3GPP TSG-RAN WG2 Meeting #109 electronic R2-2001662

24 Feb – 6 Mar 2020

**Agenda item: 8.2**

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

**Title: Report from Break-out session on SRVCC, CLI, PRN, eMIMO, RACS**

**Document for: Approval**

General

Please refer to [R2-2002046](file:///C:\Data\3GPP\RAN2\Docs\R2-2002046.zip) for detailed guidance on e-meeting methods.

In particular, the question box might be used:

* primarily for copying and pasting the agreements that are being shown live via screen sharing, so delegates that are experiencing delays can also see the agreements
* possibly to allow delegates to enter specific comments/question (in case, only on the proposal being discussed)

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 [AT109e][000]

Organizational

1. Incoming LSs are noted by default. Contact companies should flag LSs that need presenting.
2. Running CRs submitted before the meeting are endorsed as baseline and moved to offline email discussion.
3. With a few exceptions, only email discussions reports and summary discussion papers will be treated during the e-meeting (indicated clearly in the meeting notes)
4. All organization emails and notes will be shared over the following email discussion throughout the two meeting weeks:

* [AT109e][100] Organizational Sergio's session (SRVCC, CLI, PRN, eMIMO, RACS)

Scope:

* + - Share plans for the meeting and list of ongoing email discussions for the sessions related to SRVCC, CLI, PRN, eMIMO, RACS
    - Share meetings notes and agreements for review and endorsement

Schedule/Plan

RACS:

This WI will only be handled via offline email discussions kicked off at the e-meeting start.

SRVCC:

This WI will only be handled via offline email discussions kicked off at the e-meeting start.

CLI:

This WI will only be handled via offline email discussions kicked off at the e-meeting start.

eMIMO:

This WI will be handled via offline email discussions kicked off at the e-meeting start (110, 112) or later during the e-meeting (111, 120, 121) and by web conference calls:

Wednesday February 26th, 13:30 - 15:30 CET

* Check the status of email discussion 110 and other RRC aspects
* Check the status of email discussion 112
* Start the discussion on [R2-2000660](file:///C:\Data\3GPP\Extracts\R2-2000660-%20%20Report%20of%20%5b108%2368%5d%5bNR%20eMIMO%5d%20Design%20of%20DL%20MAC%20CEs.docx), [R2-2001551](file:///C:\Data\3GPP\Extracts\R2-2001551%20-%20Summary%20of%20DL%20MAC%20CE%20design%20for%20agenda%206.16.3.doc) and [R2-2000227](file:///C:\Data\3GPP\Extracts\R2-2000227_Summary%20of%20Email%20discussion%20108%2370%20-%20BFR%20MAC%20CE.docx)

Tuesday March 3rd, 6:30 - 7:30 CET

* Discuss the outcome of offline email discussions 110 ([R2-2001684](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001684.zip)) 112 ([R2-2001685](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001685.zip)) and 121 ([R2-2001686](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001686.zip))

PRN:

This WI will be handled via offline email discussions kicked off at the e-meeting start (113) or later during the e-meeting (114, 115, 116, 117, 118, 119) and by web conference calls:

Tuesday February 25th, 13:30 - 15:30 CET

* Start the discussion on [R2-2002069](file:///C:\Data\3GPP\Extracts\R2-2002069%20%5bdraft%5d%20Reply%20LS%20on%20CAG%20definition.doc), [R2-2001676](file:///C:\Data\3GPP\RAN2\Docs\R2-2001676.zip), [R2-2001674](file:///C:\Data\3GPP\Extracts\R2-2001674%20SummaryPRN-ConnectedMode-v3.docx), [R2-2001675](file:///C:\Data\3GPP\Extracts\R2-2001675%20Summary%20of%20%5bPRN%5d%20Other%20(HRNN,%20Access%20Control,%20etc)%20v1.docx)

Wednesday March 4rd, 5:30 - 6:30 CET

* Discuss the outcome of offline email discussions 117 (R2-2001697), 118 (R2-2001698), 119 (R2-2001697), 114 and check the status of CR drafting

List and status of offline email discussions

NOTE: No offline email discussions will be kicked off before Monday February 24th, 9:00 CET

* [AT109e][101][RACS] Stage 2 CRs (Mediatek)

Intended outcome: Agreed 36.300 and 38.330 CRs, also taking into account proposals in [R2-2000939](file:///C:\Data\3GPP\Extracts\R2-2000939%20-%20Generic%20stage-2%20description%20for%20RRC%20segmentation.docx)

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

Status: Closed

* [AT109e][102][RACS] Stage 3 CRs (ZTE)

Intended outcome: Agreed 36.331 and 38.331 CRs

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

Status: Closed

* [AT109e][103][RACS] Optional signalling of UE capabilities at handover (Ericsson)

Intended outcome: Decision on proposals in [R2-2001227](file:///C:\Data\3GPP\Extracts\R2-2001227.docx) and possible drafting of a LS to SA2

Deadline for companies' feedback: Monday 2020-03-02 12:00 CET

Deadline for rapporteur's version for agreement: Tuesday 2020-03-03 12:00 CET

Status: Closed

* [AT109e][104][SRVCC] Stage 2 CRs (Ericsson)

Intended outcome: Agreed 37.340 and 38.300 CRs

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

Status: Closed

* [AT109e][105][SRVCC] RRC CR (Huawei)

Intended outcome: Agreed 38.331 CR

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

Status: Closed

* [AT109e][106][SRVCC] 38.306 CR (China Unicom)

Intended outcome: Agreed 38.306 CR

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

Status: Closed

* [AT109e][107][CLI] Stage 2 CRs (Huawei)

Intended outcome: Agreed 37.340 and 38.300 CRs

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

Status: Closed

* [AT109e][108][CLI] RRC CR (LG)

Intended outcome: Agreed 38.331 CR

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

Status: Closed

* [AT109e][109][CLI] 38.306 CR (Qualcomm)

Intended outcome: Agreed 38.306 CR

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

Status: Closed

* [AT109e][110][EMIMO] RRC CR (Ericsson)

Initial scope: Continue the discussion on RRC aspects, based on [R2-2001671](file:///C:\Data\3GPP\Extracts\R2-2001671%20-%20Summary%20of%20%5bNR%20eMIMO%5d%20RRC%20aspects_v3.docx)

Initial intended outcome:

* + - Set of proposals with full consensus (aim to agree to those over email)
    - Set of proposals that need further (online) discussion

Initial intermediate deadline (for companies' feedback): Tuesday 2020-02-25 20:00 CET

Initial intermediate deadline (for rapporteur's summary): Wednesday 2020-02-26 01:30 CET

Second phase scope: Continue the discussion on RRC aspects which are still open after the discussion on [R2-2001677](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001677.zip)

Second phase intended outcome: summary of the offline discussion in R2-2001684:

* + - Set of proposals with full consensus (aim to agree to those over email) and corresponding updated CR
    - Set of proposals that need further (online) discussion

Second intermediate deadline (for companies' feedback): Friday 2020-02-28 12:00 CET

Second intermediate deadline (for rapporteur's summary and updated CR): Monday 2020-03-02 12:00 CET

Final scope: Discuss the updated CR

Final intended outcome: Agreed 38.331 CR

Final deadline for companies' feedback: Wednesday 2020-03-04 12:00 CET

Final deadline for rapporteur's version for agreement: Thursday 2020-03-05 12:00 CET

Status: Ongoing

* [AT109e][111][EMIMO] MAC CR (Samsung)

Scope: Update the CR based on the outcome of the discussion on [R2-2000660](file:///C:\Data\3GPP\RAN2\Docs\R2-2000660.zip) (DL MAC CE design), [R2-2001678](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001678.zip), R2-2001685 and R2-2001686.

Intended outcome: Agreed 38.321 CR

Intermediate deadline (for companies' feedback on the endorsed baseline CR): Friday 2020-02-28 12:00 CET

Intermediate deadline (for rapporteur's updated CR): Monday 2020-03-02 12:00 CET

Final deadline for companies' feedback: Wednesday 2020-03-04 12:00 CET

Final deadline for rapporteur's version for agreement: Thursday 2020-03-05 12:00 CET

Status: Ongoing

* [AT109e][112][EMIMO] Beam management enhancements (Samsung)

Initial scope: Continue the discussion on beam management enhancements, based on [R2-2001672](file:///C:\Data\3GPP\Extracts\R2-2001672_Summary%20of%20Beam%20Management%20Enhancements.docx)

Initial intended outcome:

* + - Set of proposals with full consensus (aim to agree to those over email)
    - Set of proposals that need further (online) discussion

Initial intermediate deadline (for companies' feedback): Tuesday 2020-02-25 20:00 CET

Initial intermediate deadline (for rapporteur's summary): Wednesday 2020-02-26 01:30 CET

Revised scope: Continue the discussion on beam management aspects which are still open after the discussion on [R2-2001678](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001678.zip) as well as BFR MAC CE aspects listed in [R2-2000227](file:///C:\Data\3GPP\RAN2\Docs\R2-2000227.zip)

Final intended outcome: summary of the offline discussion in [R2-2001685](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001685.zip) with e.g.:

* + - Set of proposals with full consensus (aim to agree to those over email) to be reflected in an updated MAC CR
    - Set of proposals with almost full consensus and easy to agree
    - Set of open issues and proposals to postpone to next meeting
    - Open issues that should no longer be pursued

Final deadline (for companies' feedback): Friday 2020-02-28 12:00 CET

Final deadline (for rapporteur's summary): Monday 2020-03-02 12:00 CET

Proposed agreements in [R2-2001685](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001685.zip) indicated for email agreement and not challenged until Monday 2020-03-02 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

Status: Closed

* [AT109e][120][EMIMO] LS to RAN1 (Ericsson)

Scope: Discuss which questions to ask RAN1 regarding RRC parameters

Intended outcome: Agreed LS to RAN1 in R2-2001683

Deadline: Wednesday 2020-03-04 12:00 CET

Status: Ongoing

* [AT109e][121][EMIMO] DL MAC CE design (Oppo)

Scope: Continue the discussion on DL MAC CE design aspects which are still open after the discussion on [R2-2000660](file:///C:\Data\3GPP\RAN2\Docs\R2-2000660.zip) as well as those listed in [R2-2001551](file:///C:\Data\3GPP\Extracts\R2-2001551%20-%20Summary%20of%20DL%20MAC%20CE%20design%20for%20agenda%206.16.3.doc)

Intended outcome: summary of the offline discussion in [R2-2001686](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001686.zip) with e.g.:

* + - Set of proposals with full consensus (aim to agree to those over email) to be reflected in the updated MAC CR
    - Set of proposals with almost full consensus and easy to agree
    - Set of open issues and proposals to postpone to next meeting

Final deadline (for companies' feedback): Friday 2020-02-28 12:00 CET

Final deadline (for rapporteur's summary): Monday 2020-03-02 12:00 CET

Proposed agreements in [R2-2001686](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001686.zip) indicated for email agreement and not challenged until Monday 2020-03-02 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

Status: Closed

* [AT109e][113][PRN] Stage 2 CR (Nokia)

Intended outcome: Agreed 38.300 CR, taking into account proposals in [R2-2000570](file:///C:\Data\3GPP\Extracts\R2-2000570%20NPN%20Emergency%20Calls%20in%20CAG%20Cells.docx) and possible new agreements during the meeting.

Deadline for feedback on baseline CR and [R2-2000570](file:///C:\Data\3GPP\Extracts\R2-2000570%20NPN%20Emergency%20Calls%20in%20CAG%20Cells.docx): Thursday 2020-02-27 12:00 CET

Deadline for feedback on further updates: Wednesday 2020-03-04 16:00 CET

Deadline for rapporteur's version for agreement: Thursday 2020-03-05 12:00 CET

Status: Ongoing

* [AT109e][114][PRN] RRC CR (Nokia)

Scope: Update the RRC CR, based on the progress on the remaining open issues

Intended outcome: Agreed 38.331 CR

Deadline: Thursday 2020-03-05 12:00 CET

Status: Ongoing

* [AT109e][115][PRN] 38.304 CR (Qualcomm)

Scope: Update the 38.304 CR, based on the progress on the remaining open issues

Intended outcome: Agreed 38.304 CR

Deadline: Thursday 2020-03-05 12:00 CET

Status: Ongoing

* [AT109e][116][PRN] Reply LS to SA5 (Huawei)

Scope: Discuss the wording of the reply LS to SA5. Also check whether there is a common understanding on which combinations are allowed and whether further guidance from other groups is needed

Intended outcome:

1. Agreed LS to SA5.

2. Decision on the need (and in case on the content) of an LS to other groups to clarify which combinations are possible

Deadline: Tuesday 2020-03-03 12:00 CET

Status: Closed

* [AT109e][117][PRN] Cell Selection and selection aspects (Qualcomm)

Scope: Continue the discussion on cell selection and reselection aspects, trying to conclude on proposals from [R2-2001676](file:///C:\Data\3GPP\RAN2\Docs\R2-2001676.zip) not concluded online.

Initial intended outcome:

* + - Initial set of proposals with full consensus (agreeable over email) in [R2-2001680](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001680.zip)

Initial intermediate deadline (for companies' feedback): Thursday 2020-02-27 23:59 CET

Initial intermediate deadline (for rapporteur's list of proposals): Friday 2020-02-28 12:00 CET

Proposed agreements in [R2-2001680](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001680.zip) not challenged until Monday 2020-03-02 12:00 CET will be declared as agreed by the session chair.

Final intended outcome: summary of the offline discussion in [R2-2001697](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001697.zip) with e.g.:

* + - (Further) set of proposals with full consensus, if any (agreeable over email)
    - Set of proposals with almost full consensus to discuss in the follow up conference call
    - Set of open issues and proposals to postpone to next meeting
    - Open issues that should no longer be pursued

Final deadline (for companies' feedback): Monday 2020-03-02 23:59 CET

Final deadline (for rapporteur's summary): Tuesday 2020-03-03 12:00 CET

Proposed agreements in [R2-2001697](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001697.zip) not challenged until Tuesday 2020-03-03 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

Status: Closed

* [AT109e][118][PRN] Connected mode aspects (Nokia)

Scope: Continue the discussion on connected mode aspects, trying to conclude on proposals from [R2-2001674](file:///C:\Data\3GPP\Extracts\R2-2001674%20SummaryPRN-ConnectedMode-v3.docx) not concluded online.

Initial intended outcome:

* + - Initial set of proposals with full consensus (agreeable over email) in [R2-2001681](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001681.zip)

Initial intermediate deadline (for companies' feedback): Thursday 2020-02-27 23:59 CET

Initial intermediate deadline (for rapporteur's list of proposals): Friday 2020-02-28 12:00 CET

Proposed agreements in [R2-2001681](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001681.zip) not challenged until Monday 2020-03-02 12:00 CET will be declared as agreed by the session chair.

Final intended outcome: summary of the offline discussion in R2-2001698 with e.g.:

* + - (Further) set of proposals with full consensus, if any (agreeable over email)
    - Set of proposals with almost full consensus to discuss in the follow up conference call
    - Set of open issues and proposals to postpone to next meeting
    - Open issues that should no longer be pursued

Final deadline (for companies' feedback): Monday 2020-03-02 23:59 CET

Final deadline (for rapporteur's summary): Tuesday 2020-03-03 12:00 CET

Proposed agreements in R2-2001698 not challenged until Tuesday 2020-03-03 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

Status: Closed

* [AT109e][119][PRN] HRNN and Access Control aspects (ZTE)

Scope: Discuss the proposals from [R2-2001675](file:///C:\Data\3GPP\Extracts\R2-2001675%20Summary%20of%20%5bPRN%5d%20Other%20(HRNN,%20Access%20Control,%20etc)%20v1.docx).

Initial intended outcome:

* + - Initial set of proposals with full consensus (agreeable over email) in [R2-2001682](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001682.zip)

Initial intermediate deadline (for companies' feedback): Thursday 2020-02-27 23:59 CET

Initial intermediate deadline (for rapporteur's list of proposals): Friday 2020-02-28 12:00 CET

Proposed agreements in [R2-2001682](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001682.zip) not challenged until Monday 2020-03-02 12:00 CET will be declared as agreed by the session chair.

Final intended outcome: summary of the offline discussion in [R2-2001699](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001699.zip) with e.g.:

* + - (Further) set of proposals with full consensus, if any (agreeable over email)
    - Set of proposals with almost full consensus to discuss in the follow up conference call
    - Set of open issues and proposals to postpone to next meeting
    - Open issues that should no longer be pursued

Final deadline (for companies' feedback): Monday 2020-03-02 23:59 CET

Final deadline (for rapporteur's summary): Tuesday 2020-03-03 12:00 CET

Proposed agreements in [R2-2001699](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001699.zip) not challenged until Tuesday 2020-03-03 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

Status: Closed

* [AT109e][122][PRN] LS to SA1/SA2/CT1 (Nokia)

Scope: Agree questions for clarifications to SA2/CT1 on manual CAG selection and to SA1/SA2/CT1 on UAC parameters for CAG

Intended outcome: LS to SA1/SA2/CT1

Deadline: Thursday 2020-02-05

Status: Started

## 6.5 Optimisations on UE radio capability signalling

(RACS-RAN-Core; leading WG: RAN2; REL-16; started: Mar 19; target; Mar 20; WID: [RP-191088](http://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_84\Docs\RP-191088.zip)). Documents in this agenda item will be handled in a break out session

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

Apart from running CRs, it's possible to contribute to sub agenda items 6.5.2 and 6.5.3, if any new issues are identified. This Work Item will only be handled via offline email discussions kicked off at the e-meeting start.

### 6.5.1 Organisational

Including incoming LSs, rapporteur inputs, running CRs, etc

[R2-2000424](file:///C:\Data\3GPP\Extracts\R2-2000424.docx) Work plan for RACS-RAN work item MediaTek Inc., CATT discussion Rel-16 RACS-RAN-Core

* Noted

[R2-2000421](file:///C:\Data\3GPP\Extracts\R2-2000421.docx) Introduction of RACS [36.300] MediaTek Inc. CR Rel-16 36.300 16.0.0 1258 - B RACS-RAN-Core

* Endorsed as baseline CR. Moved to offline email discussion for agreement

[R2-2000422](file:///C:\Data\3GPP\Extracts\R2-2000422.docx) Introduction of RACS [38.300] MediaTek Inc. CR Rel-16 38.300 16.0.0 0187 - B RACS-RAN-Core

* Endorsed as baseline CR. Moved to offline email discussion for agreement
* [AT109e][101][RACS] Stage 2 CRs (Mediatek)

Intended outcome: Agreed 36.300 and 38.300 CRs, also taking into account proposals in [R2-2000939](file:///C:\Data\3GPP\Extracts\R2-2000939%20-%20Generic%20stage-2%20description%20for%20RRC%20segmentation.docx)

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

* CRs revised to cover also DL RRC segmentation (TEI16 item)

[R2-2001687](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001687.zip) Introduction of RACS and DL RRC segmentation MediaTek Inc., Ericsson, CATT   CR Rel-16 36.300 16.0.0 1258 1 B RACS-RAN-Core, TEI16

* Agreed

[R2-2001688](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001688.zip) Introduction of RACS and DL RRC segmentation MediaTek Inc., Ericsson, CATT   CR Rel-16 38.300 16.0.0 0187 1 B RACS-RAN-Core, TEI16

* Agreed

[R2-2000354](file:///C:\Data\3GPP\Extracts\R2-2000354_38.331_CR1441_(REL_16)_Introduction%20of%20UECapabilityInformation%20segmentation%20in%20TS38.331%20-%20v02.docx) Introduction of UECapabilityInformation segmentation in TS38.331 ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd, MediaTek Inc, CATT, Ericsson, Intel Corporation, Spreadtrum Communications CR Rel-16 38.331 15.8.0 1441 - B RACS-RAN-Core

* Remove reference to "Athens, Greece" in the CR header
* Endorsed as baseline CR with the change above. Moved to offline email discussion for agreement

[R2-2000423](file:///C:\Data\3GPP\Extracts\R2-2000423.docx) Introduction of UECapabilityInformation segmentation in 36.331 MediaTek Inc., CATT, Ericsson, Spreadtrum Communications, ZTE Corporation, Sanechips, OPPO, Qualcomm Incorporated CR Rel-16 36.331 15.8.0 4189 - B RACS-RAN-Core

* Endorsed as baseline CR. Moved to offline email discussion for agreement
* [AT109e][102][RACS] Stage 3 CRs (ZTE)

Intended outcome: Agreed 36.331 and 38.331 CRs

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

[R2-2001689](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001689.zip) Introduction of UECapabilityInformation segmentation in TS38.331 ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd, MediaTek Inc, CATT, Ericsson, Intel Corporation, Spreadtrum Communications CR Rel-16 38.331 15.8.0 1441 1 B RACS-RAN-Core

* Agreed

[R2-2001690](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001690.zip) Introduction of UECapabilityInformation segmentation in 36.331 MediaTek Inc., CATT, Ericsson, Spreadtrum Communications, ZTE Corporation, Sanechips, OPPO, Qualcomm Incorporated CR Rel-16 36.331 15.8.0 4189 1 B RACS-RAN-Core

* Agreed

### 6.5.2 UE radio capability signalling using UE capability identity

Other aspects, if any, can also be covered here

[R2-2001227](file:///C:\Data\3GPP\Extracts\R2-2001227.docx) Inter-node signaling of UE Capabilities Ericsson discussion

* Offline email discussion 103 (Ericsson): discuss proposals 1&2
* During the Offline email discussion it was agreed to draft an LS to SA2
* [AT109e][103][RACS] Optional signalling of UE capabilities at handover (Ericsson)

Intended outcome: Decision on proposals in [R2-2001227](file:///C:\Data\3GPP\Extracts\R2-2001227.docx) and possible drafting of LS to SA2.

Deadline for companies' feedback: Monday 2020-03-02 12:00 CET

Deadline for rapporteur's version for agreement: Tuesday 2020-03-03 12:00 CET

[R2-2001691](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001691.zip) Draft LS on Optional signalling of UE capabilities at handover Ericsson LS out Rel-16 RACS-RAN -Core To:SA2 Cc:RAN3

* Revised in [R2-2001702](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001702.zip) (to remove 'Draft' and put 'RAN2' as source)

[R2-2001702](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001702.zip) LS on Optional signalling of UE capabilities at handover Ericsson LS out Rel-16 RACS-RAN -Core To:SA2 Cc:RAN3

* Agreed

The following two papers will be noted but not treated (feedback from RAN3 is needed first)

[R2-2000355](file:///C:\Data\3GPP\Extracts\R2-2000355_UE%20radio%20capability%20ID%20in%20inter-node%20RRC%20messages.docx) UE radio capability ID in inter-node RRC messages ZTE Corporation, Sanechips discussion Rel-16 RACS-RAN-Core

* Noted

[R2-2000356](file:///C:\Data\3GPP\Extracts\R2-2000356_38.331_CR1485__(REL_16)_Introduction%20of%20UE%20radio%20capability%20ID%20in%20inter-node%20RRC%20messages%20-%20v02.docx) Introduction of UE radio capability ID in inter-node RRC messages ZTE Corporation, Sanechips CR Rel-16 38.331 15.8.0 1485 - B RACS-RAN-Core

* Noted

### 6.5.3 Segmentation of UE radio capabilities

[R2-2000939](file:///C:\Data\3GPP\Extracts\R2-2000939%20-%20Generic%20stage-2%20description%20for%20RRC%20segmentation.docx) Generic stage-2 description for RRC segmentation Ericsson discussion Rel-16 RACS-RAN-Core

* Proposals in this paper to be considered as part of the offline email discussion 101

The following two papers will be noted but not treated

[R2-2000765](file:///C:\Data\3GPP\Extracts\R2-2000765%20Transfer%20of%20segmented%20UECapabilityInformation%20by%20SRB2.doc) Transfer of segmented UECapabilityInformation by SRB2 Samsung discussion Rel-16 RACS-RAN-Core [R2-1915246](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1915246.zip)

* Noted

[R2-2001329](file:///C:\Data\3GPP\Extracts\R2-2001329%20Remaining%20issues%20on%20UE%20capability%20segmentation.doc) Remaining issues on UE capability segmentation Huawei, HiSilicon discussion Rel-16 RACS-RAN-Core

* Noted

## 6.14 Single Radio Voice Call Continuity from 5G to 3G

(SRVCC\_NR\_to\_UMTS-Core; leading WG: RAN2; REL-16; started: Dec 18; target; Mar 20; WID: [RP-190713](http://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_83\Docs\RP-190713.zip)). Documents in this agenda item will be handled in a break out session

Time budget: 0.5 TU

Tdoc Limitation: 1 tdoc

Only running CRs are expected to be submitted for this Work Item. For important unexpected issues it's still possible to contribute to sub agenda item 6.14.2. This Work Item will only be handled via offline email discussions, kicked off at the e-meeting start.

### 6.14.1 Organisational

Including incoming LSs, running CRs, rapporteur inputs, etc

[R2-2000325](file:///C:\Data\3GPP\Extracts\R2-2000325%20-%20CR%20on%2037.340%20for%20SRVCC%20from%205G%20to%203G.docx) Introduction of SRVCC from 5G to 3G Ericsson, ZTE CR Rel-16 37.340 16.0.0 0165 2 B SRVCC\_NR\_to\_UMTS-Core [R2-1916335](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1916335.zip)

* Endorsed as baseline CR. Moved to offline email discussion for agreement

[R2-2000335](file:///C:\Data\3GPP\Extracts\R2-2000335%20-%20CR%20on%2038.300%20for%20SRVCC%20from%205G%20to%203G.doc) Introduction of SRVCC from 5G to 3G Ericsson CR Rel-16 38.300 16.0.0 0186 - B SRVCC\_NR\_to\_UMTS-Core

* Endorsed as baseline CR. Moved to offline email discussion for agreement
* [AT109e][104][SRVCC] Stage 2 CRs (Ericsson)

Intended outcome: Agreed 37.340 and 38.300 CRs

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

[R2-2001692](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001692.zip) Introduction of SRVCC from 5G to 3G Ericsson, China Unicom CR Rel-16 38.300 16.0.0 0186 1 B SRVCC\_NR\_to\_UMTS-Core

* Agreed

[R2-2001701](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001701.zip) Introduction of SRVCC from 5G to 3G Ericsson, ZTE Corporation, China Unicom CR Rel-16 37.340 16.0.0 0165 3 B SRVCC\_NR\_to\_UMTS-Core

* Agreed

[R2-2000542](file:///C:\Data\3GPP\Extracts\R2-2000542%20Introduction%20of%20SRVCC%20from%205G%20to%203G.docx) Introduction of SRVCC from 5G to 3G Huawei, HiSilicon, China Unicom CR Rel-16 38.331 15.8.0 1446 - B SRVCC\_NR\_to\_UMTS-Core

* Endorsed as baseline CR. Moved to offline email discussion for agreement
* [AT109e][105][SRVCC] RRC CR (Huawei)

Intended outcome: Agreed 38.331 CR

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

[R2-2001693](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001693.zip) Introduction of SRVCC from 5G to 3G Huawei, HiSilicon, China Unicom CR Rel-16 38.331 15.8.0 1446 1 B SRVCC\_NR\_to\_UMTS-Core

* Agreed

[R2-2000651](file:///C:\Data\3GPP\Extracts\R2-2000651.doc) Introduction of SRVCC from 5G to 3G China Unicom, Huawei, HiSilicon CR Rel-16 38.306 15.8.0 0235 - B SRVCC\_NR\_to\_UMTS-Core

* Endorsed as baseline CR. Moved to offline email discussion for agreement
* No comments received during the offline email discussion
* Agreed (unless there will be a later general decision at the end of the meeting to only endorse 38.306 CRs for now)
* [AT109e][106][SRVCC] 38.306 CR (China Unicom)

Intended outcome: Agreed 38.306 CR

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

The following documents are withdrawn

[R2-2000152](file:///C:\Data\3GPP\Extracts\R2-2000152.doc) Running CR for the introduction of SRVCC from 5G to 3G China Unicom CR Rel-16 38.306 15.8.0 0222 - B SRVCC\_NR\_to\_UMTS-Core Withdrawn

[R2-2000174](file:///C:\Data\3GPP\Extracts\R2-2000174.doc) Running CR for the introduction of SRVCC from 5G to 3G China Unicom CR Rel-16 38.306 15.8.0 0225 - B SRVCC\_NR\_to\_UMTS-Core Withdrawn

R2-2000326 Running CR for introduction of SRVCC from 5G to 3G Ericsson draftCR Rel-15 38.300 15.8.0 B SRVCC\_NR\_to\_UMTS-Core [R2-1914646](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1914646.zip) Withdrawn

### 6.14.2 Other

## 6.15 Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR

(NR\_CLI\_RIM; leading WG: RAN1; REL-16; started: Dec 18; target; Dec 19; WID: [RP-191997](http://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_85\Docs\RP-191997.zip)) Documents in this agenda item will be handled in a break out session.

Time budget: 0 TU

Tdoc Limitation: 1 tdoc

Apart from running CRs, it's possible to contribute to sub agenda item 6.15.2 for the remaining open issues. This Work Item will only be handled via offline email discussions kicked off at the e-meeting start.

### 6.15.1 Organisational

Including incoming LSs, running CRs, rapporteur inputs, etc

[R2-2001411](file:///C:\Data\3GPP\Extracts\R2-2001411.docx) Introduction of cross link interference management Huawei, HiSilicon CR Rel-16 38.300 16.0.0 0201 - B NR\_CLI\_RIM

* Endorsed as baseline CR. Moved to offline email discussion for agreement

[R2-2001412](file:///C:\Data\3GPP\Extracts\R2-2001412.docx) Introduction of cross link interference management Huawei, HiSilicon, ZTE Corporation (Rapporteur) CR Rel-16 37.340 16.0.0 0182 - B NR\_CLI\_RIM

* Endorsed as baseline CR. Moved to offline email discussion for agreement
* [AT109e][107][CLI] Stage 2 CRs (Huawei)

Intended outcome: Agreed 37.340 and 38.300 CRs

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

[R2-2001694](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001694.zip) Introduction of cross link interference management Huawei, HiSilicon CR Rel-16 38.300 16.0.0 0201 1 B NR\_CLI\_RIM

* revised due to some editorial corrections

[R2-2001700](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001700.zip) Introduction of cross link interference management Huawei, HiSilicon CR Rel-16 38.300 16.0.0 0201 2 B NR\_CLI\_RIM

* Agreed

[R2-2001695](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001695.zip) Introduction of cross link interference management Huawei, HiSilicon, ZTE Corporation (Rapporteur) CR Rel-16 37.340 16.0.0 0182 1 B NR\_CLI\_RIM

* Agreed

[R2-2001542](file:///C:\Data\3GPP\Extracts\R2-2001542%20Introduction%20of%20CLI%20handling%20and%20RIM%20in%20TS38.331.docx) Introduction of CLI handling and RIM in TS38.331 LG Electronics Inc. CR Rel-16 38.331 15.8.0 1494 - B NR\_CLI\_RIM

* Endorsed as baseline CR. Moved to offline email discussion for agreement
* [AT109e][108][CLI] RRC CR (LG)

Intended outcome: Agreed 38.331 CR

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

[R2-2001696](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001696.zip) Introduction of CLI handling and RIM in TS38.331 LG Electronics Inc. CR Rel-16 38.331 15.8.0 1494 1 B NR\_CLI\_RIM

* Agreed

[R2-2000441](file:///C:\Data\3GPP\Extracts\R2-2000441-CLI-38.306_CR0230r0.docx) Introduction of Cross Link Interference (CLI) handling and Remote Interference Management (RIM) Qualcomm Incorporated CR Rel-16 38.306 15.8.0 0230 - B NR\_CLI\_RIM-Core [R2-1915716](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1915716.zip)

* Endorsed as baseline CR. Moved to offline email discussion for agreement
* During the email discussion it was commented that RAN4 already specified a different UE behaviour than previously agreed by RAN2 for UEs indicating the FDMed reception (of DL signal/channel and SRS RSRP / CLI RSSI resources) is not supported
* (For now) we assume the RAN4 understanding that in case FDMed reception is not supported the UE shall not be expected to receive PDCCH/PDSCH (no change needed to the 38.306 CR)
* No other comments were received during the offline email discussion
* Agreed (unless there will be a later general decision at the end of this meeting to only endorse 38.306 CRs for now)
* [AT109e][109][CLI] 38.306 CR (Qualcomm)

Intended outcome: Agreed 38.306 CR

Deadline for companies' feedback: Thursday 2020-02-27 12:00 CET

Deadline for rapporteur's version for agreement: Friday 2020-02-28 12:00 CET

### 6.15.2 Other

The following two papers will be noted but not treated (for most proposals, feedback from RAN1/RAN3 to our previous LSs is needed first)

[R2-2000555](file:///C:\Data\3GPP\Extracts\R2-2000555-UE-CLI-Remaining-Issues-V1.docx) Remaining Issues of UE-CLI Reporting Nokia, Nokia Shanghai Bell discussion Rel-16

* Noted

[R2-2000556](file:///C:\Data\3GPP\Extracts\R2-2000556-UE-CLI-For-NSA-V1.docx) UE-CLI Measurements for EN-DC Nokia, Nokia Shanghai Bell discussion Rel-16

* Noted

[R2-2000557](file:///C:\Data\3GPP\Extracts\R2-2000557%20Draft%20LS_to_RAN3_on_EN-DC-UE-CLI.docx) Draft LS to RAN3 on UE-CLI measurements for EN-DC Nokia, Nokia Shanghai Bell discussion Rel-16

* Noted

[R2-2001621](file:///C:\Data\3GPP\Extracts\R2-2001621%20-%20Remaining%20last%20issues%20on%20CLI.docx) Remaining last issues on CLI Ericsson discussion Rel-16 NR\_CLI\_RIM

* Noted

## 6.16 Enhancements on MIMO for NR

(NR\_eMIMO-Core; leading WG: RAN1; REL-16; started: Jun 18; target; Mar 20; WID: [RP-192271](http://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_85\Docs\RP-192271.zip)). Documents in this agenda item will be handled in a break out session.

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

It's possible to contribute to all sub agenda items, to address the remaining open issues. Summary documents may then be utilized to summarize documents submitted to a given sub-AI and to make tentative proposals. For this Work Item, the discussion (on summary/company tdocs) will start via offline email discussions and will then continue during a web conference and further followup offline email discussions.

### 6.16.1 Organisational

Including incoming LSs , rapporteur inputs, running stage 2 CRs , etc

[R2-2000095](file:///C:\Data\3GPP\Extracts\R2-2000095_R1-1913423.docx) LS on explicit higher layer signalling on PUCCH resource grouping for simultaneous spatial relation updates (R1-1913423; contact: LGE) RAN1 LS in Rel-16 NR\_eMIMO-Core To:RAN2

* Noted

[R2-2000096](file:///C:\Data\3GPP\Extracts\R2-2000096_R1-1913463.doc) Reply LS on multi PDCCH-based and single PDCCH-based multi-TRP operation (R1-1913463; contact: Huawei) RAN1 LS in Rel-16 NR\_eMIMO-Core To:RAN2

* Noted

### 6.16.2 RRC aspects

Including output of email discussion [108#36][NR eMIMO] Running RRC CR (Ericsson).

A summary document will also be utilized to treat this agenda item (Ericsson).

[R2-2001104](file:///C:\Data\3GPP\Extracts\R2-2001104_RRCwayforward_final.docx) Proposals for [108#36][NR eMIMO] Running RRC CR (Ericsson) Ericsson Limited discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2001109](file:///C:\Data\3GPP\Extracts\R2-2001109-Running%2038.331%20NReMIMO.docx) Running RRC CR for Introduction of NR eMIMO Ericsson draftCR Rel-16 38.331 15.8.0 B NR\_eMIMO-Core [R2-1916343](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1916343.zip)

* Revised in [R2-2002071](file:///C:\Data\3GPP\Extracts\R2-2002071-Introduction%20of%20MIMO%20enhancements.docx)

[R2-2002071](file:///C:\Data\3GPP\Extracts\R2-2002071-Introduction%20of%20MIMO%20enhancements.docx) Introduction of MIMO enhancements Ericsson CR Rel-16 38.331 15.8.0 1500 B NR\_eMIMO-Core

* Endorsed as baseline CR. Moved to offline email discussion

[R2-2001671](file:///C:\Data\3GPP\Extracts\R2-2001671%20-%20Summary%20of%20%5bNR%20eMIMO%5d%20RRC%20aspects_v3.docx) Summary of [NR eMIMO] RRC aspects Ericsson discussion Rel-16 NR\_eMIMO-Core

* Initially moved to offline email discussion with the intention to go back online during the web conference call(s)
* [AT109e][110][EMIMO] RRC CR (Ericsson)

Initial scope: Continue the discussion on RRC aspects, based on [R2-2001671](file:///C:\Data\3GPP\Extracts\R2-2001671%20-%20Summary%20of%20%5bNR%20eMIMO%5d%20RRC%20aspects_v3.docx)

Initial intended outcome:

* + - Set of proposals with full consensus (aim to agree to those over email)
    - Set of proposals that need further (online) discussion

Initial intermediate deadline (for companies' feedback): Tuesday 2020-02-25 20:00 CET

Initial intermediate deadline (for rapporteur's summary): Wednesday 2020-02-26 01:30 CET

Second phase scope: Continue the discussion on RRC aspects which are still open after the discussion on [R2-2001677](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001677.zip)

Second phase intended outcome: summary of the offline discussion in R2-2001684:

* + - Set of proposals with full consensus (aim to agree to those over email) and corresponding updated CR
    - Set of proposals that need further (online) discussion

Second intermediate deadline (for companies' feedback): Friday 2020-02-28 12:00 CET

Second intermediate deadline (for rapporteur's summary and updated CR): Monday 2020-03-02 12:00 CET

Final scope: Discuss the updated CR

Final intended outcome: Agreed 38.331 CR

Final deadline for companies' feedback: Wednesday 2020-03-04 12:00 CET

Final deadline for rapporteur's version for agreement: Thursday 2020-03-05 12:00 CET

* [AT109e][120][EMIMO] LS to RAN1 (Ericsson)

Scope: Discuss which questions to ask RAN1 regarding RRC parameters

Intended outcome: Agreed LS to RAN1 in R2-2001683

Deadline: Wednesday 2020-03-03 12:00 CET

R2-2001683 Draft LS on eMIMO RRC parameters Ericsson LS out Rel-16 NR\_eMIMO-Core To:RAN1

[R2-2001677](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001677.zip) Offline discussion 110: eMIMO RRC CR discussion Ericsson discussion Rel-16 NR\_eMIMO-Core

Proposed agreements that seem to have consensus for email approval/with short online view:

Proposal 2 Given the above analysis we propose to keep the three modes for ULFPTX

Note: further proposal to inform RAN1 with LS

* QC thinks we should inform RAN1 of this

Proposal 3 Agree the BDFactor to be placed under PhysicalCellGroupConfig with ENUMERATED {n1}.

* Nokia don't think this is correct because they think this should be per cell, not per cell group. Ericson has a different understanding. Apple think that this is per cell in the RAN1 list.

Proposal 7 Agree the current RRC running CR implementation i.e. have only rsrp-ThresholdSSBBFR which is used for beam selection for MAC CE and rename rsrp-ThresholdSSBBFR to rsrp-ThresholdBFR. (MAC CR needs to be aligned)

Proposal 8 Agree the current RRC running CR implementation for max number of detection resource limitation as show above.

Note: There were comments on fine tuning the restriction. This could be done over email with after above agreement.

Agreements:

1. Given the above analysis we propose to keep the three modes for ULFPTX. Inform RAN1 of this decision and ask if this is fine for them
2. BDFactor is signalled per cell. Ask RAN1 for confirmation
3. Agree the current RRC running CR implementation i.e. have only rsrp-ThresholdSSBBFR which is used for beam selection for MAC CE and rename rsrp-ThresholdSSBBFR to rsrp-ThresholdBFR. (MAC CR needs to be aligned)
4. The current RRC running CR implementation for max number of detection resource limitation as show above.

Proposals that would benefit from online discussion:

Proposal 1 Agree to implement two LTE CRS pattern lists corresponding to each CORESETPoolIndex as indicated in above changes and merge the changes to the running RRC CR for NR eMIMO

Discussion: up to 6 CRS patterns in two lists or one list. If two list how to extend in future, if one list how to implement overlapping/non-overlapping restrictions.

* Ericsson suggests to start assuming two lists and change later if we really find a problem.
* Nokia thinks that for the overlapping/non-overlapping issue we can refer to RAN1 spec
* Vivo think one list is better to align to RAN1 intention although both can work
* QC think that the description of the overlapping/non-overlapping issue should be covered in the field description

Proposal 4 Agree the existing RepetitionSchemeConfig IE in the running CR as baseline for repetition scheme configuration.

Discussion: How to interpret RAN1 intention on if fdm-tdm and slotBased are mutually exclusive always or not. Further, how to implement configuration restrictions that is, in code or in field descriptions.

* Huawei, Samsung, QC think that fdm-tdm and slotBased are mutually exclusive
* Ericsson suggests to still use a SEQUENCE and ask RAN1

Proposal 5 Move the configuration of repetition schemes from BPW-DownlinkDedicated to PDCCH-Config i.e. implement this change in running RRC CR.

Proposal 6 Discuss and agree the value range for coresetPoolIndex-r16 in ControlResourceSet.

Discussion: If we explicitly configure INTEGER(0..1) do we need restriction that if 0 is configured 1 has to be configured as well in addition to rules on absence for legacy compatibility?

Proposal 9 Discuss if the parameters enableDefaultBeamPlForPUSCH0\_0, enableDefaultBeamPlForPUCCH, enableDefaultBeamPlForSRS, and PLRS-update parameter are needed.

* Huawei/QC think that these parameters are needed.

From Question 10:

Issue1:

Should capture that dataScramblingIdentityPDSCH2 can only be configured if PDCCH-Config in the same BWP-DownlinkDedicated includes at least one ControlResourceSet configured with coresetPoolIndex (could also capture that it is deleted by the UE if this is no more the case).

Issue2:

There are several structures with Need R for SetupRelease, we do not understand how this can work

Agreements:

1. Agree to implement two LTE CRS pattern lists corresponding to each CORESETPoolIndex as indicated in above changes and merge the changes to the running RRC CR for NR eMIMO. Can reconsider this if we find an issue.
2. Agree the existing RepetitionSchemeConfig IE (i.e. SEQUENCE) in the running CR as baseline for repetition scheme configuration, with additional restriction in the field description. Also ask RAN1 for confirmation that fdm-tdm and slotBased are mutually exclusive
3. enableDefaultBeamPlForPUSCH0\_0, enableDefaultBeamPlForPUCCH, enableDefaultBeamPlForSRS, and PLRS-update parameter are kept in the RRC CR for now. Can consider to remove them later if not really needed

* Proposals not concluded online are moved to a second phase of offline email discussion 110

[R2-2001684](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001684.zip) Offline discussion 110: eMIMO RRC CR discussion - Second round Ericsson discussion Rel-16 NR\_eMIMO-Core

Attempt to conferm the following proposals

1. Move the configuration of repetition scheme to PDSCH-Config
2. Use explicit indexing for the value range for coresetPoolIndex-r16 in ControlResourceSet and thus INTEGER (0..1)
3. Clarify in field description that dataScramblingIdentityPDSCH2 is used only when coresetPoolIndex is set to 1
4. Correct need code to M for SetupRelease

Agreements:

1. Move the configuration of repetition scheme to PDSCH-Config
2. Use explicit indexing for the value range for coresetPoolIndex-r16 in ControlResourceSet and thus INTEGER (0..1)
3. Clarify in field description that dataScramblingIdentityPDSCH2 is used only when coresetPoolIndex is set to 1
4. Correct need code to M for SetupRelease

[R2-2001345](file:///C:\Data\3GPP\Extracts\R2-2001345.docx) Remaining RRC signalling aspects of NR eMIMO Intel Corporation discussion Rel-16 NR\_eMIMO-Core

* Ericsson is planning to consider this in the RRC CR. Some changes might be needed though
* The discussion will continue as part of offline 110 on RRC CR drafting, also considering the discussion on configuration for MAC CE
* Noted

The following papers are covered by the summary document and then noted

[R2-2000860](file:///C:\Data\3GPP\Extracts\R2-2000860%20Multiple%20rate%20matching%20patterns%20with%20M-TRP.docx) Multiple rate matching patterns with M-TRP Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2001036](file:///C:\Data\3GPP\Extracts\R2-2001036_Discussion%20the%20eMIMO%20RRC%20parameter%20CRS%20pattern%20list_v1.docx) Discussion the MIMO RRC parameter CRS pattern list Qualcomm Incorporated discussion Rel-16 NR\_eMIMO-Core

* Noted

### 6.16.3 DL MAC CE design

DL MAC CE design for TCI states activation/deactivation (for both single-PDCCH and Multi-PDCCH mTRP operation) and for all other functionalities defined by RAN1.

Including output of email discussion [108#68][NR eMIMO] Design of DL MAC CEs (Oppo).

A summary document will also be utilized to treat this agenda item (Oppo).

The following two papers will be handled during the first web conference call

[R2-2000660](file:///C:\Data\3GPP\RAN2\Docs\R2-2000660.zip) Report of [108#68][NR eMIMO] Design of DL MAC CEs OPPO report Rel-16 NR\_eMIMO-Core

Proposal 1 Separate MAC CEs for PUCCH resource-based and PUCCH resource group-based spatial relation activation/deactivation.

* CATT think there is no huge majority in favour of separate MAC CE and then we could live with one. QC also thinks we can live with a single MAC CE, which could be considered as a baseline. Vice-chair thinks there is no baseline and we need to decide.
* Nokia and Samsung think that separate MAC CE are cleaner and there is no big issue with an additional LCID
* Ericsson wonders is a group MAC CE is needed at all if we go for a pure RRC configuration based approach.
* Vivo wonders whether we can reuse legacy MAC CE. Nokia/Oppo think we can use legacy MAC CE when possible otherwise (for 64 spatial relations) we need a new MAC CE

Proposal 2 In case the single PUCCH spatial relation MAC CE design is agreed, the new MAC CE can be designed to indicate a single spatial relation among up to 64 spatial relations per PUCCH resource, and an additional bit is used to differentiate that whether the MAC CE is PUCCH resource-based or PUCCH resource group-based.

Proposal 3 In case the separate PUCCH spatial relation MAC CEs design is agreed, the Extended PUCCH spatial relation Activation/Deactivation MAC CE indicates the spatial relation info with an explicit spatial relation info index.

Proposal 4 In case the separate PUCCH spatial relation MAC CEs design is agreed, the Group-based PUCCH spatial relation activation/deactivation MAC CE support spatial relation update for single PUCCH resource group.

Proposal 5 Introduce one new MAC CE for AP SRS spatial relation indication, and another new MAC CE for SRS pathloss reference RS update.

* QC wonders whether we need a new LCID is needed for MAC CE for AP SRS spatial relation indication. Oppo think this is needed
* Ericsson think that the positioning WI will also impact the SRS related MAC CE and it would be good to have consistent approach

Proposal 6 For AP SRS spatial activation/update MAC CE, reuse the R15 SP SRS Activation/Deactivation MAC CE format.

Proposal 7 For SRS Pathloss Reference RS Activation/Deactivation MAC CE, pathloss reference RS update for single SRS resource set is supported.

Proposal 8 PUSCH pathloss reference RS update MAC CE with single mapping between sri-PUSCH-PowerControlId and PUSCH-PathlossReferenceRS-Id is supported.

Proposal 9 For PUSCH Pathloss Reference RS activation/deactivation MAC CE, the PUSCH-PathlossReferenceRS-Id and sri-PUSCH-PowerControlId is included explicitly.

Proposal 10 Unified approach is used for designing the MAC CEs regarding multiple CCs/BWPs.

Proposal 11 RAN2 choose the unified approach for designing the MAC CEs regarding multiple CCs/BWPs between option 1 (MAC CE+RRC configuration approach) and option 2 (RRC configuration only approach).

* Intel thinks that MAC CEs are being abused. RRC is supposed to do the job.
* Ericsson/Huawei think that the RRC configuration based approach is better.
* Nokia/Samsung think that option 1 is aligned to RAN1 preference.
* ZTE think that option 1 implies that the network has to send potentially many MAC CEs.
* Nokia/Samsung can accept to go for the majority (option2) but would like to have the possibility to reconsider this if any problems are found

Who is in favour of option 1:

* Apple, QC, Samsung, Nokia

Who is in favour of option 2:

* Vivo, Futurewei, LGE, CATT, Ericsson, Huawei, Intel, ZTE, Oppo

Who cannot accept option 1:

* Futurewei, LGE, CATT, Ericsson, Huawei, ZTE, Vivo

Who cannot accept option 2:

* Samsung, Nokia

Proposal 12 If RRC configuration only approach is agreed, RAN 2 discuss whether R16 UE should support MAC CE with granularity of both per CC-list and per CC.

Proposal 13 If R16 UE supports MAC CE with granularity of both per CC-list and per CC, separate LCIDs is reserved for differentiating the granularity of the received MAC CE, i.e. either per CC-list or per CC.

Proposal 14 Multiple TRP case is not considered for MAC CEs regarding multiple CCs/BWPs.

Proposal 15 RAN2 further discuss how to design CC list-based SRS activation/deactivation MAC CE.

Agreements:

1. We have separate MAC CEs for PUCCH resource-based and PUCCH resource group-based spatial relation activation/deactivation. We might reconsider this if we go for a pure RRC configuration based approach.
2. In case the separate PUCCH spatial relation MAC CEs design is agreed, the Extended PUCCH spatial relation Activation/Deactivation MAC CE indicates the spatial relation info with an explicit spatial relation info index.
3. In case the separate PUCCH spatial relation MAC CEs design is agreed, the Group-based PUCCH spatial relation activation/deactivation MAC CE support spatial relation update for single PUCCH resource group.
4. Introduce one new MAC CE for AP SRS spatial relation indication, and another new MAC CE for SRS pathloss reference RS update. We need to check whether this is consistent with the outcome of the positioning WI on SRS related MAC CE
5. For AP SRS spatial activation/update MAC CE, reuse the R15 SP SRS Activation/Deactivation MAC CE format.
6. For SRS Pathloss Reference RS Activation/Deactivation MAC CE, pathloss reference RS update for single SRS resource set is supported.
7. PUSCH pathloss reference RS update MAC CE with single mapping between sri-PUSCH-PowerControlId and PUSCH-PathlossReferenceRS-Id is supported.
8. For PUSCH Pathloss Reference RS activation/deactivation MAC CE, the PUSCH-PathlossReferenceRS-Id and sri-PUSCH-PowerControlId is included explicitly.
9. Unified approach is used for designing the MAC CEs regarding multiple CCs/BWPs: option 2 (RRC configuration only). We might reconsider this if we find a problem

* Proposals not concluded online are moved to new offline email discussion 121 on DL MAC CE design
* [AT109e][121][EMIMO] DL MAC CE design (Oppo)

Scope: Continue the discussion on DL MAC CE design aspects which are still open after the discussion on [R2-2000660](file:///C:\Data\3GPP\RAN2\Docs\R2-2000660.zip) as well as those listed in [R2-2001551](file:///C:\Data\3GPP\Extracts\R2-2001551%20-%20Summary%20of%20DL%20MAC%20CE%20design%20for%20agenda%206.16.3.doc)

Intended outcome: summary of the offline discussion in [R2-2001686](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001686.zip) with e.g.:

* + - Set of proposals with full consensus (aim to agree to those over email) to be reflected in the updated MAC CR
    - Set of proposals with almost full consensus and easy to agree
    - Set of open issues and proposals to postpone to next meeting

Final deadline (for companies' feedback): Friday 2020-02-28 12:00 CET

Final deadline (for rapporteur's summary): Monday 2020-03-02 12:00 CET

Proposed agreements in [R2-2001686](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001686.zip) indicated for email agreement and not challenged until Monday 2020-03-02 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

[R2-2001686](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001686.zip) Offline discussion 121: DL MAC CE design OPPO discussion Rel-16 NR\_eMIMO-Core

Proposal 1 If the CC indicated in the MAC CE is configured as part of a CC-list, this MAC CE applies to all the CCs in the CC list; otherwise, the MAC CE applies to single CC.

* Agreed

Proposal 2 Multiple TRP case is not considered for MAC CEs regarding multiple CCs/BWPs, i.e. TCI States Activation/Deactivation for UE-specific PDSCH MAC CE and TCI State Indication for UE-specific PDCCH MAC CE.

* Agreed

Proposal 3 RAN2’s understanding is to introduce a new SRS activation/deactivation MAC CE for multiple CCs/BWPs, and the MAC CE activate the spatial relation info for SRS resource instead of SRS resource set.

* QC thinks that, since proposal 4 will send LS to RAN1 for further clarification on the understanding of proposal 3, proposal 3 is not the RAN2 common understanding. Proposal 3 has dependence on the feedback from RAN1. We suggest at least adding the condition on the proposal 3 that proposal 3 can be reconsidered if RAN1 replied LS gives different understanding
* Ericsson thinks that it should be possible to indicate more than one SRS resource in one MAC CE in order to avoid overhead. This is especially if we go with new LCID space in these MAC CEs.
* To be discussed online
* Intel wonders Ericsson thinks that we can agree in RAN2 that one MAC CE includes more than one SRS resource or we ask RAN1 for this. Ericsson thinks RAN2 can decide. Samsung thinks that single SRS resource is enough (multiple SRS resource is an optimization).

Proposal 4 Send an LS to RAN1 to confirm the understanding of P3.

* Ok to send an LS. Content to be discussed online

Proposal 5 RAN2 discusses the details on designing the SRS activation/deactivation MAC CE for multiple CCs/BWPs in the SRS resource level.

* To be discussed online

Proposal 6 Existing “TCI State Indication for UE-specific PDCCH MAC CE” is used for multi PDCCH-based TRP transmission.

* Agreed

Proposal 7 The legacy Rel-15 MAC CE format is used as a baseline for designing the TCI state activation/deactivation for UE-specific PDSCH MAC CE for mPDCCH case

* Ericsson thinks this is indeed whether sPDCCH and mPDCCH operation is supposed to be separated or not. We think this should get official RAN1 input/agreement and best way to get it is likely asking about it in LS
* To be discussed online
* Samsung don't see the problem with this proposal.

Proposal 8 Introduce a new LCID of mPDCCH-based MAC CE for TRP2 and use same format of the existing MAC CE (R15) of TCI States Activation/Deactivation for UE-specific PDSCH.

* Ericsson thinks that even if we would assume RAN1 comes up with agreement that the operation should be separate the Proposal 8 does not really implement that as the Rel-15 existing MAC CE would need to be modified to explain that for mPDCCH operation, this MAC CE is used for CORESETIndex 0 and new MAC CE is used for CORESETIndex 1. The way to actually separate is to use Rel-15 MAC CE for sPDCCH and new almost copy MAC CE for mPDCCH both CORESETPoolIndex 0 and 1.
* To be discussed online
* Samsung thinks this is a modelling issue.
* ZTE thinks that we could reuse a reserved bit instead of a new LCID. Ericsson would prefer this.
* Vice-chair thinks that we also need to re-discuss the agreement "We have separate MAC CEs for PUCCH resource-based and PUCCH resource group-based spatial relation activation/deactivation. We might reconsider this if we go for a pure RRC configuration based approach" based on the agreement to go for a RRC configuration based approach
* Samsung still prefers RRC + MAC CE but can accept to go for RRC configuration only.
* CATT supports to change the previous agreement. Vivo as well.

Agreements via email (from [121][EMIMO]):

1. If the CC indicated in the MAC CE is configured as part of a CC-list, this MAC CE applies to all the CCs in the CC list; otherwise, the MAC CE applies to single CC.
2. Multiple TRP case is not considered for MAC CEs regarding multiple CCs/BWPs, i.e. TCI States Activation/Deactivation for UE-specific PDSCH MAC CE and TCI State Indication for UE-specific PDCCH MAC CE.
3. Existing “TCI State Indication for UE-specific PDCCH MAC CE” is used for multi PDCCH-based TRP transmission.

Agreements online:

4. RAN2’s understanding is to introduce a new SRS activation/deactivation MAC CE for multiple CCs/BWPs, and the MAC CE activate the spatial relation info for SRS resource instead of SRS resource set. Send an LS to RAN1 to confirm the understanding of P3 (exact wording to be decided). This understanding can be reconsidered if RAN1 reply LS gives different understanding

5. The legacy Rel-15 MAC CE format is used, reusing the first MAC CE reserved bit instead of a new LCID, for designing the TCI state activation/deactivation for UE-specific PDSCH MAC CE for mPDCCH case

6. We have only one MAC CE for PUCCH resource-based and PUCCH resource group-based spatial relation activation/deactivation (reverts the agreement in the first conf call). In the same MAC CE it will be possible to indicate multiple PUCCH resources (i.e. variable size MAC CE). Details to be discussed in the MAC CR drafting (if we cannot converge we might also go back to the initial agreement).

[R2-2001551](file:///C:\Data\3GPP\Extracts\R2-2001551%20-%20Summary%20of%20DL%20MAC%20CE%20design%20for%20agenda%206.16.3.doc) Summary of DL MAC CE design for aganda 6.16.3 OPPO discussion Rel-16 NR\_eMIMO-Core Late

* Discussion moved to new offline email discussion 121 on DL MAC CE design

The following papers are covered by the summary document and then noted

[R2-2000385](file:///C:\Data\3GPP\Extracts\R2-2000385%20MAC%20CEs%20regarding%20multiple%20CCs%20or%20BWPs.docx) MAC CEs regarding multiple CCs/BWPs vivo discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2000659](file:///C:\Data\3GPP\Extracts\R2-2000659%20-%20CC%20list-based%20SRS%20Activation%20%20MAC%20CE.doc) CC list-based SRS Activation MAC CE OPPO discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2000766](file:///C:\Data\3GPP\Extracts\R2-2000766%20Enhancement%20of%20multiple%20PDCCH-based%20TRP%20transmssion.doc) Enhancement of multiple PDCCH-based TRP transmission Samsung discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2000890](file:///C:\Data\3GPP\Extracts\R2-2000890.docx) Views on eMIMO MAC CEs CATT discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2001034](file:///C:\Data\3GPP\Extracts\R2-2001034_Design%20of%20MIMO%20DL%20MAC%20CEs_v1.docx) Design of MIMO DL MAC CE Qualcomm Incorporated discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2001126](file:///C:\Data\3GPP\Extracts\R2-2001126%20Remaining%20update%20for%20PDSCH%20TCI%20state%20MAC%20CE.docx) Remaining update for PDSCH TCI state MAC CE Ericsson discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2001128](file:///C:\Data\3GPP\Extracts\38.321_CR(Rel-16)_R2-2001128-%20TCI%20state%20for%20PUCCH%20MAC%20CE.docx) New MAC CE for indicating spatial resource for PUCCH resources Ericsson draftCR Rel-16 38.321 15.8.0 NR\_eMIMO-Core

* Noted

[R2-2001196](file:///C:\Data\3GPP\Extracts\R2-2001196.docx) MAC CE signalling for multi-beam enhancement Huawei, HiSilicon discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2001465](file:///C:\Data\3GPP\Extracts\R2-2001465%20%20Consideration%20on%20TCI%20state%20MAC%20CE%20for%20mTRP%20mPDCCH%20transmissios.doc) Considerations on TCI state MAC CE for mPDCCH mTRP transmission ZTE Corporation, Sanechips discussion Rel-16 NR\_eMIMO-Core

* Noted

### 6.16.4 General beam management enhancements

Including details of BFR procedure for Scell. Other aspects, if any, can also be covered here

Including output of email discussion [108#69][NR eMIMO] Running MAC CR (Samsung)

Including output of email discussion [108#70][NR eMIMO] BFR MAC CE (Samsung)

A summary document will also be utilized to treat this agenda item (Samsung).

[R2-2000767](file:///C:\Data\3GPP\Extracts\R2-2000767%20DraftCR_38321_Running%20CR%20for%20NR%20eMIMO.docx) MAC running CR for NR eMIMO Samsung CR Rel-16 38.321 15.8.0 0691 - B NR\_eMIMO-Core

* Endorsed as baseline CR. Moved to offline email discussion (to be kicked off after progress of the discussion on DL/UL MAC CE design and the general beam enhancement aspects)
* [AT109e][111][EMIMO] MAC CR (Samsung)

Scope: Update the CR based on the outcome of the discussion on [R2-2000660](file:///C:\Data\3GPP\RAN2\Docs\R2-2000660.zip) (DL MAC CE design) and [R2-2001678](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001678.zip), [R2-2001685](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001685.zip) and [R2-2001686](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001686.zip).

Intended outcome: Agreed 38.321 CR

Intermediate deadline (for companies' feedback on the endorsed baseline CR): Friday 2020-02-28 12:00 CET

Intermediate deadline (for rapporteur's updated CR): Monday 2020-03-02 12:00 CET

Final deadline for companies' feedback: Wednesday 2020-03-04 12:00 CET

Final deadline for rapporteur's version for agreement: Thursday 2020-03-05 12:00 CET

[R2-2001672](file:///C:\Data\3GPP\Extracts\R2-2001672_Summary%20of%20Beam%20Management%20Enhancements.docx) Summary of [NR eMIMO] Beam management enhancements Samsung discussion Rel-16 NR\_eMIMO-Core

* Initially moved to offline email discussion with the intention to go back online during the web conference call(s)
* [AT109e][112][EMIMO] Beam management enhancements (Samsung)

Initial scope: Continue the discussion on beam management enhancements, based on [R2-2001672](file:///C:\Data\3GPP\Extracts\R2-2001672_Summary%20of%20Beam%20Management%20Enhancements.docx)

Initial intended outcome:

* + - Set of proposals with full consensus (aim to agree to those over email)
    - Set of proposals that need further (online) discussion

Initial intermediate deadline (for companies' feedback): Tuesday 2020-02-25 20:00 CET

Initial intermediate deadline (for rapporteur's summary): Wednesday 2020-02-26 01:30 CET

Revised scope: Continue the discussion on beam management aspects which are still open after the discussion on [R2-2001678](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001678.zip) as well as BFR MAC CE aspects listed in [R2-2000227](file:///C:\Data\3GPP\RAN2\Docs\R2-2000227.zip)

Final intended outcome: summary of the offline discussion in [R2-2001685](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001685.zip) with e.g.:

* + - Set of proposals with full consensus (aim to agree to those over email) to be reflected in an updated MAC CR
    - Set of proposals with almost full consensus and easy to agree
    - Set of open issues and proposals to postpone to next meeting
    - Open issues that should no longer be pursued

Final deadline (for companies' feedback): Friday 2020-02-28 12:00 CET

Final deadline (for rapporteur's summary): Monday 2020-03-02 12:00 CET

Proposed agreements in [R2-2001685](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001685.zip) indicated for email agreement and not challenged until Monday 2020-03-02 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

[R2-2001678](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001678.zip) Offline discussion 112: Beam management enhancements Samsung discussion Rel-16 NR\_eMIMO-Core

Agreements:

1. SCell BFR MAC CE can be transmitted using UL grant of any serving cell. Note that this option is implemented in running CR.
2. BFR MAC CE has an LCP priority higher than BSR MAC CE. Discussion can continue this meeting on whether this is higher or lower than Configured Grant Confirmation MAC CE.
3. No new timer to avoid triggering multiple BFRQ MAC CEs and handle BFRQ MAC CE retransmission(s) is not introduced for now. Can come back with this proposal in the next meeting
4. If we agree on a bitmap based BFR MAC CE format, introduce a truncated SCell BFR MAC CE format
5. RA prioritisation for Scell BFR is not supported.

* Proposals not concluded online are moved to a second phase of offline email discussion 112

Proposal 1: SCell BFR MAC CE can be transmitted using UL grant of any serving cell. Note that this option is implemented in running CR.

Rapporteur's comment: The proposal is based on majority view (9/6).

* Nokia thinks that in NR-U we decided not to do this and wonder why we need a different behaviour here
* Vivo/Samsung think this case is different from LBT failure case and we don't necessarily need to align among WIs. Samsung also indicates that the other alternative in the discussion was to leave this to UE implementation so that would be the alternative
* Nokia thinks that if we have beam correspondence UL is gone if DL is gone and they are afraid that we might need to change in the future.

Proposal 2: BFR MAC CE has an LCP priority higher than BSR MAC CE but lower than Configured Grant Confirmation MAC CE.

Rapporteur's comment: The proposal is based on majority view (9/8).

* Samsung thinks that all agree that BFR MAC CE has an LCP priority higher than BSR MAC CE so that can be agreed.

Proposal 3:New Timer to avoid triggering multiple BFRQ MAC CEs and handle BFRQ MAC CE retransmission(s) is not introduced.

Rapporteur's comment: The proposal is based on majority view (8/7).

* Nokia wonders what the solution is if there is no timer an there is no ack from the network
* Ericsson don't think a new timer to protect against lost MAC CE is needed
* Lenovo think that with proposal 1 now there is an even higher risk that no ack is received

Proposal 4: Introduce a truncated SCell BFR MAC CE format where,

- Ci field is included but octet(s) containing candidate beam availability indication (AC) and Candidate RS ID fields of one or more SCells are truncated in order not to exceed remaining UL resource.

- LCID for Truncated BFR MAC CE is different from non-truncated BFR MAC CE

Rapporteur's comment: The proposal is based on majority view (10/4).

Proposal 5: The transmission of the beam failure information of a certain SCell only cancels the pending BFR SR triggered by this Scell

Rapporteur's comment: The proposal is based on majority view (9/4).

Proposal 6: RA prioritisation for Scell BFR is not supported.

Rapporteur's comment: The proposal is based on majority view (12/4).

Proposal 7: Triggered BFRs for the SCell are cancelled upon Scell deactivation.

Rapporteur's comment: The proposal is based on majority view (almost consensus).

Proposal 8: UE shall not ignore measurement gaps while monitoring PDCCH addressed to C-RNTI/CS-RNTI for receiving an UL grant for new transmission after transmitting BFRQ SR and BFRQ MAC CE.

Rapporteur's comment: The proposal is based on majority view (8/4).

Proposal 9: Consecutive octets containing 'AC' field at the end of SCell BFR MAC CE can be omitted.

Rapporteur's comment: The proposal is based on majority view (3/3, 6 has no strong view and seems ok to support).

Proposal 10: BFR MAC CE for BFR on SpCell is not supported in R16.

Rapporteur's comment: There is no consensus or majority to introduce BFR MAC CE for BFR on SpCell. There is also no consensus or clear majority on detailed solutions (see summary of Q14 and Q15).

[R2-2001685](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001685.zip) Offline discussion 112: Beam management enhancements - Second round Samsung discussion Rel-16 NR\_eMIMO-Core

Proposals for agreement (significant majority)

Proposal 1: A bitmap is included in SCell BFR MAC CE to indicate failed SCell indices.

* Agreed

Proposal 2: The length of the bitmap is either 1 or 4 octets. A single octet bitmap is used when the highest ServCellIndex of the MAC entity's SCell configured with beam failure detection is less than 8, otherwise four octets are used.

* Agreed

Proposal 3:One bit field is included in SCell BFR MAC CE to indicate whether candidate beam is available or not. This field is included only for failed SCell.

* Agreed

Proposal 4: 6 bit candidate RS ID field is included in SCell BFR MAC CE for failed SCell. The field is set to index of candidate RS in candidate RS list. The field is included only if new candidate beam is available for failed SCell.

* Agreed

Proposal 5: Adopt the TP in section 5 of R2-2000227.

* Agreed

Proposal 6: Truncated SCell BFR MAC CE format:

- Ci field is included (as in non-truncated format) but octet(s) containing candidate beam availability indication (AC) and Candidate RS ID fields of one or more SCells are truncated in order not to exceed remaining UL resource.

- LCID for Truncated BFR MAC CE is different from non-truncated BFR MAC CE

* Agreed

Proposal 8: The transmission of the beam failure information of a certain SCell only cancels the pending BFR SR triggered by this SCell.

* Agreed

Proposal 9: Triggered BFRs for the SCell are cancelled upon Scell deactivation.

* Agreed

Proposal 10: UE shall not ignore measurement gaps while monitoring PDCCH addressed to C-RNTI/CS-RNTI for receiving an UL grant for new transmission after transmitting BFRQ SR and BFRQ MAC CE.

* Agreed

Proposals for discussion

Proposal 6: SCell BFR MAC CE has same priority as Configured Grant Confirmation MAC CE.

* Nokia in principle is fine but this could also be impacted by decisions in NR-U
* Ericsson has no problem with either higher or lower priority, but equal is strange.
* Samsung thinks this is a corner case and in case it will be up to UE implementation.

Proposal 11: BFR MAC CE for BFR on SpCell is not supported in R16.

* Apple thinks there is a (small) majority in favour of supporting BFR MAC CE for BFR on SpCell so we should discuss whether to actually support this in R16
* Samsung thinks we should fix the problem we have and not introduce a completely new solution
* The proposal has quite some support. The problem is whether this would fit in the time we have, also considering the different views on the different detailed aspects
* Email discussion until the next meeting on the technical details to converge on a single solution. We will then re-assess whether to include this or not as part of the eMIMO WI.
* [RAN2#109e][EMIMO] BFR MAC CE for BFR on SpCell (Apple)

Intended outcome: Discuss the technical details to converge on a single solution.

Deadline: until the next meeting

Agreements via email (from second round of [112][EMIMO]):

1. A bitmap is included in SCell BFR MAC CE to indicate failed SCell indices.
2. The length of the bitmap is either 1 or 4 octets. A single octet bitmap is used when the highest ServCellIndex of the MAC entity's SCell configured with beam failure detection is less than 8, otherwise four octets are used.
3. One bit field is included in SCell BFR MAC CE to indicate whether candidate beam is available or not. This field is included only for failed SCell.
4. 6 bit candidate RS ID field is included in SCell BFR MAC CE for failed SCell. The field is set to index of candidate RS in candidate RS list. The field is included only if new candidate beam is available for failed SCell.
5. Adopt the TP in section 5 of R2-2000227.

6. Truncated SCell BFR MAC CE format (truncated format is used if normal format does not fit):

- Ci field is included (as in non-truncated format) but octet(s) containing candidate beam availability indication (AC) and Candidate RS ID fields of one or more SCells are truncated in order not to exceed remaining UL resource.

- LCID for Truncated BFR MAC CE is different from non-truncated BFR MAC CE

7. The transmission of the beam failure information of a certain SCell only cancels the pending BFR SR triggered by this SCell.

8. Triggered BFRs for the SCell are cancelled upon Scell deactivation.

9. UE shall not ignore measurement gaps while monitoring PDCCH addressed to C-RNTI/CS-RNTI for receiving an UL grant for new transmission after transmitting BFRQ SR and BFRQ MAC CE.

Agreements online:

10. SCell BFR MAC CE has same priority as Configured Grant Confirmation MAC CE. (we might come back to this if real problems are found)

The following paper will be handled during the first web conference call

[R2-2000227](file:///C:\Data\3GPP\RAN2\Docs\R2-2000227.zip) Summary of Email discussion 108#70 - BFR MAC CE Samsung Electronics Co., Ltd discussion Rel-16 NR\_eMIMO-Core

* The discussion will continue as part of offline email discussion 112

The following papers are covered by the summary document and then noted

[R2-2000226](file:///C:\Data\3GPP\Extracts\R2-2000226_Remaining%20issues%20of%20SCell%20BFR.doc) Remaining issues of SCell BFR Samsung Electronics Co., Ltd discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2000386](file:///C:\Data\3GPP\Extracts\R2-2000386%20SR%20cancellation%20due%20to%20the%20truncated%20BFR%20MAC%20CE.docx) SR cancellation due to the truncated BFR MAC CE vivo discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2000587](file:///C:\Data\3GPP\Extracts\._R2-2000587_SCell%20BFR%20Operation.doc) SCell BFR Operation Apple, Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_eMIMO-Core [R2-1915934](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1915934.zip)

* Noted

[R2-2000658](file:///C:\Data\3GPP\Extracts\R2-2000658%20-%20Open%20issues%20on%20SCell%20BFR.doc) Open issues on SCell BFR OPPO discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2000891](file:///C:\Data\3GPP\Extracts\R2-2000891.docx) Views on Remaining Issues of SCell BFR CATT discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2001304](file:///C:\Data\3GPP\Extracts\R2-2001304_Consideration%20on%20Truncated%20format%20on%20SCell%20BFR%20MAC%20CE.docx) Consideration on Truncated format on SCell BFR MAC CE LG Electronics Inc. discussion NR\_eMIMO-Core

* Noted

[R2-2001421](file:///C:\Data\3GPP\Extracts\R2-2001421%20Remaining%20issues%20on%20SCell%20BFR%20procedure.docx) Remaining issues on SCell BFR procedure Asia Pacific Telecom co. Ltd discussion

* Noted

[R2-2001484](file:///C:\Data\3GPP\Extracts\R2-2001484%20Remaining%20issues%20on%20SCell%20BFR.docx) Remaining issues on SCell BFR Qualcomm Inc discussion Rel-16

* Noted

[R2-2001509](file:///C:\Data\3GPP\Extracts\R2-2001509-%20The%20remaining%20issues%20on%20Beam%20Failure%20Recovery%20on%20SpCell%20and%20SCell.doc) The remaining issue on BFR on SpCell and SCell ZTE Corporation, Sanechips, Asia Pacific Telecom co. Ltd discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2001599](file:///C:\Data\3GPP\Extracts\R2-2001599%20Remaining%20issues%20of%20SCell%20BFR.docx) Remaining issues of SCell BFR ASUSTeK discussion Rel-16 NR\_eMIMO-Core [R2-1916037](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1916037.zip)

* Noted

[R2-2001600](file:///C:\Data\3GPP\Extracts\R2-2001600%20SCell%20BFR%20regarding%20Scell%20deactivation.docx) SCell BFR regarding Scell deactivation ASUSTeK discussion Rel-16 NR\_eMIMO-Core

* Noted

[R2-2001652](file:///C:\Data\3GPP\Extracts\R2-2001652%20-%20BFR%20MAC%20CE%20for%20SpCell.docx) BFR MAC CE for SpCell Ericsson, Nokia, Nokia Shanghai Bell, Apple discussion Rel-16 NR\_eMIMO-Core

* Noted

The following document is withdrawn

[R2-2001464](file:///C:\Data\3GPP\Extracts\R2-2001464-%20The%20remaining%20issues%20on%20Beam%20Failure%20Recovery%20on%20SpCell%20and%20SCell.doc) The remaining issue on BFR on SpCell and SCell ZTE Corporation, Sanechips, Asia Pacific Telecom co. Ltd discussion Rel-16 NR\_eMIMO-Core Withdrawn

## 6.18 Private Network Support for NG-RAN

(NG\_RAN\_PRN-Core; leading WG: RAN3; REL-16; started: Mar 19; target; Mar 20; WID: [RP-191563](http://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_84\Docs\RP-191563.zip)). Documents in this agenda item will be handled in a break out session.

Time budget: 0.5 TU

Tdoc Limitation: 3 tdocs

It's possible to contribute to all sub agenda items, to address the remaining open issues. Summary documents may then be utilized to summarize documents submitted to a given sub-AI and to make tentative proposals. For this Work Item, the discussion (on summary/company tdocs) will start during a web conference and will then continue via offline email discussions.

### 6.18.1 Organisational

Including incoming LSs , rapporteur inputs, running stage 2 CRs , etc

[R2-2000568](file:///C:\Data\3GPP\Extracts\R2-2000568%20NPN%20Work%20Plan.docx) NPN Work Plan Nokia (Rapporteur) discussion Rel-16 NG\_RAN\_PRN-Core [R2-1914598](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1914598.zip)

* Noted

[R2-2000025](file:///C:\Data\3GPP\Extracts\R2-2000025_R3-197591.doc) Reply LS on Sending CAG ID in NAS layer (R3-197591; contact: Ericsson) RAN3 LS in Rel-16 NG\_RAN\_PRN To:SA3, SA2, RAN2 Cc:CT1

* Noted (content covered in the summary paper)

[R2-2000074](file:///C:\Data\3GPP\Extracts\R2-2000074_S3-194559.doc) Reply LS on Sending CAG ID in NAS layer (S3-194559; contact: Qualcomm) SA3 LS in Rel-16 FS\_Vertical\_LAN\_SEC To:RAN3, SA2, RAN2 Cc:CT1

* Noted (content covered in the summary paper)

[R2-2000057](file:///C:\Data\3GPP\Extracts\R2-2000057_S2-1912731.doc) Reply LS on sending CAG ID during resume procedure (S2-1912731; contact: Qualcomm) SA2 LS in Rel-16 Vertical\_LAN To:CT1 Cc:RAN2

* Noted (content covered in the summary paper)

[R2-2000069](file:///C:\Data\3GPP\Extracts\R2-2000069_S2-2001616.doc) LS on Sending CAG ID (S2-2001616; contact: Ericsson) SA2 LS in Rel-16 Vertical\_LAN To:CT1, RAN2, RAN3, SA3, SA

* Noted

[R2-2000078](file:///C:\Data\3GPP\Extracts\R2-2000078_S5-197805.doc) LS on NPN network sharing (S5-197805; contact: Huawei) SA5 LS in Rel-16 FS\_OAM\_NPN To:SA2 Cc:RAN2, RAN3, SA1

* Noted

[R2-2000065](file:///C:\Data\3GPP\Extracts\R2-2000065_S2-2001398.doc) LS reply on NPN network sharing (S2-2001398; contact: Huawei) SA2 LS in Rel-16 Vertical\_LAN To:SA5 Cc:RAN2, RAN3, SA1

* Noted

[R2-2000055](file:///C:\Data\3GPP\Extracts\R2-2000055_S2-1912602.doc) LS on RAN sharing for NPNs (S2-1912602; contact: Qualcomm) SA2 LS in Rel-16 Vertical\_LAN To:RAN2, RAN3

* Noted

[R2-2000066](file:///C:\Data\3GPP\Extracts\R2-2000066_S2-2001400.doc) Reply LS on CMAS/ETWS and emergency services for SNPNs (S2-2001400; contact: Qualcomm) SA2 LS in Rel-16 Vertical\_LAN To:RAN2 Cc:SA1, CT1

* Noted

[R2-2000079](file:///C:\Data\3GPP\Extracts\R2-2000079_S5-197806.doc) LS on CAG definition (S5-197806; contact: Huawei) SA5 LS in Rel-16 FS\_OAM\_NPN To:SA2, RAN2 Cc:RAN3, CT4

* Questions to RAN2 need to be answered. The discussion can be based on [R2-2002069](file:///C:\Data\3GPP\Extracts\R2-2002069%20%5bdraft%5d%20Reply%20LS%20on%20CAG%20definition.doc)
* Noted

[R2-2000067](file:///C:\Data\3GPP\Extracts\R2-2000067_S2-2001401.doc) LS reply on CAG definition (S2-2001401; contact: Huawei) SA2 LS in Rel-16 Vertical\_LAN To:SA5 Cc:RAN2, RAN3, CT4

* Noted

[R2-2002069](file:///C:\Data\3GPP\Extracts\R2-2002069%20%5bdraft%5d%20Reply%20LS%20on%20CAG%20definition.doc) [DRAFT] LS on CAG definition Huawei LS out Rel-16 NG\_RAN\_PRN-Core To:SA5 Cc:SA2 Late

* QC suggests to remove reference to SNPN cells in Q2 as they wonder whether all combinations are possible.
* QC, Ericsson, Nokia think that from RAN2 point of view all combinations are supported
* Vice-chair wonders whether we need to clarify this in Stage 2.
* Agree to send a response to SA5 along the lines in the draft reply LS. Detailed wording to be discussed offline
* Also discuss offline which combinations are allowed (from Stage2 perspective) and whether further guidance from other groups is needed
* [After offline discussion] There is no need to capture in Stage 2 specification (TS 38.300)whether the RAN sharing of all three network types (i.e. the combination of “PLMN(s) + SNPN(s) + CAG(s)”) is supported.No LS to other groups is needed for this.
* [AT109e][116][PRN] Reply LS to SA5 (Huawei)

Scope: Discuss the wording of the reply LS to SA5. Also check whether there is a common understanding on which combinations are allowed and whether further guidance from other groups is needed

Intended outcome:

1. Agreed LS to SA5.

2. Decision on the need (and in case on the content) of an LS to other groups to clarify which combinations are possible

Deadline: Tuesday 2020-03-03 12:00 CET

[R2-2001679](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001679.zip) Draft reply LS on CAG definition Huawei LS out Rel-16 NG\_RAN\_PRN-Core To:SA5 Cc:SA2

* Revised in [R2-2001703](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001703.zip) (to remove 'Draft' and put 'RAN2' as source)

[R2-2001703](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001703.zip) Reply LS on CAG definition Huawei LS out Rel-16 NG\_RAN\_PRN-Core To:SA5 Cc:SA2, RAN3, CT4

* Agreed

[R2-2000051](file:///C:\Data\3GPP\Extracts\R2-2000051_S1-193605.doc) Reply LS on NPN clarifications (S1-193605; contact: Qualcomm) SA1 LS in Rel-16 Vertical\_LAN, NG\_RAN\_PRN To:SA2, RAN3 Cc:RAN2, SA3

* Noted

[R2-2002096](file:///C:\Data\3GPP\RAN2\Docs\R2-2002096.zip) Reply LS on manual CAG selection (S1-201084; contact: Qualcomm) SA1 LS in Rel-16 To:CT1 Cc: RAN2, SA2

* Noted

[R2-2000569](file:///C:\Data\3GPP\Extracts\R2-2000569%20NPN%20Stage%202.docx) Non-Public Networks Nokia, China Telecom (Rapporteurs) CR Rel-16 38.300 16.0.0 0195 - B NG\_RAN\_PRN-Core [R2-1914599](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1914599.zip)

* Revised in [R2-2002068](file:///C:\Data\3GPP\Extracts\R2-2002068%20NPN%20Stage%202.docx)

[R2-2002068](file:///C:\Data\3GPP\Extracts\R2-2002068%20NPN%20Stage%202.docx) Non-Public Networks Nokia, China Telecom (Rapporteurs) CR Rel-16 38.300 16.0.0 0195 1 B NG\_RAN\_PRN-Core [R2-1914599](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1914599.zip)

* Endorsed as baseline CR. Moved to offline email discussion for agreement
* [AT109e][113][PRN] Stage 2 CR (Nokia)

Intended outcome: Agreed 38.300 CR, taking into account proposals in [R2-2000570](file:///C:\Data\3GPP\Extracts\R2-2000570%20NPN%20Emergency%20Calls%20in%20CAG%20Cells.docx) and possible new agreements during the meeting.

Deadline for feedback on baseline CR and [R2-2000570](file:///C:\Data\3GPP\Extracts\R2-2000570%20NPN%20Emergency%20Calls%20in%20CAG%20Cells.docx): Thursday 2020-02-27 12:00 CET

Deadline for feedback on further updates: Wednesday 2020-03-04 16:00 CET

Deadline for rapporteur's version for agreement: Thursday 2020-03-05 12:00 CET

[R2-2000570](file:///C:\Data\3GPP\Extracts\R2-2000570%20NPN%20Emergency%20Calls%20in%20CAG%20Cells.docx) Emergency Calls in CAG-Only Cells Nokia (Rapporteur), China Telecom, Ericsson, Intel, Nokia Shanghai Bell, Vodafone, ZTE discussion Rel-16 NG\_RAN\_PRN-Core

* To be considered as part of the offline email discussion 113

The following paper is covered by the summary document(s) and then noted

[R2-2001331](file:///C:\Data\3GPP\Extracts\R2-2001331%20Open%20issues%20related%20to%20NPN.doc) Open issues in NPN Qualcomm Incorporated discussion

* Noted

### 6.18.2 Cell selection and reselection

Including output of email discussion [108#37][PRN] Running RRC CR (Nokia).

Including output of email discussion [108#71][PRN] Running 38.304 CR (Qualcomm).

A summary document will also be utilized to treat this agenda item (Qualcomm).

[R2-2001035](file:///C:\Data\3GPP\RAN2\Docs\R2-2001035.zip) Introducing the support of Non-Public Networks Nokia (Rapporteur) CR Rel-16 38.331 15.8.0 1468 - B NG\_RAN\_PRN-Core

* Endorsed as baseline CR. Moved to offline email discussion (to be kicked off after progress on the remaining open issues)
* [AT109e][114][PRN] RRC CR (Nokia)

Scope: Update the RRC CR, based on the progress on the remaining open issues

Intended outcome: Agreed 38.331 CR

Deadline: Thursday 2020-03-05 12:00 CET

[R2-2001311](file:///C:\Data\3GPP\Extracts\R2-2001311%20108%2371PRN%20%20Running38.304%20CR%20Report%20v3.docx) Report for email discussion [108#71][PRN] Running 38.304 CR (Qualcomm) Qualcomm Incorporated discussion

* Noted

[R2-2001310](file:///C:\Data\3GPP\Extracts\R2-2001310%20Running%20CR%20for%2038.304%20v2.docx) PRN Running CR for TS 38.304 Qualcomm Incorporated CR Rel-16 38.304 15.6.0 0148 - B NG\_RAN\_PRN

* Endorsed as baseline CR. Moved to offline email discussion (to be kicked off after progress on the remaining open issues)
* [AT109e][115][PRN] 38.304 CR (Qualcomm)

Scope: Update the 38.304 CR, based on the progress on the remaining open issues

Intended outcome: Agreed 38.304 CR

Deadline: Thursday 2020-03-05 12:00 CET

The following paper will be handled during the first web conference call

[R2-2001673](file:///C:\Data\3GPP\Extracts\R2-2001673%20%5bPre109e%5d%5bPRN%5d%20Summary%20for%20PRN%20-%20cell%20selection%20and%20reselection%20v2.docx) Summary of [PRN] Cell Selection and selection Qualcomm discussion Rel-16 NG\_RAN\_PRN -Core

* Revised in [R2-2001676](file:///C:\Data\3GPP\RAN2\Docs\R2-2001676.zip)

[R2-2001676](file:///C:\Data\3GPP\RAN2\Docs\R2-2001676.zip) Summary of [PRN] Cell Selection and selection Qualcomm discussion Rel-16 NG\_RAN\_PRN -Core

A decision on the following proposals (sorted and tentatively amended by the session chair, based on latest comments on the reflector) was attempted online:

Proposal 1: RRC\_INACTIVE state is supported for SNPN and CAG. FFS whether any specific enhancement is needed

* Lenovo wonders whether we need to specify that mandatory features apply to NPN
* Nokia would like to remove the FFS and not link this to Rel-15 features only

Proposal 2: Remove the following Editor’s Notes without introducing any other changes:

Editor's Note: The need for list of NIDs depends on the RAN sharing scenarios to be supported.

Editor's Note: The support of sharing logical cells is FFS.

* Huawei wonders whether we need to explain more in the running CR.
* Nokia, QC, and Ericsson think this is already covered but can further check offline if anything is needed

Proposal 3: RAN2 confirm that For SNPN, cellReservedForOperatorUse is allowed to be configured per SNPN, while for CAG, cellReservedForOperatorUse is allowed to be configured per PLMN.

* Ericsson and Nokia wonder why we need this restriction

Proposal 9a: PCI range of SNPN cells can be optionally signalled to UEs. Further details FFS (i.e. proposals 9b, 9c)

* Ericsson and Nokia wonder what the intended use is for this. LG could live without.
* CMCC think there are benefits also for SNPN. CATT, Huawei, ZTE, Sony agree.
* Lenovo, Google, Qc, Ericsson, Nokia, NEC think this is not needed

Proposal 5: ASN.1 and RRC design shall be such that a Rel-15 UE considers a CAG-only cell as acceptable cell if the cell is not barred to Rel-15 UEs, and if a PLMN ID without CAG list is broadcast and that PLMN is forbidden (e.g. by use of PLMN ID for which all registration attempts are rejected such that the PLMN ID becomes forbidden).

* Vice-chair and others think this could be worded as a Stage2 clarification

Proposal 20: RAN2 to discuss whether a Rel-16 non-NPN capable UE is required to read the NPN identifier information broadcasted in SIB1 by a cell.

* Ericsson and ZTE think that a Rel-16 non-NPN capable UE should behave as a Rel-15 UE
* Intel and LG think that a non-NPN Rel-16 UEs might need to be able to read some Rel-16 IEs

Proposal 12: RAN2 to discuss if proximity indication is supported or not for CAGs.

* Nokia thinks that PCI confusion does not justify to have this now for CAG. Ericsson/Intel also think this is not needed.
* Huawei, ZTE, Vivo think this is useful
* Google, LG, Sony, Ericsson, Intel and Nokia think we don't need this

Proposal 13: RAN2 to discuss whether EN-DC is supported in NPNs. If not, trackingAreaCode should be mandatory in NPN-IdentityInfo.

* Vodafone think this could be interesting to some extent.
* Nokia think we can first of all agree that EN-DC is not supported

Agreements:

1. RAN2 understanding is that all mandatory features apply to NPN (we might check this again for Rel-16 features if any problems are found)
2. Remove the following Editor’s Notes without introducing any other changes

Editor's Note: The need for list of NIDs depends on the RAN sharing scenarios to be supported.

Editor's Note: The support of sharing logical cells is FFS.

1. No PCI range of SNPN cells will be signalled
2. Clarify in Stage 2 that a Rel-15 UE considers a CAG-only cell as acceptable cell if the cell is not barred to Rel-15 UEs, and if a PLMN ID without CAG list is broadcast and that PLMN is "not allowed" (e.g. by use of PLMN ID for which all registration attempts are rejected such that the PLMN ID becomes not allowed). Discuss wording as part of the Stage 2 discussion
3. Proximity indication is not supported CAGs
4. EN-DC is not supported for NPN

* Proposals not concluded online are moved to offline email discussion
* [AT109e][117][PRN] Cell Selection and selection aspects (Qualcomm)

Scope: Continue the discussion on cell selection and reselection aspects, trying to conclude on proposals from [R2-2001676](file:///C:\Data\3GPP\RAN2\Docs\R2-2001676.zip) not concluded online.

Initial intended outcome:

* + - Initial set of proposals with full consensus (agreeable over email) in [R2-2001680](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001680.zip):

Initial intermediate deadline (for companies' feedback): Thursday 2020-02-27 23:59 CET

Initial intermediate deadline (for rapporteur's list of proposals): Friday 2020-02-28 12:00 CET

Proposed agreements in [R2-2001680](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001680.zip) not challenged until Monday 2020-03-02 12:00 CET will be declared as agreed by the session chair.

Final intended outcome: summary of the offline discussion in [R2-2001697](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001697.zip) with e.g.:

* + - (Further) set of proposals with full consensus, if any (agreeable over email)
    - Set of proposals with almost full consensus to discuss in the follow up conference call
    - Set of open issues and proposals to postpone to next meeting
    - Open issues that should no longer be pursued

Final deadline (for companies' feedback): Monday 2020-03-02 23:59 CET

Final deadline (for rapporteur's summary): Tuesday 2020-03-03 12:00 CET

Proposed agreements in [R2-2001697](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001697.zip) not challenged until Tuesday 2020-03-03 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

[R2-2001680](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001680.zip) offline discussion 117: [PRN] Cell Selection and selection - Intermediate status Qualcomm, ZTE Corporation (Session Chair) discussion Rel-16 NG\_RAN\_PRN -Core

Following proposals had unanimous support in previous discussion:

Proposal 2.1: When a cell broadcasts any CAG IDs or NIDs, NPN-capable Rel-16 UE can treat the cell with cellReservedForOtherUse = true as a candidate during cell selection and cell reselection.

* Agreed

Proposal 3.2: For CAG-capable Rel-16 UE, emergency calls in a CAG-only cell can be supported by setting cellReservedForOtherUse=true and allowing the Rel-16 Ues to ignore this flag and access the PLMNs in the NPN list in limited service state.

* Agreed

Proposal 8: High quality criteria is not considered for SNPNs in Rel-16.

* Agreed

Proposals that had support from significant majority (and not explicitly challenged before the submission deadline for this document)

Proposal 2.2: Non-NPN-capable Rel-16 UE treat a cell with cellReservedForOtherUse = true as barred.

* QC does not agree: This creates different behavior for emergency calls by UEs of the same release. Suggested way forward:  Non-NPN-capable Rel-16 UE treat a cell with cellReservedForOtherUse=true as barred. FFS if there is an exception when a Non-NPN-capable UE is placing an emergency call on a cell that is not suitable due to CAG
* Also Nokia does not agree: This makes emergency sessions from CAG-only cells impossible for non-CAG capable UEs.
* Also Vodafone does not agree: This will create a scenario where  emergency sessions from CAG-only cells will become impossible for non-CAG capable UEs.

Proposal 4.1: For unlicensed spectrum and a UE in SNPN AM, 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.

* Agreed

Proposal 4.3: UE in SNPN AM does not ignore intraFreqReselection broadcast by a SNPN cell in licensed spectrum.

* Agreed

Proposal 5.2: UE not in SNPN AM does not ignore intraFreqReselection broadcast by a CAG cell in licensed spectrum.

* Agreed

Proposal 6.3: For RRC\_IDLE/RRC\_INACTIVE UE in manual CAG/SNPN mode, UE AS informs the NAS if UE AS can’t search for an acceptable or suitable cell belonging to the selected CAG/SNPN.

* Samsung does not agree: Agree with the intention of the proposal. However, we would not prefer to specify detailed AS-NAS interaction

Proposal 7: RAN2 confirms following definition for NPN-only cell: A cell that is only available for NPNs’ subscriber. This is indicated by setting the cellReservedForOtherUse IE to true while the npn-IdentityInfoList-r16 IE is present in CellAccessRelatedInfo.

* CATT does not agree: It will restrict the REL15 UE and Non-NPN-capable Rel-16 UE to access the CAG only for emergency service as REL15 UE and Non-NPN-capable Rel-16 UE treat a cell with cellReservedForOtherUse = true as barred according to Proposal 2.2. The definition of NPN-only cell should allow REL15 UE and Non-NPN-capable Rel-16 UE to access the CAG only cell for emergency service.

Proposal 9: All CAG identities associated to the same PLMN identity is listed in the same cag-IdentityList.

* Softbank does not agree: This is ambiguous whether it applies to only the cell broadcasting CAG-ids or the entire system broadcasting CAG-ids. If it means the latter case, it significantly restricts PLMN operator’s deployments. We suggest updating the proposal as follows: All If the cell broadcast multiple CAG identities, CAG identities associated to the same PLMN identity is listed in the same cag-IdentityList in the cell.

Proposal 10: CAG-capable UE is not allowed to reselect to a CAG member cell ignoring highest ranked cell or best cell acc. To absolute priority reselection rules

* Agreed

Other proposals that had a majority (and not explicitly challenged before the submission deadline for this document):

Proposal 1: PCI values for CAGs are signalled per PLMN per frequency. FFS whether per CAG-ID signalling is allowed. PCI values are signalled as a list of ranges.

* Nokia does not agree: This is just a possible optimization that can be postponed for later releases.

Proposal 3.1: RAN2 confirms that emergency call is possible using the following for any Rel-16 UE on a cell that provides normal services only to UEs accessing CAGs: by setting cellReservedForOtherUse = false and if a PLMN ID without CAG list is broadcast and that PLMN is "not allowed" (e.g. by use of PLMN ID for which all registration attempts are rejected such that the PLMN ID becomes not allowed).

* Samsung does not agree: Emergency calls on CAG cells which are considered as barred by Rel-15 UEs and Rel-16 UEs need to be handled with a unified approach. The barred cell is not suitable for camping but how to consider the barred cell as acceptable for emergency calls needs further discussion. We prefer to postpone this issue for next meeting.
* Also Nokia does not agree: This is actually true, but this should not be the only solution for Rel-16 UEs. If the cell is not barred for Rel-15 UEs then the cell cannot be considered CAG-only, as we do not meet the SA1/SA2 requirements.

Proposal 11: No enhancement in Rel-16 to include NID/CAG ID or network type indicator along with the inter-frequency carrier info in SIB4.

* Agreed

Agreements via email (from first round of [117][PRN]):

2.1 When a cell broadcasts any CAG IDs or NIDs, NPN-capable Rel-16 UE can treat the cell with cellReservedForOtherUse = true as a candidate during cell selection and cell reselection.

3.2 For CAG-capable Rel-16 UE, emergency calls in a CAG-only cell can be supported by setting *cellReservedForOtherUse=true* and allowing the Rel-16 Ues to ignore this flag and access the PLMNs in the NPN list in limited service state.

4.1 For unlicensed spectrum and a UE in SNPN AM, 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.

4.3 UE in SNPN AMdoes not ignore *intraFreqReselection* broadcast by a SNPN cell in licensed spectrum.

5.2 UE not in SNPN AMdoes not ignore *intraFreqReselection* broadcast by a CAG cell in licensed spectrum.

8. High quality criteria is not considered for SNPNs in Rel-16.

10. CAG-capable UE is not allowed to reselect to a CAG member cell ignoring highest ranked cell or best cell acc. To absolute priority reselection rules

11. No enhancement in Rel-16 to include NID/CAG ID or network type indicator along with the inter-frequency carrier info in SIB4.

[R2-2001697](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001697.zip) offline discussion 117: [PRN] Cell Selection and selection - Final status Qualcomm discussion Rel-16 NG\_RAN\_PRN -Core

Following proposals which are reworded versions of proposals in Section 3 are expected to have full consensus.

Proposal 5.4-Wayforward-U: For unlicensed spectrum and for a UE with non-empty allowed CAG list, if the highest ranked cell or best cell according to absolute priority reselection rules is a CAG cell which is not suitable due to not being a CAG member cell, the UE shall not consider this cell as candidate for cell reselection but should continue considering other cells on the same frequency for cell reselection. It is FFS whether “should continue considering” or “shall continue considering”.

* Ericsson thinks that this proposal goes beyond what we have for NR-U. In NR-U the UE is only allowed to select other intra-frequency cells if the highest ranked cell belongs to a different operator. However, according to the above proposal the UE is also allowed to select other intra-frequency cell if the highest ranked cell belongs to the correct operator but it’s not a CAG member cell. To make the proposal agreeable to everyone we suggest to rewrite it like this: "Proposal 5.4-Wayforward-U: for unlicensed spectrum and for a UE with non-empty allowed CAG list, 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 selected/registered/equivalent PLMN, the UE shall not consider this cell as candidate for cell reselection but should continue considering other cells on the same frequency for cell reselection. It is FFS whether “should continue considering” or “shall continue considering”. Then we can leave it as FFS how to handle the case when the cell belongs to the correct operator but it’s not a CAG member cell.
* To be discussed online
* QC thinks another way to add FFS is whether this behaviour applies only when the cell does not belong to registered, selected or equivalent PLMN

Proposal 9-Wayforward: If the cell broadcast multiple CAG identities, CAG identities associated to the same PLMN identity is listed in the same cag-IdentityList in the cell.

* Agreed

Agreements via email (from second round of [117][PRN]):

1. If the cell broadcast multiple CAG identities, CAG identities associated to the same PLMN identity is listed in the same cag-IdentityList in the cell

Agreements online:

1. FFS whether PCI values for CAGs are signalled per PLMN per frequency or no new ASN.1 IEs are introduced in Rel-16 for signalling of PCI values for CAGs
   1. For unlicensed spectrum and for a UE with non-empty allowed CAG list, 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 selected/registered/equivalent PLMN, the UE with no empty allowed CAG list shall behave according to NR-U agreement. FFS how to handle the case when the cell belongs to the correct operator but it’s not a CAG member cell. (We might come back to this if serious concerns / problems are found with this)
2. Definition for NPN-only cell: A cell that is only available for normal service for NPNs’ subscriber. From a UE point of view this is determined by detecting the setting of the cellReservedForOtherUse IE to true while the npn-IdentityInfoList-r16 IE is present in CellAccessRelatedInfo (this only applies for Rel-16 and later NPN-capable UEs)

Following proposals have almost full consensus.

Proposal 1-Wayforward:

A. RAN2 confirms that one of the following options is used for signalling of PCI values for CAGs:

1. PCI values for CAGs are signalled per PLMN per frequency. FFS whether per CAG-ID signalling is allowed. PCI values are signalled as a list of ranges.

2. No new ASN.1 IEs are introduced in Rel-16 for signalling of PCI values for CAGs.

B. RAN2 should select one option from above.

Proposal 6.3-Wayforward: RAN2 should either agree the following or postpone the discussion of the issue: For RRC\_IDLE/RRC\_INACTIVE UE in manual CAG/SNPN mode, UE AS informs the NAS if UE AS can’t search for an acceptable or suitable cell belonging to the selected CAG/SNPN.

* Samsung thinks we can postpone this
* Postponed

Proposal 7-Wayforward: RAN2 either postpones discussion of definition for NPN-only cell or agrees to the following as a working assumption: A cell that is only available for NPNs’ subscriber. This is indicated by setting the cellReservedForOtherUse IE to true while the npn-IdentityInfoList-r16 IE is present in CellAccessRelatedInfo.

* CATT thinks that RAN2 has agreed that access attempts by Rel-15 UEs for emergency services on CAG-only cells is possible, that means cellReservedForOtherUse can be false for CAG-only cell. If NPN-only cell is defined with setting the cellReservedForOtherUse IE to true, then the definition of NPN-Only cell will conflict with the RAN2 agreement. As it seems there is not a good way for definition of NPN-only cell right now, maybe we can adopt a general definition for NPN-only cell to facilitate other descriptions in RRC spec and then consider a more complete definition further.
* As a general comment, Nokia thinks that there are a number of proposals that are related to the topic whether a non-best cell can be selected by the UE. For licensed NR (and LTE) there is clear agreement that using the non-best cell should be avoided as it may create high level of interference. For the sake of simplicity we could follow the agreements made for PLMNs with NPNs in Rel-16, and later we can discuss whether there is a possibility to further optimize the UE behavior for NPNs.

Key open issues.

Proposal 2.2-Wayforward: RAN2 to select between the two:

1. Identify following as an open issue to be resolved in next meeting: FFS whether non-NPN-capable Rel-16 UE treats a cell with cellReservedForOtherUse = true as barred or not.

2. When a cell broadcasts any CAG IDs or NIDs, non-NPN-capable Rel-16 UE can treat the cell with cellReservedForOtherUse = true NOT as barred.

* Postponed

Proposal 4.2-Wayforward: RAN2 should either agree the following or postpone the discussion of the issue:

For licensed spectrum and a UE in SNPN AM, 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, UE uses Rel-15 behavior of NOT considering other cells on the same frequency for a maximum of 300 seconds.

* Huawei thinks that for PLMN, one frequency is often exclusively used by one operator, so if the highest ranked cell belongs to an unsuitable PLMN (being part of the "list of 5GS forbidden TAs for roaming" or belonging to a PLMN which is not indicated as being equivalent to the registered PLMN), it is reasonable to exclude all cells on the frequency. However, for SNPN, the frequency could be shared by PLMN cells and SNPN cells. If the highest ranked cell is not suitable due to unmatched SNPN ID, the UE should still be allowed to access the PLMN cells on the frequency. So we prefer not to exclude all cells on the frequency.

Proposal 5.4-Wayforward-L: RAN2 should either agree the following or postpone the discussion of the issue: for licensed spectrum and for a UE with non-empty allowed CAG list, if the highest ranked cell or best cell according to absolute priority reselection rules is a CAG cell which is not suitable due to not being a CAG member cell, UE uses Rel-15 behavior of NOT considering other cells on the same frequency for a maximum of 300 seconds. FFS whether enhancements for network control are needed.

Proposal 6.2-Wayforward: RAN2 should discuss if the following issue can be postponed: After performing access on the manual selected CAG, which one of following two UE behaviours is used:

a. UE reselects a cell belong to allowed CAG list.

b. UE shall prioritize to reselect a cell supporting selected CAG ID, but also can consider cells belonging to allowed CAG list in case that cells supporting selected CAG ID is not available.

- CATT thinks that instead of just postponing it, RAN2 should discuss the possibility on sending LS  to SA2/CT1 for a clarification: 1. Should we prioritize manually selected CAG ID in UE mobility, including cell selection/reselection in idle/inactive and handover in connected mode? 2. If SA2 clarify that manually selected CAG ID does not need to be prioritize in UE mobility, we would like to know further about the purpose of the feature “manual CAG selection”.

Other open issues

Discussion of the following proposals can be postponed.

Proposal 3.1-Wayforward: Though there are no strong objections to this proposal, discussion of the following is proposed to be postponed so other issues regarding emergency calls can be discussed first: emergency call is possible using the following for any Rel-16 UE on a cell that provides normal services only to UEs accessing CAGs: by setting cellReservedForOtherUse = false and if a PLMN ID without CAG list is broadcast and that PLMN is "not allowed" (e.g. by use of PLMN ID for which all registration attempts are rejected such that the PLMN ID becomes not allowed).

Proposal 5.1-Wayforward: Discussion of the following is postponed: UE shall perform ranking of all cells that fulfil the cell selection criterion S, which is defined in 5.2.3.2, but may exclude CAG cells that are known by the UE not to be CAG member cells.

Proposal 6.1-Wayforward: Discussion of the following is postponed: AS and NAS operate as discussed below during manual CAG selection:

1. #1. As part of AS-NAS interface, NAS optionally provides AS with allowed CAG list.

2. #2. Upon triggering of manual CAG selection by NAS, AS scans all carrier frequencies and obtains PLMNs and CAG IDs broadcast by found cells. Note that UE does not take allowed CAG list into account in this step.

3. #3. AS provides the found PLMNs and CAGs to NAS, and optionally the associated HRNN if provided by NG-RAN.

4. #4. NAS selects a CAG ID and provides AS with the selected CAG ID (and the selected CAG ID can be in or out of allowed CAG list optionally provided before).

5. #5. With cell selection, the UE select a cell belonging to the selected PLMN and the selected CAG ID. Note that UE does not take allowed CAG list into account in this step. UE is allowed to access a cell which fulfils the cell selection criteria and is not barred or reserved for operator use for UEs not belonging to Access Identities 11 or 15 and inform NAS that access is possible (for location registration procedure).

The following papers are covered by the summary document(s) and then noted

[R2-2000003](file:///C:\Data\3GPP\Extracts\R2-2000003%20Access%20Control%20about%20NPN.docx) Access Control about NPN CATT discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2000004](file:///C:\Data\3GPP\Extracts\R2-2000004%20Idle%20and%20Inactive%20Open%20Issues%20for%20NPN.docx) Idle and Inactive Open Issues for NPN CATT discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2000132](file:///C:\Data\3GPP\Extracts\R2-2000132%20-%20Support%20of%20emergency%20calls%20in%20NPN-only%20cells.docx) Support of emergency calls in NPN-only cells Ericsson discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2000357](file:///C:\Data\3GPP\Extracts\R2-2000357.docx) Remaining issues on the cell reselection ZTE Corporation, Sanechips discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2000400](file:///C:\Data\3GPP\Extracts\R2-2000400-NPNRRC-EditorsNotes.docx) Proposals on Editor’s Notes of running RRC CR Nokia, Nokia Shanghai Bell discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2000402](file:///C:\Data\3GPP\Extracts\R2-2000402-NPN-IdleModeIssues.docx) Handling of selected CAG ID in Idle/Inactive mode Nokia, Nokia Shanghai Bell discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2000829](file:///C:\Data\3GPP\Extracts\R2-2000829_PCI%20range.docx) Blacklist/whitelist for PCI range signaling and stage-3 details Sony discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001035](file:///C:\Data\3GPP\RAN2\Docs\R2-2001035.zip) Introducing the support of Non-Public Networks Nokia (Rapporteur) CR Rel-16 38.331 15.8.0 1468 - B NG\_RAN\_PRN-Core

* Noted

[R2-2001170](file:///C:\Data\3GPP\Extracts\R2-2001170-MobilityIssue_v00.docx) Remaining mobility issues for idle mode and connected mode Intel Corporation discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001174](file:///C:\Data\3GPP\Extracts\R2-2001174_NPN_open_issues_38304_spec.doc) Open issues in the specification of NPN in TS 38.304 Lenovo, Motorola Mobility discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001376](file:///C:\Data\3GPP\Extracts\R2-2001376%20General%20considerations%20on%20idle%20and%20inactive%20mode%20for%20NPN.DOC) General considerations on idle and inactive mode for NPN Huawei, HiSilicon discussion Rel-16 NG\_RAN\_PRN

* Noted

[R2-2001423](file:///C:\Data\3GPP\Extracts\R2-2001423%20Signalling%20Design%20on%20the%20PCI%20Range.docx) Signalling Design on the PCI Range CMCC discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001424](file:///C:\Data\3GPP\Extracts\R2-2001424%20TP%20on%20NPN%20Running%20RRC%20for%20PCI%20list%20of%20PRN%20Cells.docx) TP on NPN Running RRC for PCI list of PRN Cells CMCC discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001526](file:///C:\Data\3GPP\Extracts\R2-2001526%20Resolving%20miscellaneous%20open%20issues.docx) Resolving miscellaneous issues LG Electronics France discussion NG\_RAN\_PRN-Core

* Noted

[R2-2001527](file:///C:\Data\3GPP\Extracts\R2-2001527%20High%20Quality%20Criterion%20for%20SNPN.docx) High Quality Criterion for SNPN LG Electronics France discussion NG\_RAN\_PRN-Core

* Noted

[R2-2001528](file:///C:\Data\3GPP\Extracts\R2-2001528%20Manual%20CAG%20selection.docx) Manual CAG selection LG Electronics France discussion NG\_RAN\_PRN-Core

* Noted

The following document is withdrawn

R2-2000399 Support for Non-Public Networks Nokia (Rapporteur) draftCR Rel-16 38.331 15.8.0 NG\_RAN\_PRN-Core [R2-1915388](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1915388.zip) Withdrawn

### 6.18.3 Connected mode aspects

Connected mode specific aspects, also including CAG ID transmission related issues (e.g. inclusion of CAG ID during Resume, etc).

A summary document will also be utilized to treat this agenda item (Nokia).

The following paper will be handled during the first web conference call

[R2-2001674](file:///C:\Data\3GPP\Extracts\R2-2001674%20SummaryPRN-ConnectedMode-v3.docx) Summary of [PRN] Connected mode aspects Nokia discussion Rel-16 NG\_RAN\_PRN -Core

Proposal 3.1: There is no need to include CAG ID in RRCResumeComplete message for UE in automatic CAG selection mode.

1. Ericsson/Nokia think we could agree on this also for manual CAG selection mode.
2. Lenovo thinks the problem is that with manual CAG selection the CAG ID could be a not allowed one and it could make sense to send it via AS.

Agreements:

1. For cells shared between PLMNs and NPNs, non-NPN capable UEs use the first PLMN ID in the Rel-15 PLMN list for the SIB validity check.
2. To index NPNs, build on the existing plmn-IdentityIndex (to avoid ASN.1 changes other than in SIB1).
3. In RAN sharing scenarios, the lowest index values belong to the PLMNs (using legacy indexing) and the highest index values belong to NPNs.
4. Add a condition that NPN-only cell generating NPN-indexes (for PNI-NPNs and SNPNs) shall count the PLMN-index part as zero.
5. There is no need to include CAG ID in RRCResumeComplete message for UE in automatic CAG selection mode.

FFS:

1. Whether the selectedPLMN-Identity can refer to a NPN in the description of RRCSetupComplete RRCResumComplete messages and the relevant procedures.

* Proposals not concluded online are moved to offline email discussion
* [AT109e][118][PRN] Connected mode aspects (Nokia)

Scope: Continue the discussion on connected mode aspects, trying to conclude on proposals from [R2-2001674](file:///C:\Data\3GPP\Extracts\R2-2001674%20SummaryPRN-ConnectedMode-v3.docx) not concluded online.

Initial intended outcome:

* + - Initial set of proposals with full consensus (agreeable over email) in [R2-2001681](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001681.zip)

Initial intermediate deadline (for companies' feedback): Thursday 2020-02-27 23:59 CET

Initial intermediate deadline (for rapporteur's list of proposals): Friday 2020-02-28 12:00 CET

Proposed agreements in [R2-2001681](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001681.zip) not challenged until Monday 2020-03-02 12:00 CET will be declared as agreed by the session chair.

Final intended outcome: summary of the offline discussion in [R2-2001698](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001698.zip) with e.g.:

* + - (Further) set of proposals with full consensus, if any (agreeable over email)
    - Set of proposals with almost full consensus to discuss in the follow up conference call
    - Set of open issues and proposals to postpone to next meeting
    - Open issues that should no longer be pursued

Final deadline (for companies' feedback): Monday 2020-03-02 23:59 CET

Final deadline (for rapporteur's summary): Tuesday 2020-03-03 12:00 CET

Proposed agreements in [R2-2001698](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001698.zip) not challenged until Tuesday 2020-03-03 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

[R2-2001681](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001681.zip) offline discussion 118: [PRN] Connected mode aspects - Intermediate status Nokia discussion Rel-16 NG\_RAN\_PRN -Core

Proposals with full consensus

Proposal 4.1: Extend the current measurement reporting procedures to include NPN information to support ANR. (It is FFS if it is mandatory for all Rel-16 UEs to support it.)

* Agreed

Proposal 4.2: The CAG ID/SNPN NID information shall be added into the CGI-InfoNR. (It is FFS if it is mandatory for all Rel-16 UEs to support it.)

* Agreed

Agreements via email from first round of [118][PRN]):

4.1: Extend the current measurement reporting procedures to include NPN information to support ANR. (It is FFS if it is mandatory for all Rel-16 UEs to support it.)

4.2: The CAG ID/SNPN NID information shall be added into the CGI-InfoNR. (It is FFS if it is mandatory for all Rel-16 UEs to support it.)

[R2-2001698](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001698.zip) offline discussion 118: [PRN] Connected mode aspects - Final status Nokia discussion Rel-16 NG\_RAN\_PRN -Core

Proposals to be agreed during the email review:

Proposal 1.1: For NPN-only cells, the first NPN ID (PLMN ID and NID or PLMN ID and CAG ID) is used for the SIB validity check by NPN capable UEs.

* Agreed

Proposal 2.1: There is no need to create any order between SNPNs and PNI-NPNs during the indexing.

* Agreed

Proposal 4.3: There is no necessary of the CAG-UE to report the MemberStatus and corresponding identity of reported cell acquired from system information in the measurement report message as what the LTE CSG-UEs execute.

* Agreed

Proposal 5.1: Normal network controlled mobility procedure can apply for a UE leaving a CAG cell in connected mode.

* Agreed

Agreements via email from second round of [118][PRN]):

* 1. For NPN-only cells, the first NPN ID (PLMN ID and NID or PLMN ID and CAG ID) is used for the SIB validity check by NPN capable UEs.

2.1 There is no need to create any order between SNPNs and PNI-NPNs during the indexing.

4.3 There is no need for the CAG-UE to report the MemberStatus and corresponding identity of reported cell acquired from system information in the measurement report message as what the LTE CSG-UEs execute.

5.1 Normal network controlled mobility procedure can apply for a UE leaving a CAG cell in connected mode.

Agreements online:

* 1. For cells shared between PLMNs and NPNs, NPN capable UEs use the first PLMN ID in the Rel-15 PLMN list.

3.1 The selectedPLMN-Identity can refer to a NPN (a SNPN or a PNI-NPN) or set of PNI-NPNs having the same PLMN ID (in case CAG ID is not sent in the RRC message) in the description of RRCSetupComplete message and the relevant procedures.

Proposals to be discussed online:

Proposal 1.2: For cells shared between PLMNs and NPNs, NPN capable UEs use the first PLMN ID in the Rel-15 PLMN list.

* Huawei suggests the following revision: For cells shared between PLMNs and NPNs, NPN capable UEs use the first NPN ID in the Rel-15 PLMN list.

Proposal 3.1: The selectedPLMN-Identity can refer to a NPN (a SNPN or a PNI-NPN) or set of PNI-NPNs having the same PLMN ID (in case CAG ID is not sent in the RRC message) in the description of RRCSetupComplete RRCResumComplete messages and the relevant procedures.

* Intel thinks this seems to contradict the following agreement: "For SNPN, there is no need to include SNPN ID in the RRCResumeComplete message since the UE context is known to the network": maybe it is good to make this clear that selectedPLMN-Identity is not used in RRCResumeComplete for SNPN in this release.

Proposal 3.3: There is no need to include CAG ID in RRCResumeComplete message for UE in manual CAG selection mode.

* CATT thinks that Proposal 3.3 depends on the conclusion of Open issue 2 (Q3.2), It is better to make a decision on Proposal 3.3 after the Open issue 2 (Q3.2) is concluded. And for Open issue 2 (Q3.2), “manual CAG selection” is a feature defined in NAS, so it is the SA2/CT1’s responsibility to clarify the functionality of manual CAG selection including the role of manually selected CAG ID in UE mobility in RRC\_CONNECTED state.
* Send an LS to SA2/CT1 asking questions for clarifications on manual CAG selection. Discuss wording offline
* [AT109e][122][PRN] LS to SA1/SA2/CT1 (Nokia)

Scope: Agree questions for clarifications to SA2/CT1 on manual CAG selection and to SA1/SA2/CT1 on UAC parameters for CAG

Intended outcome: LS to SA1/SA2/CT1

Deadline: Thursday 2020-02-05

R2-2001704 Draft LS on CAG issues Nokia LS out Rel-16 NG\_RAN\_PRN-Core To:SA1, SA2, CT1

Open issues and proposals to postpone to next meeting

Open Issue 1 (Q2.2 and Q3.2): Indexing of PNI-NPNs

PNI-NPNs having the same PLMN ID are considered

• Option A: separate networks when indexing (i.e. they will have their own index values).

• Option B: single network when indexing (i.e. they will have a common single index value).

It should also be discussed which network index value should be used in RRC messages for PNI-NPNs. The related proposal is the following:

“When there is no need to send the selected CAG ID in the RRC message (this disclaimer intends to make this agreement independent from the agreement whether CAG ID is sent or not sent to the network in some RRC messages), the UE shall use the smallest PLMN/NPN index value that refers to PLMN or PNI-NPN that has the same PLMN identity as the selected PNI-NPN in the RRCSetupComplete and RRCResumComplete messages interpedently from the selected CAG ID.)”

Open issue 2 (Q3.3): UE in manual CAG selection mode shall only stay on cell supporting the selected CAG ID in RRC\_CONNECTED state”

Open issue 3 (Q4.1 and Q4.2): Whether the support of the extension of measurement reporting procedures and CGI-InfoNR to include NPN information is mandatory for all Rel-16 UEs.

Issues that should no longer be pursued

Issue 1 (Q4.4): Introduction of a new indicator whether to include the npn-IdentityInfoList in the reportCGI field.

The following papers are covered by the summary document(s) and then noted

[R2-2000005](file:///C:\Data\3GPP\Extracts\R2-2000005%20Connected%20Mode%20Open%20Issues%20for%20NPN.docx) Connected Mode Open Issues for NPN CATT discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2000358](file:///C:\Data\3GPP\Extracts\R2-2000358.docx) Consideration on the remaining Connected State Issues ZTE Corporation, Sanechips discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2000401](file:///C:\Data\3GPP\Extracts\R2-2000401-NPNRRC-OpenIssues.docx) Proposals on open RRC issues Nokia, Nokia Shanghai Bell discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001071](file:///C:\Data\3GPP\Extracts\R2-2001071%20Discussion%20on%20the%20proximity%20indication%20in%20connected%20mode.docx) Discussion on the proximity indication in connected mode vivo discussion [R2-1916098](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1916098.zip)

* Noted

[R2-2001377](file:///C:\Data\3GPP\Extracts\R2-2001377%20General%20considerations%20on%20connected%20mode%20for%20NPN.DOC) General considerations on connected mode for NPN Huawei, HiSilicon, China Telecom discussion Rel-16 NG\_RAN\_PRN

* Noted

[R2-2001430](file:///C:\Data\3GPP\Extracts\R2-2001430%20Access%20and%20mobility%20control%20for%20NPN.docx) Access and mobility control for NPN CMCC discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001572](file:///C:\Data\3GPP\Extracts\R2-2001572_Transfer%20of%20NPN%20ID%20in%20RRC%20connection%20establishment.doc) Transfer of NPN ID in RRC connection establishment Samsung Electronics Co., Ltd discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001573](file:///C:\Data\3GPP\Extracts\R2-2001573_Discussion%20on%20ANR%20for%20NPN.doc) Discussion on ANR for NPN Samsung Electronics Co., Ltd discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001586](file:///C:\Data\3GPP\Extracts\R2-2001586%20Remaining%20issues%20discussion%20on%20NPN.doc) Remaining issues discussion on NPN China Telecom discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

### 6.18.4 Other

Including HRNN (Human Readable Name) aspects and common idle and connected mode aspects (e.g. access control, etc.)

A summary document will also be utilized to treat this agenda item (ZTE).

The following paper will tentatively be handled during the first web conference call

[R2-2001675](file:///C:\Data\3GPP\Extracts\R2-2001675%20Summary%20of%20%5bPRN%5d%20Other%20(HRNN,%20Access%20Control,%20etc)%20v1.docx) Summary of [PRN] Other (HRNN, Access Control, etc) ZTE Corporation discussion Rel-16 NG\_RAN\_PRN -Core

* Proposals are moved to offline email discussion
* [AT109e][119][PRN] HRNN and Access Control aspects (ZTE)

Scope: Discuss the proposals from [R2-2001675](file:///C:\Data\3GPP\Extracts\R2-2001675%20Summary%20of%20%5bPRN%5d%20Other%20(HRNN,%20Access%20Control,%20etc)%20v1.docx).

Initial intended outcome:

* + - Initial set of proposals with full consensus (agreeable over email) in [R2-2001682](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001682.zip)

Initial intermediate deadline (for companies' feedback): Thursday 2020-02-27 23:59 CET

Initial intermediate deadline (for rapporteur's list of proposals): Friday 2020-02-28 12:00 CET

Proposed agreements in [R2-2001682](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001682.zip) not challenged until Monday 2020-03-02 12:00 CET will be declared as agreed by the session chair.

Final intended outcome: summary of the offline discussion in [R2-2001699](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001699.zip) with e.g.:

* + - (Further) set of proposals with full consensus, if any (agreeable over email)
    - Set of proposals with almost full consensus to discuss in the follow up conference call
    - Set of open issues and proposals to postpone to next meeting
    - Open issues that should no longer be pursued

Final deadline (for companies' feedback): Monday 2020-03-02 23:59 CET

Final deadline (for rapporteur's summary): Tuesday 2020-03-03 12:00 CET

Proposed agreements in [R2-2001699](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001699.zip) not challenged until Tuesday 2020-03-03 23:59 CET will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

[R2-2001682](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001682.zip) offline discussion 119: [PRN] HRNN and Access Control aspects - Intermediate status ZTECorporation discussion Rel-16 NG\_RAN\_PRN -Core

Following proposals had unanimous support in previous discussion.

Proposal1a: HRNN is broadcast in a new SIB.

* Agreed

Proposal3a: The UAC parameters should be configured per SNPN.

* Agreed

Proposal3b: The UAC parameters per SNPN are configured by reusing the existing uac-BarringPerPLMN-List.

* Agreed

Proposals that had support from significant majority.

Proposal 1b: Associate the HRNN and the Network ID implicitly. The SIB for HRNN shall have the same amount of HRNN elements as the number of CAGs and NIDs in SIB1. These elements can also be absent.

* Agreed

Proposal 1c: ASN.1 in Proposal 1c in R2-2001682 can be taken as a baseline.

* Agreed

Proposal 2: The UAC parameters for CAG should be configured per PLMN by reusing the existing fields, which means NW may only configure different uac-ImplicitACBarringList / uac-ExplicitACBarringList for different PLMNs. For CAGs associated with the same PLMN ID, the same uac-ImplicitACBarringList / uac-ExplicitACBarringList applies.

1. Nokia does not agree: if there is no way to have CAG ID specific UAC parameters, then we do not see a clear way for operators to prioritize/control access attempts in case of a congestion. Therefore we would like to postpone the decision on this proposal.

Agreements via email (from first round of [119][PRN]):

1a. HRNN is broadcast in a new SIB.

1b. Associate the HRNN and the Network ID implicitly. The SIB for HRNN shall have the same amount of HRNN elements as the number of CAGs and NIDs in SIB1. These elements can also be absent.

1c. ASN.1 in Proposal 1c in R2-2001682 can be taken as a baseline.

3. The UAC parameters per SNPN are configured by reusing the existing uac-BarringPerPLMN-List.

3a. The UAC parameters should be configured per SNPN.

[R2-2001699](file:///C:\Data\3GPP\RAN2\Inbox\R2-2001699.zip) offline discussion 119: [PRN] HRNN and Access Control aspects - Intermediate status ZTECorporation discussion Rel-16 NG\_RAN\_PRN -Core

Proposal with almost full consensus:

Proposal 2: The UAC parameters for CAG should be configured per PLMN by reusing the existing fields, which means NW may only configure different uac-ImplicitACBarringList / uac-ExplicitACBarringList for different PLMNs. For CAGs associated with the same PLMN ID, the same uac-ImplicitACBarringList / uac-ExplicitACBarringList applies.

* Nokia does not agree: If there is no way to have CAG ID specific UAC parameters, then we do not see a clear way for operators to prioritize/control access attempts in case of a congestion.
* Vodafone also does not agree: Having a ‘coarse’ PLMN control is not workable and we definitely need finer CAG level control for closed access groups.
* To be discussed online
* Ericsson thinks it’s still possible to have different barring for different slices.
* Intel thinks it's possible to do what Vodafone wants still having per PLMN configuration
* Add questions for this to the LS to SA2/SA1/CT1

The following papers are covered by the summary document(s) and then noted

[R2-2000130](file:///C:\Data\3GPP\Extracts\R2-2000130%20-%20Remaining%20RRC%20aspects%20of%20NPN.docx) Remaining RRC aspects of NPN Ericsson discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2000131](file:///C:\Data\3GPP\Extracts\R2-2000131%20-%20dCR38331%20-%20Remaining%20RRC%20aspects%20of%20NPN.docx) Remaining RRC aspects of NPN Ericsson draftCR Rel-16 38.331 15.8.0 B NG\_RAN\_PRN-Core

* Noted

[R2-2000668](file:///C:\Data\3GPP\Extracts\R2-2000668.docx) Consideration on the HRNN and Access control ZTE Corporation, Sanechips, Qualcomm Inc discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001072](file:///C:\Data\3GPP\Extracts\R2-2001072%20Consideration%20on%20fixed%20MCC%20for%20SNPN.docx) Consideration on fixed MCC for SNPN vivo discussion [R2-1916097](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_108\Docs\R2-1916097.zip)

* Noted

[R2-2001155](file:///C:\Data\3GPP\Extracts\R2-2001155_UE_initiated_change_NPN_config.doc) UE-initiated change of NPN UE configuration Lenovo, Motorola Mobility discussion NG\_RAN\_PRN-Core

* Noted

[R2-2001169](file:///C:\Data\3GPP\Extracts\R2-2001169-UAC_v03.docx) Network indexing for UAC and Connection Control Intel Corporation discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001378](file:///C:\Data\3GPP\Extracts\R2-2001378%20Considerations%20on%20SI%20Validity%20Checking.doc) Considerations on SI Validity Checking Huawei, HiSilicon discussion Rel-16 NG\_RAN\_PRN

* Noted

[R2-2001585](file:///C:\Data\3GPP\Extracts\R2-2001585%20Discussion%20on%20human-readable%20network%20name.doc) Discussion on human-readable network name China Telecom, Huawei, HiSilicon discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

[R2-2001587](file:///C:\Data\3GPP\Extracts\R2-2001587%20Discussion%20on%20the%20deployment%20for%20CAG.DOC) Discussion on the deployment for CAG China Telecom, Huawei, HiSilicon discussion Rel-16 NG\_RAN\_PRN-Core

* Noted

## Summary

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