cell selection / reselection in NR is the baseline in NTN idle mode procedure.
2. Satellite/HAPS ephemeris based cell selection and reselection should be defined for NTN (FFS what the term satellite/HAPS ephemeris actually means). FFS when this ephemeris based cell selection / reselection can be used. FFS whether UE location (and/or other information) based cell selection and reselection should be introduced for NTN
3. The satellite ephemeris should be provided to UE, at least for Satellite/HAPS ephemeris based cell selection and reselection (FFS what the term satellite/HAPS ephemeris actually means).

List of proposals to be discussed online

Proposal 3.1: The network type (e.g. NTN) should be indicate to UE. FFS whether to do it in a implicit or explicit way.

Proposal 3.2: If ephemeris is provided to UE, then there is no need to indicate the GEO/LEO type explicitly. It is FFS whether an explicit indicator is needed to indicate the earth fixed beam or moving beam.

Proposal 4: The existing cell reselection priority configuration can be reused in NTN.

Proposal 5.2: The following options can be considered for the format of the satellite ephemeris to be provided to UE, FFS on whether to support one from the options or both:

Option 1: Orbital parameters (including orbital plane parameters and satellite level parameters).

Option 2: The satellite in coordinates (x, y, z), e.g. ECEF coordinates.

Proposal 6: Postpone the discussion on whether to introduce a new SIB until we have more progress on the content of NTN specific system information.

[R2-2008213](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008213.zip) Summary of offline 106 - Idle mode issues ZTE corporation discussion Rel-16 NR\_NTN\_solutions-Core

List of proposals for agreement

Proposal 3.1: The network type (e.g. NTN) should be known to UE. FFS whether to achieve this in an implicit or explicit way.

* Agreed

Proposal 4: The existing cell reselection priority configuration can be taken as a baseline in NTN. FFS on any further enhancement.

* Agreed

Proposal 6: Postpone the discussion on whether to introduce a new SIB until we have more progress on the content of NTN specific system information.

* Agreed

List of proposals to be discussed online

Proposal 3.2: If ephemeris is provided to UE, then there is no need to indicate the GEO/LEO type explicitly. It is FFS whether to indicate the earth fixed beam or moving beam.

* Nokia wonders why it can’t be agreed along with the other proposals, especially as its first part was massively supported, while the second part is marked with ‘’FFS’’, so can be discussed at next meeting
* Samsung does not agree, the ephemeris might be received after the UE performs cell selection
* Google also thinks we don't need to agree this proposal for now

Agreements via email - from offline 106:

1. The network type (i.e. TN or NTN) should be known to UE. FFS whether to achieve this in an implicit or explicit way.
2. The existing cell reselection priority configuration can be taken as a baseline in NTN. FFS on any further enhancement.
3. Postpone the discussion on whether to introduce a new SIB until we have more progress on the content of NTN specific system information.

[R2-2006628](file:///C:\Data\3GPP\Extracts\R2-2006628%20Initial%20Discussion%20for%20Idle%20and%20Inactive%20Mode%20in%20NTN.docx) Initial Discussion for Idle and Inactive Mode in NTN CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2006642](file:///C:\Data\3GPP\Extracts\R2-2006642_Idle%20Mode%20Procedure%20in%20NR-NTN_v2.0.docx) On Idle Mode Procedures in NR-NTN MediaTek Inc. discussion

[R2-2006783](file:///C:\Data\3GPP\Extracts\R2-2006783%20-%20Discussion%20on%20cell%20reselection%20for%20NTN.doc) Discussion on cell reselection for NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2006821](file:///C:\Data\3GPP\Extracts\R2-2006821%20Issues%20of%20the%20Fixed%20Tracking%20Area%20in%20NTN.docx) Issues of the Fixed Tracking Area in NTN PANASONIC R&D Center Germany discussion

[R2-2006924](file:///C:\Data\3GPP\Extracts\._R2-2006924%20HAPS-Satellite%20ephemeris%20broadcast.docx) HAPS-Satellite ephemeris broadcast Loon discussion Rel-17

[R2-2006925](file:///C:\Data\3GPP\Extracts\._R2-2006925%20HAPS-Terrestrial%20PCI%20confusion%20mitigation.docx) HAPS-Terrestrial PCI confusion mitigation Loon and Google discussion Rel-17

[R2-2006929](file:///C:\Data\3GPP\Extracts\R2-2006929.docx) Tracking area issue for NTN Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2006945](file:///C:\Data\3GPP\Extracts\R2-2006945_For8.10.3.1_CP_IdleInactiveMode_ObservationsProposals_Samsung.doc) Control Plane Enhancements for Idle and Inactive Modes in an NTN- Overall Observations and Proposals SAMSUNG discussion Rel-17 NR\_NTN\_solutions

[R2-2007048](file:///C:\Data\3GPP\Extracts\R2-2007048.doc) Consideration on Celll Reselection evaluation in NTN Spreadtrum Communications discussion

[R2-2007175](file:///C:\Data\3GPP\Extracts\R2-2007175_Control%20plane%20for%20idle%20mode%20UE.doc) Control Plane for Idle/Inactive mode UE Beijing Xiaomi Electronics discussion

[R2-2007184](file:///C:\Data\3GPP\Extracts\R2-2007184.doc) Idle mode enhancement in NTN Sony discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007251](file:///C:\Data\3GPP\Extracts\R2-2007251_NTN_ephemeris.doc) Ephemeris data to be included in system information ITRI discussion NR\_NTN\_solutions-Core

[R2-2007362](file:///C:\Data\3GPP\Extracts\R2-2007362%20%20On%20Tracking%20Areas%20and%20IDLE%20mode%20handling%20for%20NTN.docx) On Tracking Areas and IDLE mode handling for NTN Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007429](file:///C:\Data\3GPP\Extracts\R2-2007429%20Discussion%20of%20cell%20selection%20and%20reselection%20for%20NTN.docx) Discussion of cell selection and reselection for NTN CMCC discussion Rel-17 NR\_NTN\_solutions-Core

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

[R2-2007558](file:///C:\Data\3GPP\Extracts\R2-2007558%20NTN%20CP.docx) Idle mode aspects for NTN Ericsson discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007743](file:///C:\Data\3GPP\Extracts\R2-2007743%20Initial%20discussion%20on%20Idle%20mode%20procedures%20in%20NR%20NTN.doc) Initial discussion on Idle mode procedures in NR NTN LG Electronics France discussion Rel-17

* [POST111e][XXX][NTN] Impacts of earth fixed and moving beams (Ericsson)

Scope: Discuss RAN2 impacts of earth fixed and moving beams, both for idle and connected mode, for feeder link switch in both Earth moving and Earth fixed beam and for service link switch in Earth fixed beams case due to satellite switch. No discussion on measurement aspects

Intended outcome: email discussion summary

Deadline: Until next meeting

#### 8.10.3.2 Connected mode

Including mobility management.

[R2-2006930](file:///C:\Data\3GPP\Extracts\R2-2006930.docx) mobility enhacement for NTN Intel Corporation discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2006629](file:///C:\Data\3GPP\Extracts\R2-2006629%20Initial%20Discussion%20for%20Connected%20Mode%20in%20NTN.docx) Initial Discussion for Connected Mode in NTN CATT discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2006643](file:///C:\Data\3GPP\Extracts\R2-2006643_Connected%20Mode%20Procedure%20in%20NR-NTN_v2.0.docx) On Connected Mode Mobility Procedures in NR-NTN MediaTek Inc. discussion

[R2-2006784](file:///C:\Data\3GPP\Extracts\R2-2006784%20NTN%20connected%20mode%20mobility.doc) Discussion on mobility management for connected mode UE in NTN OPPO discussion Rel-17 NR\_NTN\_solutions-Core

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

[R2-2006873](file:///C:\Data\3GPP\Extracts\R2-2006873_Consideration%20on%20mobility%20enhancement%20in%20NTN-v0.docx) Consideration on mobility enhancement in NTN ZTE corporation, Sanechips discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2006953](file:///C:\Data\3GPP\Extracts\R2-2006953_For8.10.3.2_UP_ConnectedMode_ObservationsProposals_Samsung.doc) Control Plane Enhancements for the Connected Mode in an NTN- Overall Observations and Proposals SAMSUNG discussion Rel-17 NR\_NTN\_solutions

[R2-2006975](file:///C:\Data\3GPP\Extracts\R2-2006975.doc) Connected mode mobility enhancements Qualcomm Inc discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007144](file:///C:\Data\3GPP\Extracts\R2-2007144%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

[R2-2007174](file:///C:\Data\3GPP\Extracts\R2-2007174_Control%20plane%20for%20connected%20mode%20UE.doc) Control Plane for Connected mode UE Beijing Xiaomi Electronics discussion

[R2-2007183](file:///C:\Data\3GPP\Extracts\R2-2007183.doc) Mobility management in NTN Sony discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007463](file:///C:\Data\3GPP\Extracts\R2-2007463%20Mobility%20Management%20in%20NTN%20v1.1.doc) Mobility management in NTN Lenovo, Motorola Mobility discussion Rel-17

[R2-2007601](file:///C:\Data\3GPP\Extracts\R2-2007601%20Adjusting%20timers%20according%20to%20delay%20variations%20in%20NTN.docx) Adjusting timers according to delay variations in NTN Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007618](file:///C:\Data\3GPP\Extracts\R2-2007618%20(R17%20NTN%20WI%20AI%208.10.3.2%20connected%20mode%20mobility).docx) Location-assisted connected mobility in NTN InterDigital discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007744](file:///C:\Data\3GPP\Extracts\R2-2007744%20Initial%20discussion%20on%20connected%20mobility%20in%20NR%20NTN.doc) Initial discussion on connected mobility in NR NTN LG Electronics France discussion Rel-17 NR\_NTN\_solutions-Core

[R2-2007955](file:///C:\Data\3GPP\Extracts\R2-2007955%20Discussion%20on%20Delay%20Difference%20on%20Measurements%20for%20NTN_v1.docx) Discussion on delay difference on measurements for NTN Asia Pacific Telecom co. Ltd discussion NR\_NTN\_solutions-Core

Late

[R2-2006547](file:///C:\Data\3GPP\Extracts\R2-2006547%20Discussion%20on%20feeder%20link%20hard%20switch%20in%20NTN%20LEO.doc) Discussion on feeder link hard switch in NTN LEO CENC discussion Late

[R2-2006552](file:///C:\Data\3GPP\Extracts\R2-2006552%20Feeder%20link%20hard%20switch%20triggered%20HO.doc) Feeder link hard switch triggered HO CENC discussion Late

[R2-2006553](file:///C:\Data\3GPP\Extracts\R2-2006553%20Gateway%20data%20handling%20in%20NTN%20LEO.doc) Gateway data handling in NTN LEO CENC discussion Late

* [POST111e][XXX][NTN] Connected mode aspects (ZTE)

Scope: Discuss connected mode specific aspects, including measurement configuration/reporting aspects, CHO, etc. Assume the scenario for Earth moving or Earth fixed beam when there is no feeder link switch or service link switch in Earth fixed beams due to satellite switch.

Intended outcome: email discussion summary

Deadline: Until next meeting

## 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: 2 TU

Tdoc Limitation: 4 tdocs

Email max expectation: 4 threads

### 8.12.1 Organizational and scope

Get a common understanding of the SID, eg. what is RAN2 scope in the RAN1 centric objectives, what is required to be in the TR in order to start a WI.

[R2-2006910](file:///C:\Data\3GPP\Extracts\R2-2006910%20-%20%20Scope%20of%20Redcap%20SI.docx) Scope of RedCap SI Ericsson discussion FS\_NR\_redcap

* Discussed in offline 108

[R2-2007366](file:///C:\Data\3GPP\RAN2\Docs\R2-2007366.zip) TR38.875 skeleton updates for Study on support of reduced capability NR devices Ericsson discussion

* Endorsed

R2-2008190 TR38.875 skeleton updates for Study on support of reduced capability NR devices Ericsson discussion

* Withdrawn
* [AT111e][108][REDCAP] Scope and skeleton update (Ericsson)

Scope: Discuss the SI scope in [R2-2006910](file:///C:\Data\3GPP\Extracts\R2-2006910%20-%20%20Scope%20of%20Redcap%20SI.docx) and the skeleton update in [R2-2007366](file:///C:\Data\3GPP\Extracts\R2-2007366%20TR38875%20skeleton%20updates%20cover%20page.docx)

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

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

and skeleton update

Initial deadline (for companies' feedback): Monday 2020-08-24 16:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008189](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008189.zip)): Monday 2020-08-24 18:00 UTC

[R2-2008189](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008189.zip) Summary of offline 108 - RedCap scope and skeleton update Ericsson discussion Rel-16 FS\_NR\_redcap

Agreeable, directly in SI scope, consensus:

Proposal 5 RAN2 studies, and provides input to TR 38.875, on whether and how it can be ensured RedCap UEs are used only for intended use cases. This may require coordination with other WGs (e.g. RAN3 / SA / CT).

Proposal 6 RAN2 studies, and provides input to TR 38.875, on how and when to identify RedCap UEs and how to control RedCap UE access in RAN. Before concluding the identification discussion, further progress is needed in RAN1.

Agreements via email - from offline 108:

1. RAN2 studies, and provides input to TR 38.875, on whether and how it can be ensured RedCap UEs are used only for intended use cases. This may require coordination with other WGs (e.g. RAN3 / SA / CT).
2. RAN2 studies, and provides input to TR 38.875, on how and when to identify RedCap UEs and how to control RedCap UE access in RAN. Before concluding the identification discussion, further progress is needed in RAN1.

Easily agreeable, about SI scope:

Proposal 2 For power saving, study on extended DRX for idle and inactive modes and RRM relaxation for stationary RedCap devices is prioritized, and input to be provided to TR 38.875. Further topics can be discussed as 2nd priority or potentially left for WI phase.

* Mediatek is ok with the first part of p2 (reconfirmation of the SID). Futurewei agrees; Additional objectives should be discussed in plenary first. Intel has the same view. LG agrees
* LG asks what stationary devices means in this case. VC confirms this aspect will be discussed later
* QC/Apple thinks there was support for Connected mode enhancements as well and think we should also consider them as part of the SI
* Apple also wonders whether extended DRX is a general concept or whether it refers to e-DRX only

Proposal 3 For stationary UEs, RRM relaxation for both neighboring cell and serving cell measurements, for any RRC state, are studied further.

* Oppo thinks we need to clarify the scope of RRM relaxation part
* Mediatek agrees with Oppo, we need to take into account what was done in R16 and what is being done in R17 in other WIs, for instance serving cell relaxation is being done in RAN4 in R17.
* Vivo thinks that all enhancements in other WIs can be applicable to REDCAP UEs, however we could further relax for REDCAP UEs, also considering they are stationary UEs, still avoiding duplication of the work

Agreements:

1. For power saving, for now RAN2 studies extended DRX for idle and inactive modes and RRM relaxation for stationary RedCap devices, and input to be provided to TR 38.875.
2. Depending on RAN1 input, discussion is expected at least on the following impacts on RAN2 procedures:

a. Impact on cell (re)selection

b. Impact on initial access

c. Impact on other idle mode procedures (i.e. SI acquisition, paging)

FFS:

1. Whether reduction of upper layer capabilities should be considered is FFS (in any case no email discussion until the next meeting on this)

May require some discussion:

Proposal 1 Discussion on the following expected impacts on RAN2 procedures are prioritized:

a. Impact on cell (re)selection

b. Impact on initial access

c. Impact on idle mode procedures (i.e. SI acquisition, paging)

- Intel agrees but we should wait for RAN1 input

- Nokia suggests to add "at least"

- Xiaomi wonders about UP impacts

- QC wonders about the reduction of upper layer capabilities (e.g. number of DRBs, etc.).

Proposal 4 RAN2 studies whether / how RedCap UE type is defined. Both RAN1 and RAN2 should be included in final determination where RAN1 studies the objective from physical layer (complexity reduction) point of view and RAN2 studies how potential definition would be captured and relation e.g. to UE capabilities.

Proposals on organizational matters:

Proposal 7 No RAN2 input on TR 38.875 skeleton is identified, for now.

* Check in the CB session if we can actually endorse the TR skeleton in [R2-2007366](file:///C:\Data\3GPP\RAN2\Docs\R2-2007366.zip)

Proposal 8 RAN2 to consider running email discussions with TPs to TR 38.875 as intended output until next meeting. The exact scope should be clarified once progress during RAN2#111 is clear. The proposed topics, per sections in TR skeleton, are:

a. UE power saving features (eDRX in idle and inactive, RRM relaxation for stationary devices)

b. Definition and constraining of reduced capabilities

c. UE identification and access restrictions

[R2-2006732](file:///C:\Data\3GPP\Extracts\R2-2006732%20General%20views%20on%20Higher-layer%20impacts%20for%20Redcap%20devices-0807.doc) General views on Higher-layer impacts for Redcap devices Xiaomi Communications discussion

[R2-2006753](file:///C:\Data\3GPP\Extracts\R2-2006753-redcap-RAN1-2-scope.docx) RAN1-2 work scope discussion on RedCap capability Intel Corporation discussion Rel-17 FS\_NR\_redcap

[R2-2006978](file:///C:\Data\3GPP\Extracts\R2-2006978_RedCap%20scope.docx) Expected RAN2 scope of RedCap NEC discussion Rel-17 FS\_NR\_redcap

* [POST111e][XXX][REDCAP] TP for the TR (Ericsson)

Scope: Draft a TP for the TR based on the meeting agreements

Intended outcome: email discussion summary and draft TR

Deadline: Until next meeting

### 8.12.2 Framework for reduced capabilities

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

[R2-2006751](file:///C:\Data\3GPP\Extracts\R2-2006751-redcap-capabilty-framework.docx) Reduced capability signalling framework Intel Corporation discussion Rel-17 FS\_NR\_redcap

* Discussed in offline 109

[R2-2006911](file:///C:\Data\3GPP\Extracts\R2-2006911%20Framework%20and%20Principles%20for%20Reduced%20Capability.docx) Framework and Principles for Reduced Capability Ericsson discussion FS\_NR\_redcap

* Discussed in offline 109

[R2-2006605](file:///C:\Data\3GPP\Extracts\R2-2006605_Defining%20and%20constraining%20UEs%20with%20reduced%20capabilities.docx) Defining and constraining UEs with reduced capabilities Qualcomm Inc discussion Rel-17 FS\_NR\_redcap

* Discussed in offline 109
* [AT111e][109][REDCAP] Reduced capability signalling framework (Intel)

Scope: Discuss the proposals in [R2-2006751](file:///C:\Data\3GPP\Extracts\R2-2006751-redcap-capabilty-framework.docx), [R2-2006911](file:///C:\Data\3GPP\Extracts\R2-2006911%20Framework%20and%20Principles%20for%20Reduced%20Capability.docx) and [R2-2006605](file:///C:\Data\3GPP\Extracts\R2-2006605_Defining%20and%20constraining%20UEs%20with%20reduced%20capabilities.docx). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Monday 2020-08-24 22:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008191](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008191.zip)): Tuesday 2020-08-25 02:00 UTC

[R2-2008191](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008191.zip) Summary of offline 109 - Reduced capability signalling framework Intel discussion Rel-16 FS\_NR\_redcap

List of agreeable proposals

Agreeable proposal 1: For device identification, access restriction restriction(including initial access) and making sure the intended use cases, the network needs to know whether the UE is redCap UE or not. FFS on whether based on explicit or implicit signalling;

* LG would like to clarify if a single device can have different levels of UE capabilities.
* Futurewei is fine; regarding LG question: UE needs to report one set of capability at a time
* Apple wonders what is meant by implicit signalling. Intel thinks that this can be done e.g. by using different initial BWP. Apple wonders whether this means that this is a "network signalling". Intel thinks the meaning of implicit signalling can be even broader, simply it means that there is no explicit indication "I'm a Redcap UE"
* Fraunhofer would like to remove "making sure the intended use cases". Telecom Italia thinks we should keep that part. Ericsson agrees with Fraunhofer and in any case the wording is strange.

Agreeable proposal 2: The existing UE capabilities framework is used as baseline to indicate reduced capabilities;

* Huawei is fine, but some UE capabilities may not apply to Redcap UEs at all
* QC wonders about the meaning of reduced capabilities: is this the indication this is a Redcap UE or its actual capabilities

Agreeable proposal 3: The number of device types should be minimised and introduced only where essential to control UE accesses and industry classification, e,g, differentiate them from legacy R15/16 UEs, ( number of Tx/Rx antennas, maximum supportable BW, etc. ). The exact composition of this set can be discussed by RAN1.

* Apple agrees with the intention and wonders whether RAN2 could inform RAN1 on this
* HW also agrees with the intention and wonders about the reference "industry classification"
* Futurewei thinks we don't need to add justification for minimizing the number of device types
* Mediatek thinks its ok to discuss this in RAN1 only
* Nokia/Vivo/ZTE think we don't need to send an LS to RAN1
* ZTE think that the discussion how to link to the device type is related to P4

Agreeable proposal 4: Discuss in normative phase on whether and how Device type and its associated capabilities (the reduced set of capabilities) is captured in specifications, and whether device type is indicated as part of UE capability;

* Apple wonders whether we need to refer to "its associated capabilities (the reduced set of capabilities)"
* QC think we should address this in the SI phase, as this is an essential part of the SI.
* Vivo agrees with the proposal.
* ZTE is generally fine with the proposal. In response to QC concern, ZTE thinks that in any case the network needs to know whether the UE is Redcap or not.
* Futurewei agrees with the proposal. Nokia also supports

Agreeable proposal 5: The SI objective of “checking device is used only as intended”, i.e. verification can be met by using existing capabilities signaling, a redCap UE indication, UE subscription, cause value or other solutions. Solution details need further discussion;

Agreements:

1. At least for device type identification and access restriction (including initial access), the network needs to know whether the UE is redCap UE or not. FFS on whether based on explicit or implicit signalling.
2. The existing UE capabilities framework is used as baseline to indicate the capabilities of a RedCap UE (this does not imply anything on the reporting of the device type, if the need for a device type will be agreed)
3. The number of device types should be minimised, to reduce market fragmentation, and introduced only where essential to control UE accesses and differentiate them from legacy R15/R16 and non-Redcap R17 UEs, (e.g. number of Tx/Rx antennas, maximum supportable BW, etc.). The exact composition of the set of L1 capabilities of the device type can be discussed by RAN1
4. Discuss in normative phase on whether to signal (and in case how) a Device type and its associated capabilities (the reduced set of capabilities) is captured in specifications, and whether device type is indicated as part of UE capability;

List of proposals that require online discussions

Rapporteur suggestion 1 (need online discussion): Continue the discussion on potential solutions for verification “checking device is used only as intended” ;

Rapporteur suggestion 2 (need online discussion): Ask RAN2 to discuss whether an email discussion is needed on potential solutions for verification. The expected outcome can be to identify new solutions, clarify solution details, provide agreeable text proposal for solution details;

[R2-2006660](file:///C:\Data\3GPP\Extracts\R2-2006660.docx) Capability and initial access of RedCap UEs Samsung discussion Rel-17 FS\_NR\_redcap

[R2-2006691](file:///C:\Data\3GPP\Extracts\._R2-2006691_UE%20type%20and%20capability%20for%20RedCap%20UEs.doc) UE type and capability for RedCap UEs vivo, Guangdong Genius discussion Rel-17 FS\_NR\_redcap

[R2-2006733](file:///C:\Data\3GPP\Extracts\R2-2006733%20Discussion%20on%20UE%20Capaiblity%20Issues%20for%20reduced%20capability%20NR%20devices.doc) Discussion on UE Capaiblity Issues for reduced capability NR devices Xiaomi Communications discussion

[R2-2006785](file:///C:\Data\3GPP\Extracts\R2-2006785%20RedCap%20type.doc) Discussion on definition of RedCap Ues OPPO discussion Rel-17 FS\_NR\_redcap

[R2-2006903](file:///C:\Data\3GPP\Extracts\R2-2006903%20Define%20and%20Constrain%20Reduced%20Capability.docx) Define and constrain reduced capability ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_redcap

[R2-2007011](file:///C:\Data\3GPP\Extracts\R2-2007011.doc) On definition and constraint of reduced capabilities CATT discussion Rel-17 FS\_NR\_redcap

[R2-2007110](file:///C:\Data\3GPP\Extracts\._R2-2007110_redCap_Access.docx) RedCap UE characterization and access restriction Apple discussion Rel-17 FS\_NR\_redcap

[R2-2007344](file:///C:\Data\3GPP\Extracts\R2-2007344%20Capability%20definition%20of%20REDCAP%20UE.doc) Capability definition of REDCAP UE Huawei, HiSilicon discussion Rel-17 FS\_NR\_redcap

[R2-2007400](file:///C:\Data\3GPP\Extracts\R2-2007400%20Discussion%20on%20how%20to%20define%20reduced%20capability%20devices.docx) Discussion on how to define reduced capability devices LG Electronics UK discussion Rel-17

[R2-2007478](file:///C:\Data\3GPP\Extracts\R2-2007478_The%20principle%20to%20constrain%20reduced%20capability%20NR%20devices.docx) The principle to constrain reduced capability NR devices Lenovo, Motorola Mobility discussion Rel-17

[R2-2007490](file:///C:\Data\3GPP\Extracts\R2-2007490%20Principles%20for%20reduced%20capabilities.docx) Principles for reduced capabilities Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_redcap

[R2-2007492](file:///C:\Data\3GPP\Extracts\R2-2007492%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

* [POST111e][XXX][REDCAP] Definition and constraining of reduced capabilities (Intel)

Scope: Continue to discuss the UE capability framework, how to define and constrain reduced capabilities, addressing the open issues and discussing potential solutions

Intended outcome: email discussion summary

Deadline: Until next meeting

#### 8.12.2.2 Identification and access restrictions

[R2-2007345](file:///C:\Data\3GPP\Extracts\R2-2007345%20Identification%20and%20access%20restriction%20of%20REDCAP%20UE.doc) Identification and access restriction of REDCAP UE Huawei, HiSilicon discussion Rel-17 FS\_NR\_redcap

* Discussed in offline 110

[R2-2006661](file:///C:\Data\3GPP\Extracts\R2-2006661.docx) Coexistence between legacy UEs and RedCap UEs Samsung discussion Rel-17 FS\_NR\_redcap

* Discussed in offline 110

[R2-2006786](file:///C:\Data\3GPP\Extracts\R2-2006786%20RedCap%20Identification%20and%20access%20restrictions.doc) Discussion on RedCap UE’s identification and access control OPPO discussion Rel-17 FS\_NR\_redcap

* Discussed in offline 110

[R2-2007493](file:///C:\Data\3GPP\Extracts\R2-2007493%20-%20On%20UE%20identification%20and%20access%20restrictions.docx) On UE identification and access restrictions MediaTek Inc. discussion Rel-17 FS\_NR\_redcap

* Discussed in offline 110
* [AT111e][110][REDCAP] Identification and access restriction (Huawei)

Scope: Discuss the proposals in [R2-2007345](file:///C:\Data\3GPP\Extracts\R2-2007345%20Identification%20and%20access%20restriction%20of%20REDCAP%20UE.doc), [R2-2006661](file:///C:\Data\3GPP\Extracts\R2-2006661.docx), [R2-2006786](file:///C:\Data\3GPP\Extracts\R2-2006786%20RedCap%20Identification%20and%20access%20restrictions.doc) and [R2-2007493](file:///C:\Data\3GPP\Extracts\R2-2007493%20-%20On%20UE%20identification%20and%20access%20restrictions.docx). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Monday 2020-08-24 22:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008192](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008192.zip)): Tuesday 2020-08-25 02:00 UTC

[R2-2008192](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008192.zip) Summary of offline 110 - Identification and access restriction Huawei discussion Rel-16 FS\_NR\_redcap

Propose to agree as there is clear majority view:

Proposal 2: One indication in system information is needed to indicate whether a REDCAP UE can camp on the cell.

* Apple wonders about the need to say "one" indication
* Vivo suggest to add an FFS for 2a.

Proposal 6: UAC mechanism also apply to REDCAP UEs.

Agreements:

1. An indication in system information is needed to indicate whether a REDCAP UE can camp on the cell. FFS whether the indication is explicit or implicit.
2. UAC mechanism also apply to REDCAP UEs.
3. System information indicates whether REDCAP operation is allowed/barred on a frequency. FFS reuse the legacy intraFreqReselection or introduce separate flag
4. Further discuss enhancement of UAC for REDCAP UEs, including e.g.:

a. define new Access Identity for REDCAP UEs

b. define new Access Categories for REDCAP UEs

(for any final decision we need to check with SA1 and/or CT1)

Propose to further discuss as there is no clear majority view:

Proposal 2a: Further discuss whether the indication is explicit or implicit.

Proposal 2b: Further discuss whether the indication is transmitted in MIB or SIB1.

Proposal 4: System information indicates whether REDCAP operation is allowed/barred on a frequency. FFS reuse the legacy intraFreqReselection or introduce separate flag.

Proposal 6a: Further discuss the following enhancement of UAC for REDCAP UEs:

- define new Access Identity for REDCAP UEs

- define new Access Categories for REDCAP UEs

- LG wonders if RAN2 can decide on this or whether we need to ask SA1, possibly also CT1.

- Mediatek agrees with LG; new access identity seems more reasonable than new access categories

- Oppo think in any case we might need to introduce other barring parameters as a consequence

- ZTE thinks that if we introduce a separate SIB we might not need new Access Identities nor Access Categories

- QC has some reservation on the use of new access categories and in any case this should be a discussion for the normative phase.

Propose to further discuss as RAN1 input maybe needed:

Proposal 1: Wait for RAN1 input regarding whether REDCAP UEs can camp on a cell with the bandwidth of CORESET#0 not supported by the UE.

Proposal 3: Wait for RAN1 input regarding whether REDCAP UEs can camp on a cell with larger initial DL/UL BWP than supported by the UE.

Proposal 5: Wait for RAN1 input before discussing when and how to identify REDCAP UEs in RAN2.

[R2-2006606](file:///C:\Data\3GPP\Extracts\R2-2006606_Identification%20and%20access%20restriction%20for%20RecCap%20UEs.docx) Identification and access restriction for RedCap UEs Qualcomm Inc discussion Rel-17 FS\_NR\_redcap

[R2-2006692](file:///C:\Data\3GPP\Extracts\R2-2006692%20Identification%20and%20Access%20Restrictions%20for%20RedCap%20UEs%20v1.0.docx) Identification and access restrictions for RedCap UEs vivo, Guangdong Genius discussion Rel-17 FS\_NR\_redcap

[R2-2006734](file:///C:\Data\3GPP\Extracts\R2-2006734%20Discussion%20on%20Identification%20and%20UE%20access%20restrictions%20for%20Redcap%20devices.doc) Discussion on Identification and UE access restrictions for Redcap devices Xiaomi Communications discussion

[R2-2006752](file:///C:\Data\3GPP\Extracts\R2-2006752-redcap-access-control.docx) Identification and Access restriction for RedCap devices Intel Corporation discussion Rel-17 FS\_NR\_redcap

[R2-2006904](file:///C:\Data\3GPP\Extracts\R2-2006904%20Redcap%20UE%20identification%20and%20access%20control.docx) Identification and access control for Redcap UE ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_redcap

[R2-2006912](file:///C:\Data\3GPP\Extracts\R2-2006912%20-%20%20Identification%20and%20restriction%20of%20devices%20for%20NR%20Redcap.docx) Identification and access restriction for devices with reduced capabilities Ericsson discussion FS\_NR\_redcap

[R2-2006979](file:///C:\Data\3GPP\Extracts\R2-2006979_RedCap%20const.docx) Constraint on usage of RedCap functions NEC discussion Rel-17 FS\_NR\_redcap

[R2-2007012](file:///C:\Data\3GPP\Extracts\R2-2007012.doc) Identification and access restrictions for reduced capability UE CATT discussion Rel-17 FS\_NR\_redcap

[R2-2007399](file:///C:\Data\3GPP\Extracts\R2-2007399%20Access%20restriction%20for%20reduced%20capability%20devices.docx) Access restriction for reduced capability devices LG Electronics UK discussion Rel-17

[R2-2007480](file:///C:\Data\3GPP\Extracts\R2-2007480_Discussion%20on%20the%20identification%20of%20Redcap.docx) Discussion on the identification of Redcap Lenovo, Motorola Mobility discussion Rel-17

[R2-2007491](file:///C:\Data\3GPP\Extracts\R2-2007491%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

[R2-2007560](file:///C:\Data\3GPP\Extracts\R2-2007560%20Cell%20access%20restrictions%20for%20REDCAP%20UE.docx) Cell access restrictions for REDCAP UE Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_redcap

* [POST111e][XXX][REDCAP] UE identification and access restrictions (Huawei)

Scope: Discuss UE identification and access restrictions, addressing open issues from the meeting, taking into account possible RAN1 agreements and identifying possible solutions

Intended outcome: email discussion summary

Deadline: Until next meeting

### 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).

DRX

[R2-2007013](file:///C:\Data\3GPP\Extracts\R2-2007013.doc) eDRX for NR RRC Inactive and Idle States CATT discussion Rel-17 FS\_NR\_redcap

* Discussed in offline 111

[R2-2007346](file:///C:\Data\3GPP\Extracts\R2-2007346%20Discussion%20on%20eDRX%20for%20RRC_INACTIVE%20and%20RRC_IDLE.doc) Discussion on eDRX for RRC\_INACTIVE and RRC\_IDLE Huawei, HiSilicon discussion Rel-17 FS\_NR\_redcap

* Discussed in offline 111

[R2-2007494](file:///C:\Data\3GPP\Extracts\R2-2007494%20eDRX%20for%20reduced%20capability%20UEs.docx) eDRX for reduced capability UEs MediaTek Inc. discussion Rel-17 FS\_NR\_redcap

* Discussed in offline 111

[R2-2006748](file:///C:\Data\3GPP\Extracts\R2-2006748_RedCap_PowSav_eDRX-Meas.docx) Use cases target to extend paging DRX cycle and relax measurements for stationary devices Intel Corporation discussion Rel-17 FS\_NR\_redcap

* Proposals 1 to 4 discussed in offline 111
* [AT111e][111][REDCAP] DRX aspects (CATT)

Scope: Discuss the proposals in [R2-2007013](file:///C:\Data\3GPP\Extracts\R2-2007013.doc), [R2-2007346](file:///C:\Data\3GPP\Extracts\R2-2007346%20Discussion%20on%20eDRX%20for%20RRC_INACTIVE%20and%20RRC_IDLE.doc), [R2-2007494](file:///C:\Data\3GPP\Extracts\R2-2007494%20eDRX%20for%20reduced%20capability%20UEs.docx) as well as proposals 1 to 4 in [R2-2006748](file:///C:\Data\3GPP\Extracts\R2-2006748_RedCap_PowSav_eDRX-Meas.docx). The intention is to identify design alternatives, collect company views and, whenever possible, also narrow down the proposals.

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

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

Initial deadline (for companies' feedback): Monday 2020-08-24 22:00 UTC

Initial deadline (for rapporteur's summary in [R2-2008193](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008193‎.zip)): Tuesday 2020-08-25 02:00 UTC

Updated scope: Continue the discussion on remaining proposals in [R2-2008193](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008193‎.zip) (not agreed during the online session):

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

* + - List of proposals for agreement
    - List of proposals that require online discussions

Final deadline (for companies' feedback): Thursday 2020-08-27 06:00 UTC

Final deadline (for rapporteur's summary in [R2-2008216](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008216.zip)): Thursday 2020-08-27 08:00 UTC

Proposals marked "for agreement" in [R2-2008216](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008216.zip) not challenged until Thursday 2020-08-27 18:00 UTC will be declared as agreed by the session chair. For the rest the discussion might continue in the CB online session on Friday 2020-08-28.

[R2-2008193](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008193‎.zip) Summary of offline 111 - DRX aspects CATT discussion Rel-16 FS\_NR\_redcap

List of pontentially agreeable proposals

On RRC states

Proposal 1 RAN2 study eDRX mechanism for both RRC\_IDLE and RRC\_INACTIVE in this SI. ‎

On baseline eDRX mechanism

Proposal 2 If the DRX cycle range is extended beyond 10.24s, the LTE ‎eDRX mechanism is used as baseline for NR eDRX in further studies of this SI.

* Oppo thinks that in LTE the eDRX cycle can also be 5s: should we consider LTE as a baseline also in this case? CATT think that the principle is that LTE should be the baseline. Vivo assumes this means that we use a PTW mechanism and then it's fine.
* ZTE wonders about the case the value is exactly 10.24s, shall we still use LTE as a reference? Also wonders whether this p2 is only for RRC\_IDLE
* CATT suggests to remove the first part of p2: LTE eDRX should be the baseline in general.
* QC thinks we should decide the max cycle length first.

On eDRX cycle range, RRC\_INACTIVE

Proposal 3 For RRC\_INACTIVE, the DRX cycle is extended to 10.24s as baseline. FFS on the performance and complexity of further extension.

* Intel is fine with p3.
* Convida is fine with p3
* Ericsson wonder around the need of FFS in p3

On eDRX cycle range, for all RRC states

Proposal 5 DRX cycle range beyond 2621.44s is not considered in further studies of this SI.

Agreements:

1. RAN2 study eDRX mechanism for both RRC\_IDLE and RRC\_INACTIVE in this SI. ‎
2. For RRC\_INACTIVE, the DRX cycle is extended to 10.24s as baseline.

List of proposals for further discussions

On eDRX cycle range, RRC\_IDLE

Proposal 4 For RRC\_IDLE, the DRX cycle is at least extended to 10.24s. RAN2 to discuss whether for RRC\_IDLE, the DRX cycle is extended to 2621.44s.

* Mediatek wonders why this number and not a higher one?
* Ericsson thinks this is what LTE-M supports.
* CATT think that majority of companies think there is no use cases for longer values

On possible LS to SA2 and other CT WG(s)

Proposal 6 RAN2 to discuss whether an LS is sent to SA2 and CT WG(s) to inform their progress on NR eDRX (if any)

[R2-2008216](file:///C:\Data\3GPP\RAN2\Inbox\R2-2008216.zip) Summary of offline 111 - DRX aspects - second round CATT discussion Rel-16 FS\_NR\_redcap

List of proposals for agreement

Proposal 1 For RRC\_IDLE, the DRX cycle is at least extended to 10.24s. FFS on further extension ‎beyond 10.24s.

* Agreed ‎

Proposal 2 For RRC\_IDLE and/or RRC\_INACTIVE, if the NR DRX cycle range is extended beyond 10.24s, the LTE ‎eDRX mechanism beyond 10.24s (e.g., PTW, PH, etc.) is used as baseline when NR eDRX cycle is configured beyond 10.24s.

* Agreed ‎

List of proposals that require online discussions

Proposal 3 For RRC\_IDLE and RRC\_INACTIVE, the LTE ‎eDRX mechanism for 5.12s (i.e., paging cycle equal to eDRX cycle and no PTW) is used as ‎baseline when NR eDRX cycle is configured below 10.24s. ‎

* Convida is fine with this
* Intel/ZTE/LG think this is not very useful because the intention is to extend to at least 10.24s
* Oppo thinks we should consider the extension to 5.12

Proposal 4 FFS on baseline mechanism when the configured NR eDRX cycle is equal to 10.24s. ‎

Agreements via email - from offline 111:

1. For RRC\_IDLE, the DRX cycle is at least extended to 10.24s. FFS on further extension ‎beyond 10.24s.
2. For RRC\_IDLE and/or RRC\_INACTIVE, if the NR DRX cycle range is extended beyond 10.24s, the LTE ‎eDRX mechanism beyond 10.24s (e.g., PTW, PH, etc.) is used as baseline when NR eDRX cycle is configured beyond 10.24s.

FFS:

1. For RRC\_IDLE and/or RRC\_INACTIVE, FFS on baseline mechanism when the configured NR eDRX cycle is less or equal to 10.24s

[R2-2006607](file:///C:\Data\3GPP\Extracts\R2-2006607_Power%20saving%20enhancements%20for%20RecCap%20UEs.docx) Power saving enhancements for RedCap UEs Qualcomm Inc discussion Rel-17 FS\_NR\_redcap

[R2-2006694](file:///C:\Data\3GPP\Extracts\._R2-2006694%20DRX%20enhancement%20for%20RedCap%20UEs.docx) DRX enhancement for RedCap UEs vivo, Guangdong Genius discussion Rel-17 FS\_NR\_redcap

[R2-2006731](file:///C:\Data\3GPP\Extracts\R2-2006731%20Discussion%20on%20UE%20Power%20saving%20for%20Redcap%20Devices.doc) Discussion on UE Power saving for Redcap Devices Xiaomi Communications discussion

[R2-2006787](file:///C:\Data\3GPP\Extracts\R2-2006787%20-%20Consideration%20on%20extended%20DRX%20for%20RedCap.docx) Consideration on extended DRX for RedCap OPPO discussion Rel-17 FS\_NR\_redcap

[R2-2006905](file:///C:\Data\3GPP\Extracts\R2-2006905%20Introducation%20of%20eDRX%20for%20redcap.docx) Introduction of eDRX for Redcap UE ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_redcap

[R2-2007111](file:///C:\Data\3GPP\Extracts\._R2-2007111_redCap_power-saving.docx) Impact of power-saving aspects on RedCap UEs Apple discussion Rel-17 FS\_NR\_redcap

[R2-2007346](file:///C:\Data\3GPP\Extracts\R2-2007346%20Discussion%20on%20eDRX%20for%20RRC_INACTIVE%20and%20RRC_IDLE.doc) Discussion on eDRX for RRC\_INACTIVE and RRC\_IDLE Huawei, HiSilicon discussion Rel-17 FS\_NR\_redcap

[R2-2007393](file:///C:\Data\3GPP\Extracts\R2-2007393.doc) Introducing Extended DRX for RRC Inactive and/or Idle Samsung discussion FS\_NR\_redcap

[R2-2007401](file:///C:\Data\3GPP\Extracts\R2-2007401%20Extended%20DRX%20for%20reduced%20capability%20devices%20in%20RRC_IDLE%20and%20RRC_INACTIVE.docx) Extended DRX for reduced capability devices in RRC\_IDLE and RRC\_INACTIVE LG Electronics UK discussion Rel-17

[R2-2007470](file:///C:\Data\3GPP\Extracts\R2-2007470%20eDRX%20for%20UE%20with%20reduced%20capability.doc) eDRX for Idel/inactive-mode UE with reduced capability Lenovo, Motorola Mobility discussion Rel-17

[R2-2007561](file:///C:\Data\3GPP\Extracts\R2-2007561%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

[R2-2007653](file:///C:\Data\3GPP\Extracts\R2-2007653_eDRX%20for%20Reduced%20Capability%20NR%20Devices.docx) eDRX for Reduced Capability NR Devices Convida Wireless discussion Rel-17 FS\_NR\_redcap

[R2-2007654](file:///C:\Data\3GPP\Extracts\R2-2007654_eDRX%20Configuration%20for%20Reduced%20Capability%20NR%20Devices.docx) Discussion on eDRX Configuration Convida Wireless discussion Rel-17 FS\_NR\_redcap

RRM relaxation

For which Stationary UEs can RRM relaxation be considered? Only "truly fixed" UEs or slowly moving ones as well?

Should RRM relaxation on serving cell be considered?

How to identify the target UEs?

What kind of measurement relaxation criteria can be considered?

Vice-Chair initial proposals:

Proposal A: For RRM relaxation, "truly fixed" UEs are considered with highest priority (when discussing UE identification and relaxation criteria). Slowly moving UEs can be considered only if there is no significant performance impact.

* QC thinks we could have "truly fixed" or "temporarily stationary UEs" (e.g. smartwatches)

Proposal B: RRM relaxation for neighbor cells is considered with highest priority (when discussing relaxation criteria). RRM relaxation on serving cell can be considered only if there is no significant performance impact.

* Apple wants to consider serving sell as well

**Proposal C: For RRC\_IDLE/INACTIVE UEs, Rel-16 "low-mobility" evaluation mechanism can be considerred as a baseline. FFS on RRC\_Connected UEs.**

**Proposal D: For RRC\_IDLE/INACTIVE UEs, Rel-16 measurement relaxation criterias can be considerred as a baseline. FFS on RRC\_Connected UEs.**

[R2-2006913](file:///C:\Data\3GPP\Extracts\R2-2006913%20-%20Power%20consumption%20in%20RedCap%20devices.docx) Reducing power consumption in RedCap devices Ericsson discussion FS\_NR\_redcap

* Revised in [R2-2008130](file:///C:\Data\3GPP\Extracts\R2-2008130%20-%20Power%20consumption%20in%20RedCap%20devices_Revised.docx)

[R2-2008130](file:///C:\Data\3GPP\Extracts\R2-2008130%20-%20Power%20consumption%20in%20RedCap%20devices_Revised.docx) Reducing power consumption in RedCap devices Ericsson discussion FS\_NR\_redcap

Observations 3-8 and proposal 3

[R2-2007347](file:///C:\Data\3GPP\Extracts\R2-2007347%20RRM%20measurement%20relaxation%20for%20REDCAP%20UE.doc) RRM measurement relaxation for REDCAP UE Huawei, HiSilicon discussion Rel-17 FS\_NR\_redcap

[R2-2006902](file:///C:\Data\3GPP\Extracts\R2-2006902%20Consideration%20on%20RRM%20relaxation%20for%20Redcap%20UE.docx) Consideration on RRM relaxation for Redcap UE ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_redcap

[R2-2006788](file:///C:\Data\3GPP\Extracts\R2-2006788%20RRM%20relax.doc) Discussion on RRM relaxation OPPO discussion Rel-17 FS\_NR\_redcap

[R2-2006662](file:///C:\Data\3GPP\Extracts\R2-2006662.docx) RRM relaxation for stationary devices Samsung discussion Rel-17 FS\_NR\_redcap

[R2-2006693](file:///C:\Data\3GPP\Extracts\R2-2006693%20RRM%20Relaxation%20for%20Power%20Saving%20v1.0.docx) RRM relaxation for power saving vivo, Guangdong Genius discussion Rel-17 FS\_NR\_redcap

[R2-2007471](file:///C:\Data\3GPP\Extracts\R2-2007471%20RRM%20relaxation%20for%20stationary%20UE%20with%20reduced%20capability.docx) RRM relaxation for stationary UE with reduced capability Lenovo, Motorola Mobility discussion Rel-17

[R2-2007745](file:///C:\Data\3GPP\Extracts\R2-2007745%20Considerations%20on%20RRM%20for%20reduced%20capability%20UEs.doc) Considerations on RRM for reduced capability UEs LG Electronics France discussion Rel-17 FS\_NR\_redcap

* [POST111e][XXX][REDCAP] UE power saving features (CATT)

Scope: Discuss UE power saving features: eDRX in idle and inactive and RRM relaxation for stationary devices

Intended outcome: email discussion summary

Deadline: Until next meeting

## Summary

TBD