3GPP TSG-RAN WG2 Meeting #112 electronic [R2-2010701](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010701.zip)

Online, 02 – 13 November 2020

**Agenda item: 10.1**

**Source: Vice Chairman (Nokia)**

**Title:** **Report on LTE legacy, Mobility, DCCA, Multi-SIM and RAN slicing**

**Document for: Approval**

# Organizational

**List of offline email discussions:**

**NOTE: the email discussion deadlines are meant to allow at least all regions to have one day to comment (other than weekend) and also give rapporteurs time to update their proposals before the meeting)**

**Organizational**

* [AT112-e][200] Organizational Tero – LTE legacy, LTE Rel-16 and LTE/NR mobility

Scope:

* + - Share plans for the meetings and list of ongoing email discussions for the sessions
    - Share meetings notes and agreements for review and endorsement
    - Flag LSs for presentation (where applicable)

Intended outcome (for LS discussion):

* + - General information sharing about the sessions

Deadline for providing comments to LSs:

* + - Deadline: EOM

**LTE Legacy** **(kicked off on Monday Nov 2nd)**

* [AT112-e][201][LTE] LTE Miscellaneous corrections (RAN2 VC)

Scope:

* + - Discuss the CRs under AI 4.5, 7.1.X and 7.5 marked for this email discussion

Intended outcome:

* + - Discussion summary in [R2-2010710](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010710.zip) (by email rapporteur)
    - Agreeable CRs by proponents (if revised versions are required, proponents should obtain Tdoc numbers from session chair or RAN2 secretary to provide those)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010710](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010710.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000
* [AT112-e][202][LTE] LTE editorial corrections (RAN2 VC)

Scope:

* + - Discuss the CRs under AI 4.5, 7.1.X and 7.5 marked for this email discussion

Intended outcome:

* + - Discussion summary in [R2-2010711](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010711.zip) (by email rapporteur)
    - Agreeable CRs for 36.300, 36.306 and 36.331 (if any) by specification rapporteurs (after online session)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010711](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010711.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000
* [AT112-e][203][LTE] LTE corrections related to RLC out-of-order delivery (Samsung)

Scope:

* + - Discuss the CRs under AI 4.5 related to the RLC out-of-order delivery that are marked for this email discussion to determine which changes are acceptable

Intended outcome:

* + - Discussion summary in [R2-2010714](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010714.zip) (by email rapporteur), agreeable CRs (Tdoc numbers can be obtained from session chair if needed)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010714](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010714.zip)): 2nd week Mon, UTC 13:00

**LTE Legacy (kicked off on Wednesday Nov 4th)**

* [AT112-e][204][LTE] LTE corrections to TDD/FDD capability differentiation (Huawei)

Scope:

* + - Progress the revisions to [R2-2009921](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009921.zip) and [R2-2009922](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009922.zip) based on RAN1 LS [R2-2011001](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2011001.zip)

Intended outcome:

* + - Revised CRs in [R2-2010735](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010735.zip) (Rel-15, 36.331) and [R2-2010736](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010736.zip) (Rel-16, 36.331)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 2nd week Mon, UTC 13:00
    - Initial deadline (for revised CRs): 2nd week Tue, UTC 13:00

**LTE Legacy (kicked off after online session)**

**TBD**

**LTE Rel-16 (kicked off after online session)**

**TBD**

**LTE/NR Mobility (to be kicked off on Monday Nov 2nd)**

* [AT112-e][210][MOB] Stage-2 corrections (Nokia)

Scope:

* + - Discuss which mobility WI - related Stage-2 corrections (for LTE, MR-DC and NR) are seen necessary

Intended outcome:

* + - Discussion summary in [R2-2010715](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010715.zip) (by email rapporteur).
    - Merged CRs to 36.300 ([R2-2010716](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010716.zip)), 38.300 ([R2-2010717](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010717.zip)) and 37.340 ([R2-2010718](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010718.zip)) (if any)

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010715](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010715.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000
* [AT112-e][211][MOB] CHO/CPC RRC corrections (Intel)

Scope:

* + - Discuss which CHO/CPC corrections for 36.331/38.331 are seen necessary and provide merged CRs with agreeable corrections (if any)

Intended outcome:

* + - Discussion summary in [R2-2010719](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010719.zip) (by email rapporteur).
    - Merged CRs to 36.331 ([R2-2010720](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010720.zip)) and 38.331 ([R2-2010721](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010721.zip)) (if any)

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010719](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010719.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000
* [AT112-e][212][MOB] Mobility UE capabilities for LTE and NR (Huawei)

Scope:

* + - Discuss which UE capability corrections to LTE and NR are seen necessary and provide merged CRs with agreeable corrections (if any)

Intended outcome:

* + - Discussion summary in [R2-2010722](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010722.zip) (by email rapporteur).
    - Merged CRs to 36.306 ([R2-2010723](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010723.zip)), 36.331 ([R2-2010724](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010724.zip)), 38.306 ([R2-2010725](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010725.zip)) and 38.331 ([R2-2010726](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010726.zip)) (if any)

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010722](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010722.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000
* [AT112-e][213][MOB] DAPS RRC corrections (Ericsson)

Scope:

* + - Discuss which DAPS RRC corrections to LTE and NR are seen necessary and provide merged CRs with agreeable corrections (if any)

Intended outcome:

* + - Discussion summary in [R2-2010727](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010727.zip) (by email rapporteur).
    - Merged CRs to 36.331 ([R2-2010728](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010728.zip)) and 38.331 ([R2-2010729](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010729.zip)) (if any)

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010727](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010727.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000

**LTE/NR Mobility (to be kicked off after Friday Nov 6th online session)**

* [AT112-e][214][NR][MOB] Avoiding DAPS with multi-TRP/CA/DC (ZTE)

Scope:

* + - Discuss the CRs under AI 4.5, 7.1.X and 7.5 marked for this email discussion

Intended outcome:

* + - Agreeable Stage-2 CRs in [R2-2010748](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010748.zip) (38.300, revision of [R2-2009384](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009384.zip)) and [R2-2010747](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010747.zip) (36.300, revision of [R2-2009382](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009382.zip)),
    - Agreeable Stage-3 CRs in [R2-2010749](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010749.zip) (36.331, revision of [R2-2009769](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009769.zip)) and [R2-2010750](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010750.zip) (38.331, revision of [R2-2009383](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009383.zip))

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 2nd week Thu, UTC 1000
    - Deadline for CR finalization: 2nd week Thu, UTC 1700
* [AT112-e][215][NR][MOB] Additional clarification to DAPS capabilities (Nokia)

Scope:

* + - Discuss additional clarifications for DAPS capabilities as per minutes and capture them in CRs

Intended outcome:

* + - Endorsable CRs for [R2-2010751](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010751.zip) (38.306) and [R2-2010752](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010752.zip) (38.331) based on agreements and above clarifications (if needed)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 2nd week Thu, UTC 1000
    - Deadline for CR finalization: 2nd week Thu, UTC 1700

**LTE Mobility (only started after online session on Tuesday Nov 3rd)**

**TBD**

**NR Mobility (only started after online session on Tuesday Nov 3rd)**

**TBD**

**LTE/NR Rel-16 DCCA (to be kicked off on Monday Monday Nov 2nd)**

* [AT112-e][220][DCCA] Simple DCCA corrections (Ericsson)

Scope:

* + - Discuss DCCA corrections under 6.8.1/6.8.3/6.8.4/6.8.5 marked for the discussion to see which CRs could be agreeable

Intended outcome:

* + - Discussion summary in [R2-2010730](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010730.zip) (by email rapporteur).

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010730](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010730.zip)): 2nd week Mon, UTC 13:00
* [AT112-e][221][DCCA] Fast Scell activation and early measurements (Nokia)

Scope:

* + - Discuss corrections under 6.8.2/6.8.3 marked for this discussion to see which CRs could be agreeable

Intended outcome:

* + - Discussion summary in [R2-2010731](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010731.zip) (by email rapporteur).

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010731](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010731.zip)): 2nd week Mon, UTC 13:00
* [AT112-e][222][DCCA] Miscellaneous DCCA corrections and capabilities (Ericsson?)

Scope:

* + - Discuss DCCA corrections under 6.8.4 marked for this discussion to see which CRs could be agreeable

Intended outcome:

* + - Discussion summary in [R2-2010732](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010732.zip) (by email rapporteur).

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010732](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010732.zip)): 2nd week Mon, UTC 13:00

**LTE/NR Rel-16 DCCA (after 1st week online session)**

* [AT112-e][223][NR][DCCA] Stage-2 CRs for 37.340 (Nokia)

Scope:

* + - Merge content from [R2-2009548](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009548.zip) and agreeable parts of [R2-2010647](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010647.zip) based on discussion.

Intended outcome:

* + - Agreeable CR to 37.340 in [R2-2010742](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010742.zip) (revision of [R2-2009548](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009548.zip))

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 2nd week Wed, UTC 1100
* [AT112-e][224][NR][DCCA] CRs for unaligned CA (CMCC)

Scope:

* + - Merge content from [R2-2009548](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009548.zip) and agreeable parts of [R2-2010647](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010647.zip) based on discussion.

Intended outcome:

* + - Agreeable CRs to 38.331 in [R2-2010740](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010740.zip) (revision of [R2-2010379](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010379.zip)) and 38.306 in [R2-2010741](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010741.zip) (revision of [R2-2010380](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010380.zip))

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Final CRs: 2nd week Wed, UTC 1100
* [AT112-e][225][NR][DCCA] Correction on FR2 maximum power for NR-DC power control (vivo)

Scope:

* + - Provide CRs on FR2 power limit based on RAN4 LS abnd Tdocs [R2-2010291](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010291.zip), [R2-2010112](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010112.zip), and [R2-2010340](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010340.zip).

Intended outcome:

* + - Agreeable CRs to 38.331 in [R2-2010743](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010743.zip) (revision of [R2-2010291](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010291.zip))

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Final CRs: 2nd week Wed, UTC 1100
* [AT112-e][226][NR][DCCA] Capability for beam level NR early measurement reporting (MediaTek)

Scope:

* + - Merge content from CRs [R2-2009437](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009437.zip)/[R2-2009438](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009438.zip) and [R2-2010341](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010341.zip)/[R2-2010342](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010342.zip)

Intended outcome:

* + - Agreeable CRs to 36.331 in [R2-2010744](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010744.zip) (revision of [R2-2009437](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009437.zip)) and 36.306 in [R2-2010745](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010745.zip) (revision of [R2-2009438](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009438.zip))

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Final CRs: 2nd week Wed, UTC 1100
* [AT112-e][227][NR][DCCA] Remaining capability topics for DCCA (Ericsson)

Scope:

* + - Discuss DCCA corrections under 6.8.5 marked for the discussion to see which CRs could be agreeable. Can also consider RAN1 input (if any arrives on time).

Intended outcome:

* + - Discussion summary in [R2-2010746](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010746.zip) (by email rapporteur).

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 2nd week Tue, UTC 1000
    - Initial deadline (for rapporteur's summary in [R2-2010746](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010746.zip)): 2nd week Tue, UTC 14:00

**NR Rel-17 DCCA (only after online session)**

* [AT112-e][230][eDCCA] Progressing FFS points of efficient SCG activation and deactivation (Huawei)

Scope:

* + - Discuss the FFSs from online agreements for Efficient activation deactivation of SCG to understand which alternatives are seen feasible.
    - Can discuss also remaining FFS from email discussion [Post111-e][919] if time allows

Intended outcome:

* + - Discussion summary in [R2-2010733](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010733.zip) (by email rapporteur).

Deadlines:

* + - Rapporteur can set an intermediate deadline for company inputs and/or converging the discussion
    - Deadline for email discussion report: 2nd week Thu, UTC 1000
* [AT112-e][231][eDCCA] Progressing conditional reconfiguration for SN initiated inter-SN CPC (CATT)

Scope:

* + - Discuss the option 1 and option 3 details from P4 of email discussion [Post111-e][920] to better understand the technical details between the alternatives (e.g. signalling flows, signalling load, etc.)

Intended outcome:

* + - Discussion summary in [R2-2010734](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010734.zip) (by email rapporteur).

Deadlines:

* + - Rapporteur can set an intermediate deadline for company inputs and/or converging the discussion
    - Deadline for email discussion report: 2nd week Thu, UTC 1000

**NR Rel-17 RAN Slicing (only after online session)**

**TBA**

**NR Rel-17 Multi-SIM (only after online session)**

* [AT112-e][240][Multi-SIM] Reply LS to SA2 (Intel)

Scope:

* + - Draft LS reply to SA2 based on online agreements (can also include some analysis from email discussion)

Intended outcome:

* + - Discussion summary in [R2-2010737](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010737.zip) (by email rapporteur) and draft reply LS in [R2-2010738](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010738.zip).

Deadlines:

* + - Deadline for email discussion report: 2nd week Thu, UTC 1000
* [AT112-e][241][Multi-SIM] Network switching scenarios (vivo)

Scope:

* + - Discuss validity of scenario 3 and scenario 4 from the previous email disucssion

Intended outcome:

* + - Discussion summary in [R2-2010739](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010739.zip) (by email rapporteur).

Deadlines:

* + - Deadline for email discussion report: 2nd week Thu, UTC 1000

**Dates and deadlines**

Oct 22 23.59 PDT (Oct 23 06.59 UTC) Tdoc number allocation deadline for all tdocs (e.g. including summary tdocs).  
General Tdoc Submission Deadline, as usual. Kick off, summaries.

Oct 27 0700 UTC Tdocs submission deadline for Summaries (baseline version)

Nov 02 0700 UTC e-Meeting Start (by email) (Nov 03 0700 UTC is first possible email deadline).

Nov 06 1000 UTC Suspend decision making in email discussions (= no deadlines etc)

It should be possible for a delegate to take the weekend off, rejoin and not miss decisions.

Nov 09 1000 UTC Resume decision making in email discussions.

Nov 13 1100 UTC e-Meeting Stop, no more email comments for AT-meeting email discussions. Decision confirmations announced within 24h. Session notes for email checking.

Nov 20 1100 UTC Deadline Short Post112-e email approvals of documents for RP.

**Web Conference Schedule**

Note that this schedule is indicative and can change. Changes to the schedule will be announced with notice of at least 24h.

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| --- | --- | --- | --- |
| **Time Zone UTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
|  |  |  |  |
| 13:00 – 14:30 | General (opportunity for Questions if needed, short 10min)  NR16 [6.1.1]:SI acquisition Kick-off  NR15 CP (Johan) | NR16 2-step, PowSav (Diana) | NR16 V2X (Kyeognin) |
| 14:30 – 16:00 | NR17 DCCA FEnh (Tero) | NR16 NR-U, Including UE caps for unlicensed (Diana) | LTE16 and earlier IoT (Brian, Emre) |
| **Tuesday** |  |  |  |
| 13:00 – 14:30 | NR16 [6.1] General and UE caps kick-off (Johan)  NR16 [6.15][6.16] | NR17 NTN (Sergio) | NR16 and earlier Pos (Nathan) |
| 14:30 – 16:00 | NR16 IIOT (Johan) | NR16 L1 Centric (Sergio) | NR17 Pos SI (Nathan) |
| **Wednesd** |  |  |  |
| 13:00 – 14:30 | NR17 Multi-SIM (Tero) | NR17 Red Cap SI (Sergio) | NR17 SL Relay SI (Nathan) |
| 14:30 – 16:00 | NR16 IAB (Johan)  NR16 [6.1][6.15][6.16] | NR16 Other CP Centric (Sergio) | LTE17 IoT (Brian) |
| **Thursday** |  |  |  |
| 13:00 – 14:30 | NR16 DCCA (Tero) | NR17 Small Data Enh (Diana) | NR16 V2X, LTE 16 and earlier V2X SL (Kyeongin) |
| 14:30 – 16:00 | NR17 Multicast (Johan) | LTE16 and earlier IoT (Brian, Emre) | NR16 Pos (Nathan)  NR17 Pos SI (Nathan) (if time) |
| **Friday** |  |  |  |
| 04:30-06:00 | NR17 Multicast (Johan) | NR16 Mob, LTE16 Mob (Tero) | NR17 SON MDT (HuNan) |

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| --- | --- | --- | --- |
| **Time Zone UTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
| 14:00 – 15:30 | NR17 UE Power Saving (Johan) | NR17 RAN Slicing SI (Tero) | NR17 SL enh (Kyeongin) |
| 15:30 – 17:00 | NR16 General, UE caps, R4 items (Johan) | NR17 IIOT URLLC (Diana) | NR16 SON/MDT (HuNan) |
| **Tuesday** |  |  |  |
| 14:00 – 15:30 | LTE16 and earlier General (Tero) | NR17 NTN (Sergio) | Pos CB (Nathan) |
| 15:30 – 17:00 | NR16 DCCA (Tero)  NR16 MobEnh (Tero)  LTE16 MobEnh (Tero) | NR17 Small data + CB (Diana) | NR17 SL enh (Kyeongin) |
| **Wednesd** |  |  |  |
| 14:00 – 15:30 | NR17 IAB (Johan) | CB NR16 (Sergio) | LTE16 IoT (Emre, Brian) |
| 15:30 – 17:00 | CB (Johan) | NR16 2-step PowSav NR-U CB (Diana) | NR17 SL Relay SI + CB (Nathan) |
| **Thursday** |  |  |  |
| 05:00 – 06:30 | CB (Johan) | CB (Kyeongin) | CB (Brian/Emre) |
| **Friday** |  |  |  |
| 05:00 – 06:30 | CB (Nathan)  CB (HuNan) | CB (Diana)  CB (Sergio) | CB (Tero) |

# 4 EUTRA corrections Rel-15 and earlier

See Appendix A for reference to Work items, work item codes and WIDs.

Only essential corrections. No documents should be submitted to 4. Please submit to 4.x

## 4.5 Other LTE corrections Rel-15 and earlier

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

Editorial corrections should be taken up with the specification editor before submitting to avoid CR duplication.

Rel-12: Intra-band contiguous CA capabilities (discussed already several times in previous meetings)

Web Conf 2nd week (1)

[R2-2009428](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009428.zip) Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell, Qualcomm Incorporated CR Rel-12 36.331 12.19.0 4427 2 F LTE\_CA-Core, TEI12 [R2-2008152](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008152.zip)

[R2-2009429](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009429.zip) Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell, Qualcomm Incorporated CR Rel-13 36.331 13.16.0 4428 2 A LTE\_CA-Core, TEI12 [R2-2008153](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008153.zip)

[R2-2009430](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009430.zip) Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell, Qualcomm Incorporated CR Rel-14 36.331 14.15.0 4429 2 A LTE\_CA-Core, TEI12 [R2-2008154](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008154.zip)

[R2-2009431](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009431.zip) Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell, Qualcomm Incorporated CR Rel-15 36.331 15.11.0 4430 2 A LTE\_CA-Core, TEI12 [R2-2008155](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008155.zip)

[R2-2009432](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009432.zip) Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell, Qualcomm Incorporated CR Rel-16 36.331 16.2.1 4431 2 A LTE\_CA-Core, TEI12 [R2-2008156](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008156.zip)

Discussion

- Nokia clarifies the cover page has changed. One possible interpretation is to take UE capabilites as they are signalled but this is different for MIMO capabilities according to RRC. QC agrees with Nokia and supports the CR. Huawei and Samsung agrees.

- Apple is OK with intention but wonders about UL BW class order. Nokia clarifies we already discussed this and it has been analyzed already. Only capabilities with the same UL BW are considered.

- Ericsson still thinks the NOTE will require changes to network implementation. Doesn't want new ambiguities to be introduced. The BCS is still not considered in the NOTE. Nokia explains that there are different scenarios for different BCSs. So the NOTE covers both cases where the BW can be swapped and where it cannot.

- Nokia thinks there wasn't clear proposal how to change the NOTE. We need to resolve ambiguity between two specifications and would like to know the correct interpretation if it's not this. Ericsson thinks network will utilize the NOTE to know if this can be done and if it doesn't work we shouldn't agree to the CR. Can UE capabilities be swapped when BCS are the same and/or different? Nokia clarifies that MIMO capabilities can always be swapped but network can limit the swapping based on NOTE.

- Apple would like some time to check UL parts. QC clarifies this was discussed already earlier this year.

- Nokia clarifies that the E-UTRA band in the NOTE is the smallest factor: BCS0 can be always swapped but all other BCSs are subject to checking by network. Band entries need to be checked and the NOTE covers this in general manner.

* Offline 205 (CB: Friday) (Nokia)
* [AT112-e][205][LTE] Clarification to UE capabilities for non-contiguous intra-band CA (Nokia)

Intended outcome: Agreeable CR

Deadline: Fri 2nd week (before CB session)

* Online (Fri 2nd week)

By Email [201] (2)

Rel-13: RRC resume with CIoT:

[R2-2009763](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009763.zip) Correction to RRC resume for CIoT Google Inc. CR Rel-13 36.331 13.16.0 4484 - F TEI13

[R2-2009764](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009764.zip) Correction to RRC resume for CIoT Google Inc. CR Rel-14 36.331 14.15.0 4485 - A TEI13

[R2-2009257](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009257.zip) Correction to RRC resume and re-establishment Google Inc. CR Rel-15 36.331 15.11.0 4457 - F LTE\_5GCN\_connect-Core

*(moved from 5.4.1.4)*

[R2-2009258](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009258.zip) Correction to RRC resume and re-establishment Google Inc. CR Rel-16 36.331 16.2.1 4458 - A LTE\_5GCN\_connect-Core

*(moved from 5.4.1.4)*

* [AT112-e][201][LTE] LTE Miscellaneous corrections (RAN2 VC)

Scope:

* + - Discuss the CRs under AI 4.5, 7.1.X and 7.5 marked for this email discussion

Intended outcome:

* + - Discussion summary in [R2-2010710](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010710.zip) (by email rapporteur)
    - Agreeable CRs by proponents (if revised versions are required, proponents should obtain Tdoc numbers from session chair or RAN2 secretary to provide those)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010710](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010710.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000

Rel-14: Delay budget reporting

[R2-2008901](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008901.zip) Removal of DelayBudgetReport message in stage 3 Lenovo, Motorola Mobility CR Rel-14 36.331 14.15.0 4450 - F LTE\_VoLTE\_ViLTE\_enh-Core

[R2-2008902](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008902.zip) Removal of DelayBudgetReport message in stage 3 Lenovo, Motorola Mobility CR Rel-15 36.331 15.11.0 4451 - A LTE\_VoLTE\_ViLTE\_enh-Core

[R2-2008903](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008903.zip) Removal of DelayBudgetReport message in stage 3 Lenovo, Motorola Mobility CR Rel-16 36.331 16.2.1 4452 - A LTE\_VoLTE\_ViLTE\_enh-Core

* Offline 201

By Email [201] (1)

Rel-14: Recommended bitrate query at MAC reset:

[R2-2010153](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010153.zip) Recommended bit rate query handling at MAC Reset Ericsson CR Rel-14 36.321 14.13.0 1513 - F LTE\_VoLTE\_ViLTE\_enh

[R2-2010154](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010154.zip) Recommended bit rate query handling at MAC Reset Ericsson CR Rel-15 36.321 15.10.0 1514 - F LTE\_VoLTE\_ViLTE\_enh

[R2-2010155](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010155.zip) Recommended bit rate query handling at MAC Reset Ericsson CR Rel-16 36.321 16.2.0 1515 - F LTE\_VoLTE\_ViLTE\_enh

* Offline 201

By Email [203] (3+3+3)

Rel-15: RLC out-of-order delivery impact to PDCP re-establishment (postponed last time)

[R2-2009565](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009565.zip) PDCP re-establishment for normal DRBs configured with RLC OOD and ROHC Samsung discussion Rel-15 TEI15, LTE\_HRLLC-Core

[R2-2009566](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009566.zip) CR on PDCP re-establishment when t-Reordering is used Samsung CR Rel-15 36.323 15.6.0 0292 - F TEI15, LTE\_HRLLC-Core

[R2-2009567](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009567.zip) CR on PDCP re-establishment when t-Reordering is used Samsung CR Rel-16 36.323 16.2.0 0293 - F TEI16, LTE\_HRLLC-Core

* Offline 203
* [AT112-e][203][LTE] LTE corrections related to RLC out-of-order delivery (Samsung)

Scope:

* + - Discuss the CRs under AI 4.5 related to the RLC out-of-order delivery that are marked for this email discussion to determine which changes are acceptable

Intended outcome:

* + - Discussion summary in [R2-2010714](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010714.zip) (by email rapporteur), agreeable CRs (Tdoc numbers can be obtained from session chair if needed)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010714](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010714.zip)): 2nd week Mon, UTC 13:00

Rel-15: RoHC configuration with RLC out-of-order delivery:

[R2-2009568](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009568.zip) Clarification on ROHC configuration Samsung discussion Rel-15 TEI15, LTE\_HRLLC-Core

[R2-2009569](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009569.zip) Correction on ROHC configuration Samsung CR Rel-15 36.331 15.11.0 4470 - F TEI15, LTE\_HRLLC-Core

[R2-2009570](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009570.zip) Correction on ROHC configuration Samsung CR Rel-16 36.331 16.2.1 4471 - F TEI16, LTE\_HRLLC-Core

* Offline 203

Rel-15: MAC LCH restrictions with RLC out-of-order delivery:

[R2-2009571](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009571.zip) Correction on lch-CellRestriction Samsung CR Rel-15 36.321 15.10.0 1511 - F TEI15, LTE\_HRLLC-Core

[R2-2009572](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009572.zip) Correction on lch-CellRestriction Samsung CR Rel-16 36.321 16.2.0 1512 - F TEI16, LTE\_HRLLC-Core

* Offline 203

By Email [202] (1)

Rel-15: Stage-2 rapporteur CR:

[R2-2009801](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009801.zip) Miscellaneous Stage-2 corrections Nokia (rapporteur), NEC CR Rel-15 36.300 15.11.0 1323 - F NB\_IOTenh2-Core, LTE\_eMTC4-Core, TEI15

* Offline 202

By Email [202] (1)

[R2-2008904](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008904.zip) Removal of DelayBudgetReport message in stage 2 Lenovo, Motorola Mobility CR Rel-14 36.300 14.12.0 1317 - F LTE\_VoLTE\_ViLTE\_enh-Core

[R2-2008905](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008905.zip) Removal of DelayBudgetReport message in stage 2 Lenovo, Motorola Mobility CR Rel-15 36.300 15.11.0 1318 - A LTE\_VoLTE\_ViLTE\_enh-Core

[R2-2008906](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008906.zip) Removal of DelayBudgetReport message in stage 2 Lenovo, Motorola Mobility CR Rel-16 36.300 16.3.0 1319 - A LTE\_VoLTE\_ViLTE\_enh-Core

* Offline 202
* [AT112-e][202][LTE] LTE editorial corrections (RAN2 VC)

Scope:

* + - Discuss the CRs under AI 4.5, 7.1.X and 7.5 marked for this email discussion

Intended outcome:

* + - Discussion summary in [R2-2010711](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010711.zip) (by email rapporteur)
    - Agreeable CRs for 36.300, 36.306 and 36.331 (if any) by specification rapporteurs (after online session)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010711](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010711.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000

By Email [204] (2)

Rel-15: TDD/FDD capability differentiation (postponed earlier, waiting for RAN1 LS reply):

[R2-2009921](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009921.zip) Corrections to the field descriptions for TDD/FDD capability differentiation Huawei, HiSilicon CR Rel-15 36.331 15.11.0 4389 2 F TEI15 [R2-2008157](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008157.zip)

* Revised in [R2-2010735](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010735.zip)

[R2-2009922](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009922.zip) Corrections to the field descriptions for TDD/FDD capability differentiation Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4390 2 A TEI15 [R2-2008158](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008158.zip)

* Revised in [R2-2010736](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010736.zip)
* [AT112-e][204][LTE] LTE corrections to TDD/FDD capability differentiation (Huawei)

Scope:

* + - Progress the revisions to [R2-2009921](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009921.zip) and [R2-2009922](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009922.zip) based on RAN1 LS [R2-2011001](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2011001.zip)

Intended outcome:

* + - Revised CRs in [R2-2010735](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010735.zip) (Rel-15, 36.331) and [R2-2010736](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010736.zip) (Rel-16, 36.331)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 2nd week Mon, UTC 13:00
    - Initial deadline (for revised CRs): 2nd week Tue, UTC 13:00

Web Conf 2nd week (201 summary)

[R2-2010710](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010710.zip) Summary of [AT112-e][201][LTE] LTE Miscellaneous corrections (RAN2 VC) Nokia (RAN2 VC) discussion Rel-15 TEI15

* 6: Agree to the CRs in [R2-2008901](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008901.zip), [R2-2008902](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008902.zip), [R2-2008903](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008903.zip).
* 4: Agree to CR [R2-2008908](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008908.zip) as it is.

P2

- Huawei would like more time to check their implementation on this. Qualcomm is fine to check.

=> [R2-2010153](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010153.zip), [R2-2010154](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010154.zip) and [R2-2010155](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010155.zip) are postponed to next meeting

* 7: Merge the contents of CR [R2-2009385](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009385.zip) to RRC rapporteur CR.

P3

- Google thinks Rel-15 is good for these. QC is fine with Rel-15. Huawei prefers Rel-16.

- QC wonders if we need magic sentence. Huawei thinks we don't use it for network only. Lenovo agrees.

=> Intent of CRs from Rel-15 onwards is agreed. Rel-13 and Rel-14 CRs are not pursued.

=> Rel-15/16 CRs are postponed

P5:

- Nokia clarifies that this is about interpreting RAN2 and RAN4 specifications together. RAN2 is not consistent with RAN4 terminology. Currently "band" is used but understands it means "band entry" and would like to understand if this is common understanding.

- QC thinks the CR is not needed but the interpretation is correct. Huawei is not sure of this.

- Apple wonders if we should capture the example in chairman's notes and make it clear the answer to that is "no"? Nokia thinks we could double-check this if companies have not considered this in details.

- Ericsson wonders what the example helps.

* The CR [R2-2009433](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009433.zip) is postponed. Companies should consider the discussion in the offline discussion.
* Can consider e.g. the following example for next meeting: Suppose UE supports 3C(10 MHz, 10 MHz) and 3A(20 MHz) with BCS that allows both 10 MHz and 20 MHz for the 3A case. Is the latter a fallback BC of the former?

Web Conf 2nd week (202 summary)

[R2-2010711](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010711.zip) Summary of [202][LTE] LTE editorial corrections (RAN2 VC) Nokia (RAN2 VC) discussion Rel-15 TEI15

RRC rapporteur CR

* 5: The DCCA changes from [R2-2009603](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009603.zip) are postponed and should be submitted to DCCA session in the next meeting. Changes from other CRs can be merged to revision of this CR in R2-2011086.
* One CR from eMTC session (R2-2009728) was agreed to be merged to RRC rapporteur CR.

Stage-2 rapporteur CR

*Proposal S1\_1: Agree to the intent of the CRs* [*R2-2008904*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008904.zip)*,* [*R2-2008905*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008905.zip)*,* [*R2-2008906*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008906.zip)*.*

* 3: Agree to CR [R2-2008904](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008904.zip) as it is. Merge the CR [R2-2008905](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008905.zip) to rapporteur CR [R2-2009801](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009801.zip) and CR [R2-2008906](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008906.zip) to rapporteur CR [R2-2009802](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009802.zip).
* 2: Agree to CR [R2-2009801](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009801.zip) as it is. Merge the DAPS-related changes from [R2-2009802](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009802.zip) to Stage-2 CR for LTE MobEnh Stage-2 CR and agree to the remaining changes.
* 4: Agree to CR [R2-2009446](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009446.zip) with revisions proposed during the discussion in R2-2010758 (unseen).

Discussion

- QC thinks we don't need it as it doesn't really change anything. We have other examples where these are misaligned. Lenovo wonders why PHY parameter misalignment is more relevant? This is a misalignment but if nobody sees a need they are fine to leave it. But then wonders why we don't fix editorial issues in 36.306? Will we not fix these after ASN.1 freeze? QC agrees but thinks we don't need to do editorial alignment because the exact RRC structure isn't reflected in 36.306 always. It's not about PHY or Meas as such.

Capability rapporteur CR

* 6: Agree to revision of the CR [R2-2008907](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008907.zip) without the change#3.
* Consider case-by-case if similar changes than change#3 are needed in the future.
* Handle CR merging for above agreements in [202] (deadline: Thu)

Web Conf 2nd week (203 summary)

[R2-2010714](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010714.zip) [AT112-e][203][LTE] LTE corrections related to RLC out-of-order delivery (Samsung) Samsung discussion Rel-15 TEI15, TEI16, LTE\_HRLLC-Core

Discussion

- Samsung clarifies majority wanted option 2 for P1.

- Ericsson thinks the cover page needed revisions. Samsung clarifies this has already been done in proposal 3-related CRs.

* 1. RAN2 confirm that E-UTRAN does not configure ROHC while t-Reordering is configured and agree the revised RRC CRs([R2-2011078](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2011078.zip) for Rel-15 /[R2-2011079](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2011079.zip) for Rel-16) clarifying this.
* 2. [R2-2009566](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009566.zip) and [R2-2009566](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009566.zip)7 are not pursued.
* 3. Agree the revised MAC CRs([R2-2011080](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2011080.zip) for Rel-15 and [R2-2011081](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2011081.zip) for Rel-16).

Web Conf 2nd week (204 summary)

Late LS reply from RAN1:

[R2-2011001](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2011001.zip) Reply LS on Incomplete LTE Physical Layer Capabilities (R1-2009435; contact: Huawei)

* Noted
* Taken into account in email [204]

[R2-2010735](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010735.zip) Corrections to the field descriptions for TDD/FDD capability differentiation Huawei, HiSilicon CR Rel-15 36.331 15.11.0 4389 3 F TEI15 [R2-2009921](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009921.zip)

* Revised in R2-2010759

[R2-2010736](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010736.zip) Corrections to the field descriptions for TDD/FDD capability differentiation Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4390 3 A TEI15 [R2-2009922](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009922.zip)

* Revised in R2-2011085

[R2-2010753](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010753.zip) Corrections to the field descriptions for TDD/FDD capability differentiation Huawei, HiSilicon CR Rel-15 36.306 15.9.0 1800 - F TEI15 [R2-2009921](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009921.zip)

[R2-201075](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_112-e/Docs/R2-2010752.zip)4 Corrections to the field descriptions for TDD/FDD capability differentiation Huawei, HiSilicon CR Rel-16 36.306 16.2.0 1801 - A TEI15 [R2-2009922](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009922.zip)

* Extend deadline to Thu and agree to CRs via email

# 6 Rel-16 NR Work Items

Essential corrections. While high maintenance intensity is expected, Rel-16 corrections are treated separately per WI.

## 6.7 NR mobility enhancements

(NR\_Mob\_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; Completed June 20; WID: RP-192277; SR RP-201273). Documents in this agenda item will be handled in a break out session).

Documents under 6.7 will be treated together with documents in 7.4.

No documents should be submitted to 6.7. Please submit to 6.7.x

Editorial corrections should be taken up with the specification editor before submitting to avoid CR duplication.

Limit: 8 email threads (with 7.4)

### 6.7.1 General and Stage-2 Corrections

Including incoming LSs (if any).

By Email [210] (2+5)

Stage-2 rapporteur inputs

[R2-2009312](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009312.zip) Miscellaneous corrections to Mobility Enhancements Nokia (Rapporteur), Ericsson, Intel Corporation, Nokia Shanghai Bell, Sanechips, ZTE CR Rel-16 38.300 16.3.0 0305 - F NR\_Mob\_enh-Core

* Revised in [R2-2010717](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010717.zip) (offline 210)

[R2-2010354](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010354.zip) Miscellaneous corrections for Mobility Enhancements ZTE Corporation, Sanechips, Ericsson CR Rel-16 37.340 16.3.0 0236 - F NR\_Mob\_enh-Core

* Revised in [R2-2010718](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010718.zip) (offline 210)

CHO/CPC DAPS Stage-2 corrections:

[R2-2009386](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009386.zip) Clarification on CHO in LTE-DC ZTE Corporation, Sanechips CR Rel-16 36.300 16.3.0 1321 - F LTE\_feMob-Core

[R2-2009995](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009995.zip) Clarification of CHO simultaneous with DAPS Ericsson discussion NR\_Mob\_enh-Core

[R2-2010187](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010187.zip) Correction on TS 38.300 for CHO Huawei, HiSilicon CR Rel-16 38.300 16.3.0 0314 - F NR\_Mob\_enh-Core

[R2-2010188](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010188.zip) Correction on TS 36.300 for CHO Huawei, HiSilicon CR Rel-16 36.300 16.3.0 1326 - F LTE\_feMob-Core

[R2-2010651](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010651.zip) Correction to RLF in case of DAPS HO Samsung Electronics Co., Ltd CR Rel-16 38.300 16.3.0 0322 - F NR\_Mob\_enh-Core

* Offline 210
* [AT112-e][210][MOB] Stage-2 corrections (Nokia)

Scope:

* + - Discuss which mobility WI - related Stage-2 corrections (for LTE, MR-DC and NR) are seen necessary

Intended outcome:

* + - Discussion summary in [R2-2010715](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010715.zip) (by email rapporteur).
    - Merged CRs to 36.300 ([R2-2010716](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010716.zip)), 38.300 ([R2-2010717](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010717.zip)) and 37.340 ([R2-2010718](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010718.zip)) (if any)

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010715](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010715.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000

Web Conf (210 summary)

[R2-2010715](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010715.zip) Report from [AT112-e][210][MOB] Stage-2 corrections (Nokia) Nokia, Nokia Shanghai Bell discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

*Proposal 1: Agree R2-2009312 and R2-2010354 with the following changes: in R2-2009312, section 9.2.3.2.1 is updated as follows: change ‘activate’ to ‘resume’, add ‘transmission’. In R2-2010354 the change regarding ‘Simultaneous CPC/CHO operation/configuration’ is removed. Merged into the rapporteur’s CRs.*

*Proposal 2: Discuss online and decide if DAPS can operate in E-UTRA with 5GC. Discuss and decide if CHO is supported for eLTE (based on R2-2010507).*

*Proposal 3: Change in R2-2009386 is agreed and merged with rapporteur’s MobEnh CR to TS 36.300.*

*Proposal 4: Proposal 1 in R2-2009995 is agreed. TP in the Annex is revised accordingly, i.e. NOTE 1a from the Annex is merged with rapporteur’s CRs to TS 36.300 and 38.300.*

*Proposal 5: R2-2010187 and R2-2010188 are not agreed.*

*Proposal 6: R2-2009766 is pursued with the following changes: Figure 10.3.2-6 is corrected with additional MN->SN confirmation, ‘new PSCell’ term is removed, ‘UPE’ typo is fixed, captions for figure 10.3.2-4 and 10.3.2-6 are corrected.*

*Proposal 7: R2-2010651 is agreed with the following change: ‘or in case of DAPS handover, for RLF in the target cell before releasing the source cell’ is added to ‘otherwise, for RLF in the serving cell’.*

*Proposal 8: R2-2010207 and R2-2010208 are not agreed.*

[R2-2010716](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010716.zip) Miscellaneous corrections to Mobility Enhancements Nokia (Rapporteur) CR Rel-16 36.300 16.3.0 1330 - F NR\_Mob\_enh-Core

[R2-2010717](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010717.zip) Miscellaneous corrections to Mobility Enhancements Nokia (Rapporteur), Ericsson, Intel Corporation, Nokia Shanghai Bell, Sanechips, ZTE CR Rel-16 38.300 16.3.0 0305 1 F NR\_Mob\_enh-Core [R2-2009312](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009312.zip)

[R2-2010718](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010718.zip) Miscellaneous corrections for Mobility Enhancements ZTE Corporation, Sanechips, Ericsson CR Rel-16 37.340 16.3.0 0236 1 F NR\_Mob\_enh-Core [R2-2010354](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010354.zip)

### 6.7.2 Conditional handover related corrections

This AI jointly addresses corrections to NR and LTE CHO.

Web Conf 2nd week (1+1+1+1)

Editorials:

[R2-2010229](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010229.zip) Support of Rel-16 features for SCG in EN-DC and NR-DC Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2192 - F NR\_IAB-Core, NR\_Mob\_enh-Core

Moved from 6.1.3 to 6.2.4, then Moved from 6.2.4 to here

* Main session requested to check the CHO-related parts

UE compliance check failure for CHO command:

[R2-2009998](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009998.zip) Inability to comply with conditional reconfiguration Ericsson CR Rel-16 38.331 16.2.0 2154 - F NR\_Mob\_enh-Core

* Online (Tue 2nd week)

SI reading during CHO recovery:

[R2-2010189](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010189.zip) Correction on TS 38.331 for CHO Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2185 - F NR\_Mob\_enh-Core

* Online (Tue 2nd week)

CHO with the "1 second rule" for UE assistance information (for LTE and NR):

[R2-2010253](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010253.zip) UE information transmission in NR CHO case SHARP Corporation, Ericsson discussion Rel-16 NR\_Mob\_enh-Core [R2-2007718](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007718.zip)

[R2-2010251](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010251.zip) UE information transmission in LTE CHO case SHARP Corporation, Ericsson discussion Rel-16 LTE\_feMob-Core

*(moved from 7.4.4)*

[R2-2010254](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010254.zip) Clarification on UE information transmission in CHO case(38.331) SHARP Corporation, Ericsson CR Rel-16 38.331 16.2.0 2194 - F NR\_Mob\_enh-Core

[R2-2010252](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010252.zip) Clarification on UE information transmission in CHO case(36.331) SHARP Corporation, Ericsson CR Rel-16 36.331 16.2.1 4503 - F LTE\_feMob-Core

*(moved from 7.4.4)*

* Online (Tue 2nd week)

By Email [211] (3+2+2+2+1)

Small corrections, NR RRC affecting ASN.1 parts:

[R2-2009996](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009996.zip) Missing release of VarConditionalReconfig Ericsson CR Rel-16 38.331 16.2.0 2153 - F NR\_Mob\_enh-Core

[R2-2009533](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009533.zip) Correction on configuration of triggerCondition for CHO CATT CR Rel-16 36.331 16.2.1 4466 - F LTE\_feMob-Core

[R2-2009848](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009848.zip) Correction to attemptCondReconfig in ConditionalReconfiguration Ericsson CR Rel-16 38.331 16.2.0 2140 - F NR\_Mob\_enh-Core

* Offline 211

Small corrections, NR RRC procedural text

[R2-2009640](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009640.zip) Correction to remove conditional reconfiguration related measurement configuration ITRI CR Rel-16 38.331 16.2.0 2100 - F NR\_Mob\_enh-Core

[R2-2009639](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009639.zip) Correction to conditional reconfiguration evaluation ITRI CR Rel-16 38.331 16.2.0 2099 - F NR\_Mob\_enh-Core

* Offline 211

Small corrections, LTE RRC affecting procedural text:

[R2-2009997](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009997.zip) Missing release of VarConditionalReconfiguration Ericsson CR Rel-16 36.331 16.2.1 4491 - F NR\_Mob\_enh-Core

[R2-2010190](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010190.zip) Correction on TS 36.331 for CHO Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4498 - F LTE\_feMob-Core

* Offline 211

SRB COUNT during CHO recovery:

[R2-2010205](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010205.zip) Issue on failure handling of handover without key change for the UE configured with attemptCondReconfig SHARP Corporation discussion Rel-16 NR\_Mob\_enh-Core

[R2-2010206](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010206.zip) Correction of reconfiguration with sync failure procedure for the UE configured with attemptCondReconfig SHARP Corporation CR Rel-16 38.331 16.2.0 2190 - F NR\_Mob\_enh-Core

* Offline 211

Optimizations (adding PCI outside the CHO configuration):

[R2-2009472](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009472.zip) Target cell ID parsing in CHO and CPAC Apple CR Rel-16 38.331 16.2.0 2080 - F NR\_Mob\_enh-Core

* Offline 211
* [AT112-e][211][MOB] CHO/CPC RRC corrections (Intel)

Scope:

* + - Discuss which CHO/CPC corrections for 36.331/38.331 are seen necessary and provide merged CRs with agreeable corrections (if any)

Intended outcome:

* + - Discussion summary in [R2-2010719](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010719.zip) (by email rapporteur).
    - Merged CRs to 36.331 ([R2-2010720](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010720.zip)) and 38.331 ([R2-2010721](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010721.zip)) (if any)

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010719](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010719.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000

Web Conf 2nd week (211 summary)

[R2-2010719](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010719.zip) Summary of discussion [211][MOB] CHO/CPC RRC corrections (Intel) Intel Corporation discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

*Proposal 1a: Do not capture the release of VarConditionalReconfig for inter-RAT handover case, and therefore R2-2009996 is not pursued;*

*Proposal 1b: The updated changes of R2-2009997 (to remove the change for inter RAT handover, and add the release of corresponding measurement configuration for conditionalReconfig) are agreed and merged in R2-2010720.*

*Proposal 2:The updated changes of R2-2009533 ( to add the clauses affected in the coversheet) are agreed and merged in R2-2010720.*

*Proposal 3a: The updated changes of R2-2009848 (to change “one conditional reconfiguration” to “ a candidate SpCell”, and corresponding changes on coversheet) are agreed and merged in R2-2010721.*

*Proposal 3b: To capture the updated changes of R2-2009848 into LTE CR R2-2010720. Corresponding CR is agreeable.*

*Proposal 4: The changes in R2-2009640 are not needed and therefore R2-2009640 is not pursued.*

*Proposal 5: The editorial change in R2-2009639 is agreed and merged in R2-2010721;*

*Proposal 6:The changes in R2-2010190 are not needed and therefore the R2-2010190 is not pursued;*

*Proposal 7:To discuss during online session, in case both the failure cell and the selected target cell for recovery is configured without a key update, whether there is security issue if same COUNT value and same key is used for the same message, but to different target cells as mentioned in R2-2010205;*

*Proposal 8:In Rel-16, do not add the physical cell ID of candidate PSCell in CondReconfigToAddMod and therefore R2-2009472 is not pursued;*

*Proposal 9: The updated changes of R2-2010589 ( to remove the changes on radioBearerConfig) are agreed and merged in R2-2010721.*

*Proposal 10: The changes in R2-2010641 are agreed and merged in R2-2010720.*

*Proposal 11: The changes in R2-2010645 are agreed and merged in R2-2010721.*

[R2-2010720](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010720.zip) Miscellaneous corrections to Mobility Enhancements Intel Corporation CR Rel-16 36.331 16.2.1 4530 - F NR\_Mob\_enh-Core

[R2-2010721](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010721.zip) Miscellaneous corrections to Mobility Enhancements Intel Corporation CR Rel-16 38.331 16.2.0 2280 - F NR\_Mob\_enh-Core

* Online (2nd week) or via Offline 211

### 6.7.3 Conditional PSCell change for intra-SN corrections

Including corrections for CPC.

By Email [210] (1)

[R2-2009766](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009766.zip) Corrections to CPC with and without SRB3 involved Nokia, Nokia Shanghai Bell, ZTE Corporation (Rapporteur) CR Rel-16 37.340 16.3.0 0220 1 F NR\_Mob\_enh-Core [R2-2007360](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007360.zip)

* Offline 210

By Email [211] (1)

[R2-2010589](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010589.zip) Correction to CG-Config for CPC Google Inc. CR Rel-16 38.331 16.2.0 2251 - F NR\_Mob\_enh-Core

* Offline 211

### 6.7.4 UE capability corrections

Including UE capability aspects of NR mobility WI and joint LTE/NR capability corrections..

Including outcome of [Post111-e][921][DAPS] DAPS capability structure clarifications (Huawei)

Web Conf (4+1)

Outcome of [Post111-e][921][DAPS] DAPS capability structure clarifications (Huawei)

[R2-2010292](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010292.zip) Report of [Post111-e][921][DAPS] DAPS capability structure clarifications (Huawei) Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

**Bulk agreements:**

* 1: UE can indicate the support of DAPS in a BC with more than 2CCs, and it means UE can support DAPS with every CC pair among them.
* 2: UE can indicate the support of intra-freq and inter-freq DAPS simultaneously in one BC.
* 3: when referred to by featureSetCombinationDAPS, a FS with intra-freq DAPS UE capability applies to both intra-freq and inter-freq DAPS, and a FS without intra-freq DAPS UE capability is only applied to inter-freq DAPS.
* 5: UE can indicate intra-freq DAPS UE capability in a BWC-A band.
* 7: regarding “support FSperCC bandwidth fallback”, for inter-freq DAPS, reuse CA methofology; for intra-freq DAPS, reuse single CC fallback mechanism.
* 8: UE only uses featureSetCombinationDAPS to indicate DAPS UE capability.
* 9: a FS with intra-freq DAPS UE capability can only be referred to by featureSetCombinationDAPS.

*For further discussion:*

*Proposal 4: RAN2 to discuss whether source/target indication is based on UE capability signalling or inter-node RRC message.*

*Proposal 6: RAN2 to discuss which solution to adopt for supporting intra-freq DAPS in a BWC-A band:*

*Option 1: two or more FSperCCs can be included in this band, and each FSperCC refers to source cell or target cell;*

*Option 2: only one FSperCC is included in this band, and it means source cell and target cell use the same FSpreCC.*

*Proposal 10: RAN2 to discuss which interpretation for diffSCS-DAPS capability is captured in spec:*

*Option 1: at least one scenario is supported among UL only, DL only and both UL/DL;*

*Option 2: different SCS-s in source and target are supported in both UL and DL.*

*Supplementary proposals for further discussion:*

*Proposal 1a: Clarify that gNB can configure intra-frequency DAPS on each of the bands of a band combination with non-contiguous CA (assuming the intra-frequency DAPS capability is signalled)*

*Proposal 3a: UE shall signal featureSetCombinationDAPS comprising of at least one FS where intra-frequency DAPS capability is signalled.*

*Proposal 3b: Clarify that gNB shall not use featureSetCombinationDAPS for non-DAPS purpose.*

*[Clarification to Proposal 4] Clarify that source and target gNB ensure that the per CC property signalled in featureSetCombinationDAPS is followed.*

*Proposal 5a: Clarify if gNB is able to configure DAPS in the following scenario: The given band combination comprises of only two non-CA bands where intra-frequency DAPS capability is signalled for only one of the non-CA band(s).*

*Proposal 5b: Clarify that UE shall not report intra-frequency DAPS capability when intra-freq DAPS UE capability is indicated in a band combination comprising of a non-CA single band entry.*

*[Clarification to Proposal 6] Clarify that source and target gNB are free to choose the component carrier only based on the capability of the component carriers signalled in the given band combination.*

*[Clarification to Proposal 7] Clarify that source and target gNB ensure that the per CC property signalled in featureSetCombinationDAPS is followed.*

*Proposal 11: In Rel-16 no further enhancements are required to signal inter-frequency capabilities per component carrier combination within a given band combination.*

* Following still require online discussion (CB 2nd week):

*Proposal 4: RAN2 to discuss whether source/target indication is based on UE capability signalling or inter-node RRC message.*

*Proposal 10: RAN2 to discuss which interpretation for diffSCS-DAPS capability is captured in spec:*

*Option 1: at least one scenario is supported among UL only, DL only and both UL/DL;*

*Option 2: different SCS-s in source and target are supported in both UL and DL.*

[R2-2009783](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009783.zip) UE Capabilities for Intra-frequency DAPS Handover MediaTek Inc. discussion

Discussion

- QC thinks we agreed earlier at least B is needed but is fine with P1. But P2/3 is not possible since UE has limited resources. This could lead to BC duplication in capabilities. Huawei thinks this means UE has to support 2 BB anyway and this is UE decision. MediaTek thinks intra-frequency is anyway per feature set and UE knows this.

- Nokia thinks we need to be consistent: If UE reports at least two CCs, it could support DAPS. But wonders if UE reports only one band with BW class A, is it still possible to use same properties in source and target for DAPS?

- Huawei supports the proposals 1-3. Ericsson agrees.

- Intel wonders if these mean the same capabilities apply for source and target in this case? So does this restrict UE implementation? Why does UE not just indicate B instead of A? Nokia thinks this is possible but this is about whether we allow both options. QC thinks that DAPS FS only applies to DAPS operation so that will have lower capabilities. Non-DAPS FS will have less capabilities. MediaTek clarifies this was the understanding. Also agrees with Intel but wouldn't like to restrict unnecessarily. Huawei thinks that for intra-frequency DAPS, there is only one CC but two cells.

- Intel thinks this would impact specs and we would need to inform RAN4. Huawei thinks this has no impact and we would need to restrict to avoid A. QC thinks this has no gain over BW class B. MediaTek clarifies this is because we now have the DAPS FS which was not agreed before.

- Intel thinks it is confusing what "BW class A UE" means. BW class B in DAPS means the same thing. Ericsson thinks this is more philosophical than anything else. P1-3 are already supported.

- On P6, Intel agrees multi-UL should be deleted but power sharing is still used.

* No further modifications to specifications to allow or disallow DAPS for BW class A.
* Modify UE capability to dummify the field intraFreqMultiUL-TransmissionDAPS from intraFreqDAPS-UL (Offline discussion 215)

[R2-2008827](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008827.zip) NR DAPS capability corrections Nokia, Nokia Shanghai Bell discussion NR\_Mob\_enh-Core

*Supplementary proposals for further discussion:*

*Proposal 1a: Clarify that gNB can configure intra-frequency DAPS on each of the bands of a band combination with non-contiguous CA (assuming the intra-frequency DAPS capability is signalled)*

*Proposal 3a: UE shall signal featureSetCombinationDAPS comprising of at least one FS where intra-frequency DAPS capability is signalled.*

*Proposal 3b: Clarify that gNB shall not use featureSetCombinationDAPS for non-DAPS purpose.*

*[Clarification to Proposal 4] Clarify that source and target gNB ensure that the per CC property signalled in featureSetCombinationDAPS is followed.*

*Proposal 5a: Clarify if gNB is able to configure DAPS in the following scenario: The given band combination comprises of only two non-CA bands where intra-frequency DAPS capability is signalled for only one of the non-CA band(s).*

*Proposal 5b: Clarify that UE shall not report intra-frequency DAPS capability when intra-freq DAPS UE capability is indicated in a band combination comprising of a non-CA single band entry.*

*[Clarification to Proposal 6] Clarify that source and target gNB are free to choose the component carrier only based on the capability of the component carriers signalled in the given band combination.*

*[Clarification to Proposal 7] Clarify that source and target gNB ensure that the per CC property signalled in featureSetCombinationDAPS is followed.*

*Proposal 11: In Rel-16 no further enhancements are required to signal inter-frequency capabilities per component carrier combination within a given band combination.*

[R2-2010500](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010500.zip) Remaining open issues for DAPS capabilities Ericsson discussion

* Noted

[R2-2010293](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010293.zip) Clarification on NR DAPS UE capability Huawei, HiSilicon CR Rel-16 38.306 16.2.0 0442 - F NR\_Mob\_enh-Core

* CB: Online (Fri 2nd week)

By Email [215]

* [AT112-e][215][NR][MOB] Additional clarification to DAPS capabilities (Nokia)

Scope:

* + - Discuss additional clarifications for DAPS capabilities as per minutes and capture them in CRs

Intended outcome:

* + - Endorsable CRs for [R2-2010751](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010751.zip) (38.306) and [R2-2010752](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010752.zip) (38.331) based on agreements and above clarifications (if needed)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 2nd week Thu, UTC 1000
    - Deadline for CR finalization: 2nd week Thu, UTC 1700

[R2-2010751](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010751.zip) Clarification to NR DAPS UE capability Nokia, Nokia Shanghai Bell CR Rel-16 38.306 16.2.0 0473 - F NR\_Mob\_enh-Core Late

[R2-2010752](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010752.zip) Clarification to NR DAPS UE capability Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.2.0 2279 - F NR\_Mob\_enh-Core Late

By Email [212] (1+3)

DAPS capabilities:

[R2-2009655](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009655.zip) Correction on CA-ParametersNR for DAPS handover NEC draftCR Rel-16 38.331 16.2.0 NR\_Mob\_enh-Core

* Offline 212

CHP/CPC capabilities:

[R2-2009273](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009273.zip) The supported combination among FRx/xDD CHO/CPC capabilities Intel Corporation discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

[R2-2009281](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009281.zip) Clarification on the setting of FRx&xDD CHO&CPC capabilities Intel Corporation CR Rel-16 38.306 16.2.0 0423 - F NR\_Mob\_enh-Core

[R2-2010296](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010296.zip) Clarification on CHO and CPC capabilities between different modes Huawei, HiSilicon CR Rel-16 38.306 16.2.0 0443 - F NR\_Mob\_enh-Core

* Offline 212
* [AT112-e][212][MOB] Mobility UE capabilities for LTE and NR (Huawei)

Scope:

* + - Discuss which UE capability corrections to LTE and NR are seen necessary and provide merged CRs with agreeable corrections (if any)

Intended outcome:

* + - Discussion summary in [R2-2010722](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010722.zip) (by email rapporteur).
    - Merged CRs to 36.306 ([R2-2010723](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010723.zip)), 36.331 ([R2-2010724](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010724.zip)), 38.306 ([R2-2010725](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010725.zip)) and 38.331 ([R2-2010726](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010726.zip)) (if any)

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010722](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010722.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000

Web Conf 2nd week (212 summary)

[R2-2010722](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010722.zip) Report of [AT112-e][212][MOB] Mobility UE capabilities for LTE and NR (Huawei) Huawei, HiSilicon discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

*Proposal 1: R2-2009655 is agreeable, and merge it to 38.331 UE capability Rapporteur CR.*

*Proposal 2: R2-2009281 is agreeable, and merge it to 38.306 UE capability Rapporteur CR.*

*Proposal 3: R2-2010681 is agreed.*

*Proposal 4: update the cover sheet of R2-2010682 to reflect all changes, then the revised version can be agreed.*

*Proposal 5: for LTE there is no need to clarify in RAN2 spec that the source and target PCell channel bandwidths may be different in intra-frequency and intra-frequency DAPS HO.*

*Proposal 6: for LTE, add in the field description of UE capability interFreqDAPS that “For a BC, the capability applies to every carrier pair for source and target.”*

[R2-2010723](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010723.zip) UE capability corrections to Mobility Enhancements (LTE) Huawei, HiSilicon CR Rel-16 36.306 16.2.0 1802 - F LTE\_feMob-Core

[R2-2010724](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010724.zip) Miscellaneous corrections to Mobility Enhancements (LTE) Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4531 - F LTE\_feMob-Core

[R2-2010725](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010725.zip) Miscellaneous corrections to Mobility Enhancements (NR) Huawei, HiSilicon CR Rel-16 38.306 16.2.0 0474 - F NR\_Mob\_enh-Core

[R2-2010726](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010726.zip) Miscellaneous corrections to Mobility Enhancements (NR) Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2281 - F NR\_Mob\_enh-Core

* Online (2nd week) or via Offline 212

Withdrawn:

[R2-2008828](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008828.zip) NR DAPS capability corrections Nokia, Nokia Shanghai Bell CR Rel-16 38.306 16.2.0 0413 - F NR\_Mob\_enh-Core Withdrawn

[R2-2008829](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008829.zip) NR DAPS capability corrections Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.2.0 2018 - F NR\_Mob\_enh-Core Withdrawn

### 6.7.5 Other

Including corrections to DAPS that are NR-specific without equivalent LTE impacts

By Email [213] (2)

[R2-2009665](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009665.zip) Minor corrections to NR mobility enhancements Lenovo, Motorola Mobility CR Rel-16 38.331 16.2.0 2102 - F NR\_Mob\_enh-Core

[R2-2010415](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010415.zip) Correction on DAPS power configuration Google Inc. CR Rel-16 38.331 16.2.0 2218 - F NR\_Mob\_enh-Core

* Offline 213

## 6.8 DC and CA enhancements

(LTE\_NR\_DC\_CA\_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; Target Aug 20; WI RP-200791, SR: RP-201218) R1 and R2 parts are 100% complete.

No documents should be submitted to 6.8. Please submit to 6.8.x

Editorial corrections should be taken up with the specification editor before submitting to avoid CR duplication.

Limit: 5 email threads

### 6.8.1 General and Stage-2 Corrections

Including incoming LSs rapporteur inputs, including corrections discussions going beyond a specific TS, cross group discussions.

Web Conf (1+1)

[R2-2008706](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008706.zip) Reply LS on UL PC for NR-DC (R1-2007261; contact: Apple) RAN1 LS in Rel-16 LTE\_NR\_DC\_CA\_enh-Core To:RAN2

[R2-2008736](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008736.zip) Reply LS on power control for NR-DC (R4-2011721; contact: vivo) RAN4 LS in Rel-16 LTE\_NR\_DC\_CA\_enh-Core To:RAN2 Cc:RAN1

* Noted (without presentation)
* Related contributions discussed in AI 6.8.4

[R2-2008744](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008744.zip) LS response on measurement capability for EMR (R4-2012112; contact: Ericsson) RAN4 LS in Rel-16 LTE\_NR\_DC\_CA\_enh-Core To:RAN2

[R2-2008750](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008750.zip) LS on EMR measurement requirements in NR (R4-2012297; contact: Ericsson) RAN4 LS in Rel-16 LTE\_NR\_DC\_CA\_enh-Core To:RAN2

* Noted (for information only, no presentation)
* Related contribution(s) discussed in AI 6.8.3

Web Conf (2)

[R2-2009548](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009548.zip) CR for 37.340 on power control for NR\_DC Nokia, Nokia Shanghai Bell, Samsung, Ericsson CR Rel-16 37.340 16.3.0 0235 - B LTE\_NR\_DC\_CA\_enh-Core

Discusssion

- OPPO asks if this is only about NR-DC or also for other MR-DC variants? Nokia clarifies this was only for NR-DC.

- QC thinks we don't need to capture EN-DC since this is for Rel-16. OPPO thinks we should try to cover all MR-DC cases anyway.

- Huawei thinks this is not needed since RAN1 specifications capture it already. Should clarify this is for Rel-16 intra-FR DC.

- ZTE is fine to capture this but would like to consider also EN-DC and NE-DC.

* Consider EN-DC and NE-DC in the next meeting based on corrections (as part of Rel-15 corrections)
* Discuss in offline [223] if revisions are needed for NR-DC text (e.g. clarification on intra-FR DC)
* Revised in [R2-2010742](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010742.zip)

[R2-2010647](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010647.zip) Miscellaneous corrections for RRC Transfer procedure Samsung R&D Institute UK CR Rel-16 37.340 16.3.0 0237 - F LTE\_NR\_DC\_CA\_enh-Core

*(moved from 6.8.4)*

Discussion

- LGE is fine with some changes but some are not needed: 10.10.1 changes are not needed. We are not indicating message names but types of messages. 10.10.2 changes seem correct as they do concern message names.

- ZTE thinks correction in 10.10.2 is not correct since NGEN-DC is also included.

- Huawei thinks more than half the changes are related to Rel-15 or CPC so this is confusing.

* Discuss which changes are related to Rel-16 DCCA in offline [223] and merge agreeable ones to [R2-2010742](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010742.zip).

By Email [223]

* [AT112-e][223][NR][DCCA] Stage-2 CRs for 37.340 (Nokia)

Scope:

* + - Merge content from [R2-2009548](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009548.zip) and agreeable parts of [R2-2010647](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010647.zip) based on discussion.

Intended outcome:

* + - Agreeable CR to 37.340 in [R2-2010742](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010742.zip) (revision of [R2-2009548](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009548.zip))

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Final CRs: 2nd week Wed, UTC 1100

[R2-2010742](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010742.zip) CR for 37.340 on DCCA corrections Nokia, Nokia Shanghai Bell, Samsung, Ericsson CR Rel-16 37.340 16.3.0 0235 1 B LTE\_NR\_DC\_CA\_enh-Core [R2-2009548](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009548.zip)

By Email [22x] (4)

*Rapporteur CRs, for merging editorial inputs:*

[R2-2010018](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010018.zip) Misc corrections for Rel-16 DCCA Ericsson CR Rel-16 38.331 16.2.0 2161 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010019](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010019.zip) Misc corrections for Rel-16 DCCA Ericsson CR Rel-16 36.331 16.2.1 4492 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010020](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010020.zip) Misc corrections for Rel-16 DCCA Ericsson CR Rel-16 38.300 16.3.0 0312 - F LTE\_NR\_DC\_CA\_enh-Core Late

[R2-2010021](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010021.zip) Misc corrections for Rel-16 DCCA Ericsson CR Rel-16 36.300 16.3.0 1325 - F LTE\_NR\_DC\_CA\_enh-Core Late

* TBD how to handle the editorial CRs - Only discussed during the 2nd meeting week
* Online (Tue 2nd week)

### 6.8.2 Fast Scell activation

By Email [221] (5)

*SCell dormancy, MAC corrections:*

[R2-2009549](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009549.zip) Dormancy correction Nokia, Nokia Shanghai Bell CR Rel-16 38.321 16.2.0 0934 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2009573](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009573.zip) Corrections on bwp-InactivityTimer Samsung CR Rel-16 38.321 16.2.1 0935 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2008927](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008927.zip) Correction on RA upon BWP switching to dormant BWP Asia Pacific Telecom co. Ltd CR Rel-16 38.321 16.2.1 0901 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010022](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010022.zip) Timing of direct SCell activation upon RRC configuration Ericsson CR Rel-16 38.321 16.2.1 0956 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 221

*SCell dormancy, UE capabilities:*

[R2-2009550](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009550.zip) BWP support for dormancy Nokia, Nokia Shanghai Bell discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

* Offline 221
* [AT112-e][221][DCCA] Fast Scell activation and early measurements (Nokia)

Scope:

* + - Discuss corrections under 6.8.2/6.8.3 marked for this discussion to see which CRs could be agreeable

Intended outcome:

* + - Discussion summary in [R2-2010731](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010731.zip) (by email rapporteur).

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010731](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010731.zip)): 2nd week Mon, UTC 13:00

Web Conf 2nd week (221 summary)

[R2-2010731](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010731.zip) Summary of [AT112-e][221][DCCA] Fast Scell activation and early measurements (Nokia) Nokia discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

*Summary: There seems to majority support to remove duplication as done in 9549 (and thus 9573 not needed) but also it was raised the need stop bwp-InactivityTimer when switching BWP to dormant BWP e.g. realized as expalined by Ericsson. It woudl be good to get more comments on that one:*

*Proposal: Not to agree* [*R2-2008927*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008927.zip)

*Proposal: Agree to revision of CR* [*R2-2010022*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010022.zip) *with Huawei changes*

*Proposal: No actions in RAN2 on BWP suppport for SCell dormancy as RAN1 has made relevant agreements*

*Proposal: Do not agree CRs* [*R2-2009551*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009551.zip)*,* [*R2-2009552*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009552.zip) *and* [*R2-2009553*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009553.zip)*. Confirm serving frequency is not reported as part of early measurements when serving frequency is not part of early measurement configuration*

*Proposal: Do not agree 2nd change of* [*R2-2009551*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009551.zip)*-* [*R2-2009553*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009553.zip)

*Proposal: Do not agree* [*R2-2010024*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010024.zip)

*Proposal: Do not agree* [*R2-2010023*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010023.zip)

*Proposal: Do not agree* [*R2-2010653*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010653.zip) *and* [*R2-2010654*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010654.zip)

### 6.8.3 Early measurement reporting

By Email [220] (1)

*Editorial corrections:*

[R2-2009352](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009352.zip) Miscellaneous corrections on early measurement reporting in 38.331 CATT CR Rel-16 38.331 16.2.0 2056 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2009353](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009353.zip) Miscellaneous corrections on early measurement reporting in 36.331 CATT CR Rel-16 36.331 16.2.1 4460 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 220
* [AT112-e][220][DCCA] Simple DCCA corrections (Ericsson)

Scope:

* + - Discuss DCCA corrections under 6.8.1/6.8.3/6.8.4/6.8.5 marked for the discussion to see which CRs could be agreeable

Intended outcome:

* + - Discussion summary in [R2-2010730](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010730.zip) (by email rapporteur).

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010730](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010730.zip)): 2nd week Mon, UTC 13:00

Web Conf 2nd week (220 summary)

[R2-2010730](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010730.zip) Summary of [AT112-e][220][DCCA] Simple DCCA corrections (Ericsson) Ericsson discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

*Proposal 1 Changes in* [*R2-2009352*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009352.zip) *are merged into 38.331 rapporteur CR.*

*Proposal 2 Changes in* [*R2-2009353*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009353.zip) *except the 2nd change are merged into 36.331 rapporteur CR.*

*Proposal 3 Changes in* [*R2-2010026*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010026.zip) *are merged into 38.331 rapporteur CR.*

*Proposal 4 2nd and 3rd change in* [*R2-2009354*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009354.zip) *are merged into 38.331 rapporteur CR.*

*Proposal 5 1st change in* [*R2-2010120*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010120.zip) *is merged into 36.331 rapporteur CR.*

*Proposal 6 The change in* [*R2-2009415*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009415.zip) *is merged into 36.331 rapporteur CR.*

By Email [221] (2)

*Applicability to serving carrier measurements:*

[R2-2009551](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009551.zip) Measurement applicability and validity Nokia, Nokia Shanghai Bell CR Rel-15 36.331 15.11.0 4468 - F LTE\_euCA-Core

[R2-2009552](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009552.zip) Measurement applicability and validity Nokia, Nokia Shanghai Bell CR Rel-16 36.331 16.2.1 4469 - F LTE\_euCA-Core, LTE\_NR\_DC\_CA\_enh-Core

[R2-2009553](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009553.zip) Measurement applicability and validity Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.2.0 2090 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 221

*Clarification to IDLE mode measurement storing procedural text:*

[R2-2010023](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010023.zip) Serving cell results for early measurements Ericsson CR Rel-16 38.331 16.2.0 2162 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 221

By Email [221] (1)

*Indication of T331 expiration in measurements (related to RAN4 LS* [*R2-2008750*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008750.zip) *on EMR requirements):*

[R2-2010024](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010024.zip) Early measurement requirements Ericsson discussion LTE\_NR\_DC\_CA\_enh-Core

* Offline 221

By Email [221] (1)

*Usage of SIB indication for early measurements:*

[R2-2010653](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010653.zip) Reporting of dle/inactive measurement not obtained in the current cell Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4528 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010654](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010654.zip) Reporting of dle/inactive measurement not obtained in the current cell Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2268 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 221

### 6.8.4 Other DCCA corrections

Including NR-NR DC, MCG SCell and SCG configuration with RRC resume, Fast MCG link recovery, and RRC corrections that doesn’t fit under the other headings.

Including outcome of [Post111-e][918][DCCA] SCell SMTC window for Unaligned CA (CMCC)

Including capability signalling based on agreements in RP-202030.

Web Conf (Email disc [918])

Outcome of [Post111-e][918][DCCA] SCell SMTC window for Unaligned CA (CMCC):

[R2-2010378](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010378.zip) Summary of [Post111-e][918][R16 DCCA] SCell SMTC window for Unaligned CA (CMCC) CMCC discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

*Conclusion 1: For the IE measurementSlots defined in 38.331, only complete slots inside the SMTC window are indicated by the bitmap in measurementSlots in case of intra- frequency measurement, and add the corresponding clarification for the slot bitmap interpretation of measurementSlots in TS38.331.*

*Conclusion 2: RAN2 should define separate capability for case A and B, i.e. legacy capability is for case A and new capability for case B.*

*And the corresponding CRs for TS 38.331 and TS 38.306 are accepted by participants.*

Discussion

- CMCC explains that the inter-frequency measurement issue existed since Rel-15 so might need to be discussed separately.

- ZTE thinks we should adopt the intra-frequency principle for inter-frequency as well. RAN4 will define more restrictions for inter-frequency measurements. Could do it from Rel-16 onwards without affecting Rel-15.

- QC thinks this was in Rel-15 but nobody has raised it in IODT so far. Wouldn't like to do anything now. Huawei agrees this could cause IODT issues. Ericsson, Apple and Samsung agree.

- ZTE thinks this will happen anyway in async CA when it is deployed and postponing now will mean the problem comes later with async inter-frequency.

- Apple wonders if network can use this only if it gets the new case-B capability from UE? MediaTek thinks this may not work and we would need a new capability.

**Agreements (intra-frequency case)**

* 1: For the IE measurementSlots defined in 38.331, only complete slots inside the SMTC window are indicated by the bitmap in measurementSlots in case of intra- frequency measurement, and add the corresponding clarification for the slot bitmap interpretation of measurementSlots in TS38.331.
* 2: RAN2 should define separate capability for case A and B, i.e. legacy capability is for case A and new capability for case B.

**Agreements (inter-frequency case)**

* No consensus to do anything for inter-frequency case.

[R2-2010379](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010379.zip) CR for Unaligned CA in TS 38.331 CMCC,MediaTek Inc. CR Rel-16 38.331 16.2.0 2212 - C LTE\_NR\_DC\_CA\_enh-Core

Discussion

- Chair and MediaTek point out some issues with cover page.

- MediaTek thinks the last change (capability) is in the wrong IE

- Samsung thinks there is an overlong comment that could causwe compiler problems

* Check that the capabilities are added to the right IEs
* Shorten the overlong comment
* Correct CR number in cover page
* Indicate in CR cover page that all UEs and networks implementing unaligned CA should implement this CR
* Check offline if this should be Cat F CR
* Revised in [R2-2010740](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010740.zip)
* Discuss revised CRs in Offline 224. Revised CR can be provided in [R2-2010740](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010740.zip)

[R2-2010380](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010380.zip) CR for Unaligned CA in TS 38.306 CMCC,MediaTek Inc. CR Rel-16 38.306 16.2.0 0447 - C LTE\_NR\_DC\_CA\_enh-Core

Discussion

- Apple thinks this is not BC CR since this needs to be implemented by all. Could be Cat F. MediaTek thinks this could be F as well. Samsung wonders if this is really NBC or just a clarification. ZTE thinks this is not NBC CR either. Nokia thinks that since we add a capability, this is modification of what we have. If UE implemented based on previous version, there's no problem as this just clarifies the applicability of the previous capability.

* Correct CR number in cover page
* Indicate in CR cover page that all UEs and networks implementing unaligned CA should implement this CR
* Put the field descriptions in alphabetical order
* Check offline if this should be Cat F CR
* Revised in [R2-2010741](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010741.zip)
* Discuss revised CRs in Offline 224. Revised CR can be provided in [R2-2010741](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010741.zip)

By Email [224]

* [AT112-e][224][NR][DCCA] CRs for unaligned CA (CMCC)

Scope:

* + - Merge content from [R2-2009548](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009548.zip) and agreeable parts of [R2-2010647](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010647.zip) based on discussion.

Intended outcome:

* + - Agreeable CRs to 38.331 in [R2-2010740](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010740.zip) (revision of [R2-2010379](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010379.zip)) and 38.306 in [R2-2010741](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010741.zip) (revision of [R2-2010380](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010380.zip))

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Final CRs: 2nd week Wed, UTC 1100

[R2-2010740](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010740.zip) CR for Unaligned CA in TS 38.331 CMCC,MediaTek Inc. CR Rel-16 38.331 16.2.0 2212 1 C LTE\_NR\_DC\_CA\_enh-Core [R2-2010379](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010379.zip)

[R2-2010741](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010741.zip) CR for Unaligned CA in TS 38.306 CMCC,MediaTek Inc. CR Rel-16 38.306 16.2.0 0447 1 C LTE\_NR\_DC\_CA\_enh-Core [R2-2010380](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010380.zip)

Web Conf (1)

Other unaligned CA corrections:

[R2-2008968](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008968.zip) Clarification of NR-DC with unaligned CA Qualcomm Incorporated discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

*Proposal 1: In Rel-16, clarify that at most one non-zero offset across cell groups in NR-DC + unaligned CA, and unaligned CA is supported only in one of cell groups in NR-DC.*

*Proposal 2: Introduce a new UE capability for the support for NR-DC with unaligned CA in one CG only.*

Dicussion

- QC indicates RAN1 is also discussing this so we could wait.

* Postponed (wait for RAN1 discussion to conclude)

Web Conf (2+1)

Toffset:

[R2-2010025](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010025.zip) Missing fields for Toffset coordination Ericsson, Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.2.0 2163 - F LTE\_NR\_DC\_CA\_enh-Core

* Agreed

[R2-2010115](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010115.zip) Remaining issues on Toffset for NR-DC power control Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

Discussion

- ZTE prefers the Huawei CR and wonders if we do the same for other fields introduced in Rel-16, e.g. measurement fields? Huawei thinks the existing field can be used.

- Ericsson thinks a separate value is clearer and easier for implementation as different fields have different meaning instead of one field having multiple meanings. Nokia agrees.

- Samsung thinks e.g. for band combinations we have separate fields so would prefer that as cleaner approach.

FR2 maximum power:

[R2-2010027](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010027.zip) Correction on p-UE-FR2 for NR-DC power control Ericsson, NTTDOCOMO CR Rel-16 38.331 16.2.0 2165 - F LTE\_NR\_DC\_CA\_enh-Core Revised

[R2-2010112](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010112.zip) Correction on p-UE-FR2 for NR-DC power control Ericsson, NTTDOCOMO CR Rel-16 38.331 16.2.0 2165 1 F LTE\_NR\_DC\_CA\_enh-Core [R2-2010027](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010027.zip)

[R2-2010340](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010340.zip) Correction on p-UE-FR2 for NR-DC power control in FR2 Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2207 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010291](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010291.zip) Correction on p-UE-FR2 in NR-DC power control vivo CR Rel-16 38.331 16.2.0 2201 - F LTE\_NR\_DC\_CA\_enh-Core

* Revised in [R2-2010743](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010743.zip) (see below)

**Discussion (based on all above Tdocs)**

- Apple is fine with UE ignoring but how does UE know this should be ignored? We can always add a new field. OPPO and QC thinks we can just dummify the field. vivo agrees as RAN4 will not modify this in Rel-17.

- Huawei thinks we could keep the field as Ericsson proposed. However, inter-node message should also be considered. Nokia thinks we didn't dummify this in Rel-15 either so should follow the same principle. LGE and ZTE agree.

- Ericsson thinks the same should apply also for p-NR-FR2.

- Samsung wonders if the UE requirement is intentional?

- Apple wonders if the inter-node message could introduce ambiguity?

* We keep the field (i.e. not dummify)
* Discuss whether inter-node message information is needed
* Discuss if the same should apply also for p-NR-FR2

By Email [225]

* [AT112-e][225][NR][DCCA] Correction on FR2 maximum power for NR-DC power control (vivo)

Scope:

* + - Provide CRs on FR2 power limit based on RAN4 LS abnd Tdocs [R2-2010291](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010291.zip), [R2-2010112](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010112.zip), and [R2-2010340](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010340.zip).

Intended outcome:

* + - Agreeable CRs to 38.331 in [R2-2010743](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010743.zip) (revision of [R2-2010291](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010291.zip))

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Final CRs: 2nd week Wed, UTC 1100

By Email [225]

[R2-2010743](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010743.zip) Correction on p-UE-FR2 in NR-DC power control vivo CR Rel-16 38.331 16.2.0 2201 1 F LTE\_NR\_DC\_CA\_enh-Core [R2-2010291](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010291.zip)

By Email [220] (3)

Miscellaneous DCCA corrections:

[R2-2010026](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010026.zip) Correction on sk-counter in RRCResume Ericsson CR Rel-16 38.331 16.2.0 2164 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2009354](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009354.zip) Miscellaneous corrections for Rel-16 DCCA in 38.331 CATT CR Rel-16 38.331 16.2.0 2057 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010120](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010120.zip) Miscellaneous corrections for DCCA Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4497 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2009415](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009415.zip) Correction on tdm-PatternConfig2 configuration upon MR-DC Release MediaTek Inc. CR Rel-16 36.331 16.2.1 4462 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 220

By Email [222] (2)

Resume with SCG:

[R2-2010116](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010116.zip) Correction on SCG-related fields in RRCConnection Resume Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4495 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010121](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010121.zip) Corrections for resume with SCG Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2179 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 222
* [AT112-e][222][DCCA] Miscellaneous DCCA corrections and capabilities (Ericsson)

Scope:

* + - Discuss DCCA corrections under 6.8.4 marked for this discussion to see which CRs could be agreeable

Intended outcome:

* + - Discussion summary in [R2-2010732](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010732.zip) (by email rapporteur).

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010732](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010732.zip)): 2nd week Mon, UTC 13:00

Web Conf 2nd week (222 summary)

[R2-2010732](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010732.zip) Summary of [AT112-e][222][DCCA] Miscellaneous DCCA corrections and capabilities (Ericsson) Ericsson discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

*Proposal 1* [*R2-2010116*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010116.zip) *can be agreed with changes. Remove change 5. Revision needed.*

*Proposal 2 Changes 1a) and 2 of* [*R2-2010121*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010121.zip) *are merged into 38.331 rapporteur CR.*

*Proposal 3 Changes in* [*R2-2010117*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010117.zip) *are modified and merged into 38.331 rapporteur CR.*

*Proposal 4* [*R2-2010566*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010566.zip) *is not agreed.*

*Proposal 5 Changes in* [*R2-2010650*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010650.zip) *are merged into 36.331 rapporteur CR.*

*Proposal 6* [*R2-2010122*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010122.zip) *can be agreed with changes. Change second “if” statement to “else”. Revision needed.*

*Proposal 7* [*R2-2010256*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010256.zip) *is not agreed.*

*Proposal 8* [*R2-2010028*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010028.zip) *can be agreed with changes. Revision needed.*

*Proposal 9* [*R2-2010118*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010118.zip) *is agreed.*

*Proposal 10* [*R2-2010119*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010119.zip) *is agreed.*

*Proposal 11* [*R2-2010031*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010031.zip) *and* [*R2-2010032*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010032.zip) *are agreed.*

*Proposal 12 Changes in* [*R2-2009666*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009666.zip) *are merged into 36.331 rapporteur CR.*

*Proposal 13* [*R2-2010030*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010030.zip) *can be agreed with changes. Revision needed.*

*Proposal 14 Dummify the capability crossCarrierScheduling-OtherSCS. This requires corresponding CRs to 38.306 and 38.331 for Rel-15 and Rel-16.*

By Email [222] (5)

Fast MCG recovery:

[R2-2010117](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010117.zip) Correction for fast MCG link recovery via SRB3 in NR-DC Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2177 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010566](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010566.zip) Clarification on ULInformationTransferMRDC Google Inc. CR Rel-16 38.331 16.2.0 2247 - F NR\_Mob\_enh-Core, LTE\_NR\_DC\_CA\_enh-Core

[R2-2010650](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010650.zip) Corrections on messages encapsulated in ULInformationTransferMRDC Samsung R&D Institute UK CR Rel-16 36.331 16.2.1 4527 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010122](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010122.zip) Correction for fast MCG link recovery in (NG)EN-DC Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2180 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010255](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010255.zip) UE information transmission in LTE fast MCG recovery case SHARP Corporation discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

[R2-2010256](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010256.zip) Clarification on UE information transmission in fast MCG recovery case(36.331) SHARP Corporation CR Rel-16 36.331 16.2.1 4504 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 222

By Email [222] (1)

Missing RRC processing delay requirements:

[R2-2010028](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010028.zip) Processing delay requirements for DLInformationTransferMRDC Ericsson CR Rel-16 38.331 16.2.0 2166 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010118](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010118.zip) Processing delay requirements for RRC resume Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2178 - C LTE\_NR\_DC\_CA\_enh-Core

[R2-2010119](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010119.zip) Processing delay requirements for RRC resume Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4496 - C LTE\_NR\_DC\_CA\_enh-Core

* Offline 222

Withdrawn:

[R2-2009414](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009414.zip) Correction on tdm-PatternConfig2 configuration upon MR-DC Release MediaTek Inc. CR Rel-16 38.331 16.2.0 2072 - F LTE\_NR\_DC\_CA\_enh-Core Withdrawn

### 6.8.5 UE capabilities

By Web Conf (2+2)

Beam-level measurement capabilities:

[R2-2009437](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009437.zip) Capability for beam level NR early measurement reporting MediaTek Inc. CR Rel-16 36.331 16.2.1 4463 - F LTE\_NR\_DC\_CA\_enh-Core

* Revised in [R2-2010744](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010744.zip)

[R2-2009438](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009438.zip) Capability for beam level NR early measurement reporting MediaTek Inc. CR Rel-16 36.306 16.2.0 1791 - F LTE\_NR\_DC\_CA\_enh-Core

* Revised in [R2-2010745](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010745.zip)

[R2-2010341](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010341.zip) Adding UE capability for beam level early measurement reporting (36331) Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4510 - F LTE\_NR\_DC\_CA\_enh-Core

* Merged to [R2-2010744](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010744.zip)

[R2-2010342](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010342.zip) Adding UE capability for beam level early measurement reporting (36306) Huawei, HiSilicon CR Rel-16 36.306 16.2.0 1797 - F LTE\_NR\_DC\_CA\_enh-Core

* Merged to [R2-2010745](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010745.zip)

**Discussion (of all above)**

- Chair notes that both CRs are very similar.

- Nokia slightly prefers the MediaTek version. ZTE thinks MediaTek CR is for SSB-based and beam-based measurements.

- Samsung wonders if TDD/FDD differentiation is needed? MediaTek indicates it's not needed just as before for beam-level measurements. Apple thinks UE can just not indicate EMR if it doesn't have them so capability may not be needed.

By Email [226]

* [AT112-e][226][NR][DCCA] Capability for beam level NR early measurement reporting (MediaTek)

Scope:

* + - Merge content from CRs [R2-2009437](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009437.zip)/ [R2-2009438](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009438.zip) and [R2-2010341](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010341.zip)/ [R2-2010342](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010342.zip)

Intended outcome:

* + - Agreeable CRs to 36.331 in [R2-2010744](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010744.zip) (revision of [R2-2009437](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009437.zip)) and 36.306 in [R2-2010745](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010745.zip) (revision of [R2-2009438](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009438.zip))

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Final CRs: 2nd week Wed, UTC 1100

[R2-2010744](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010744.zip) Capability for beam level NR early measurement reporting MediaTek Inc. CR Rel-16 36.331 16.2.1 4463 1 F LTE\_NR\_DC\_CA\_enh-Core [R2-2009437](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009437.zip)

[R2-2010745](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010745.zip) Capability for beam level NR early measurement reporting MediaTek Inc. CR Rel-16 36.306 16.2.0 1791 1 F LTE\_NR\_DC\_CA\_enh-Core [R2-2009438](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009438.zip)

By Email [227] (4)

Direct Scell activation capabilities:

[R2-2009186](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009186.zip) Correction to 36.306 on UE capability of direct SCell activation Qualcomm Incorporated, Ericsson CR Rel-16 36.306 16.2.0 1790 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2009187](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009187.zip) Correction to 36.331 on UE capability of direct SCell activation Qualcomm Incorporated, Ericsson CR Rel-16 36.331 16.2.1 4456 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010114](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010114.zip) UE capability of direct E-UTRAN SCG SCell activation Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

[R2-2009554](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009554.zip) Direct Scell activation capability Nokia, Nokia Shanghai Bell discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

* No time to treat online, handle in email discussion [227]
* [AT112-e][227][NR][DCCA] Remaining capability topics for DCCA (Ericsson)

Scope:

* + - Discuss DCCA corrections under 6.8.5 marked for the discussion to see which CRs could be agreeable. Can also consider RAN1 input (if any arrives on time).

Intended outcome:

* + - Discussion summary in [R2-2010746](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010746.zip) (by email rapporteur).

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 2nd week Thu, UTC 1000
    - Initial deadline (for rapporteur's summary in [R2-2010746](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010746.zip)): 2nd week Thu, UTC 14:00

By Web Conf (227 summary)

[R2-2010746](C:\\Users\\terhentt\\Documents\\Tdocs\\RAN2\\RAN2_112-e\\R2-2010746.zip) Summary of [AT112-e][227][NR][DCCA] Remaining capability topics for DCCA (Ericsson) Ericsson discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

By Email [227] (2)

NR-DC cell group signalling in capabilities:

[R2-2010029](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010029.zip) Cell group filtering for NR-DC Ericsson discussion LTE\_NR\_DC\_CA\_enh-Core

* No time to treat online, handle in email discussion [227]

[R2-2010593](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010593.zip) MCG and SCG differentiation in asynchronous NR-DC Samsung Electronics discussion Rel-16

*(moved from 6.1.2)*

* No time to treat online, handle in email discussion [227]

By Email [222] (2)

Capability naming for EMR:

[R2-2010031](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010031.zip) Correction on early measurement capabilities Ericsson CR Rel-16 36.306 16.2.0 1795 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010032](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010032.zip) Correction on early measurement capabilities Ericsson CR Rel-16 36.331 16.2.1 4493 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 222

By Email [222] (2)

[R2-2009666](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009666.zip) Adding missing field descriptions of Multi-RAT DC and CA enhancements capabilities Lenovo, Motorola Mobility CR Rel-16 36.331 16.2.1 4474 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010030](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010030.zip) Clarification on cross-carrier A-CSI triggering capability Ericsson CR Rel-16 38.306 16.2.0 0437 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010343](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010343.zip) Clarification on UE capability of cross-carrier scheduling with different numerologies Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

*(moved from 6.1.2)*

* Offline 222

# 7 Rel-16 EUTRA Work Items

Essential corrections

## 7.1 EUTRA Rel-16 General

No documents should be submitted to 7.1. Please submit to.7.1.x

Editorial corrections should be taken up with the specification editor before submitting to avoid CR duplication.

### 7.1.1 Cross WI RRC corrections

Including [Post111-e][928][LTE16] EUTRA Parameter Names Consolidation (Samsung)

Web Conf 2nd week (1)

Result of [Post111-e][928][LTE16] EUTRA Parameter Names Consolidation (Samsung):

[R2-2009608](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009608.zip) Updated consolidated parameter list for Rel-16 LTE Samsung discussion Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core, LTE\_DL\_MIMO\_EE-Core, LTE\_terr\_bcast-Core

- QC comments that the current list might not be 100% exhaustive. If we find something more, we can inform RAN1 again.

* Endorsed

[R2-2009609](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009609.zip) Reply LS on updated Rel-16 LTE parameter lists RAN2 LS out Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core, LTE\_DL\_MIMO\_EE-Core, LTE\_terr\_bcast-Core To:RAN WG1, RAN WG4

* Approved

### 7.1.2 Feature Lists and UE capabilities

Web Conf 2nd week (1)

LSs from RAN1/RAN4 on UE feature lists for LTE:

[R2-2008703](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008703.zip) LS on updated Rel-16 RAN1 UE features list for LTE (R1-2007139; contact: NTT DoCoMo, AT&T) RAN1 LS in Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core, LTE\_DL\_MIMO\_EE-Core, LTE\_terr\_bcast-Core, 5G\_V2X\_NRSL-Core, TEI16 To:RAN2 Cc:RAN4

[R2-2008709](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008709.zip) LS on updated Rel-16 RAN1 UE features lists for LTE (R1-2007329; contact: NTT DoCoMo, AT&T) RAN1 LS in Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core, LTE\_DL\_MIMO\_EE-Core, LTE\_terr\_bcast-Core, 5G\_V2X\_NRSL-Core, TEI16 To:RAN2 Cc:RAN4

[R2-2008742](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008742.zip) LS on Rel-16 updated RAN4 UE features lists for LTE and NR (R4-2011929; contact: CMCC) RAN4 LS in Rel-16 To:RAN2 Cc:RAN1

* Noted

## 7.4 Even further mobility enhancement in E-UTRAN

(LTE\_feMob-Core; leading WG: RAN2; REL-16; started: Jun 18; Completed: June 20; WID: RP-190921)

No documents should be submitted to 7.4. Please submit to.7.4.x

Documents under 7.4 will be treated together with documents in 6.7

Editorial corrections should be taken up with the specification editor before submitting to avoid CR duplication.

### 7.4.1 General and Stage-2 Corrections

Including incoming LSs (if any)

By Email (1)

[R2-2008717](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008717.zip) LS response on power sharing for LTE mobility enhancements (R1-2007420; contact: Ericsson) RAN1 LS in Rel-16 LTE\_feMob-Core To:RAN2

* Not flagged
* Contributions submitted under 7.4.3, handled via email discussion [212]
* Noted

By Email [210] (4)

DAPS Stage-2:

[R2-2010207](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010207.zip) Correction for the definition of DAPS handover (36.300) SHARP Corporation CR Rel-16 36.300 16.3.0 1327 - F LTE\_feMob-Core

[R2-2010208](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010208.zip) Correction for the definition of DAPS handover (38.300) SHARP Corporation CR Rel-16 38.300 16.3.0 0316 - F NR\_Mob\_enh-Core

[R2-2009765](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009765.zip) Clarification on no DAPS HO in MR-DC Nokia, Nokia Shanghai Bell CR Rel-16 36.300 16.3.0 1301 1 F LTE\_feMob-Core [R2-2007358](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007358.zip)

*(moved from 7.4.2)*

[R2-2010507](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010507.zip) Clarifications on DAPS and conditional handover for LTE-5GC Ericsson CR Rel-16 36.300 16.3.0 1329 - F LTE\_feMob-Core

*(moved from 7.4.2)*

* Offline 210

### 7.4.2 DAPS handover Corrections

This AI jointly addresses corrections to NR and LTE DAPS.

Including corrections to control and user plane for DAPS HO.

Including discussion on how to avoid mTRP usage during DAPS HO as per RAN#89e discussion.

Web Conf (1)

PHR restrictions for DAPS HO:

[R2-2010498](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010498.zip) Restriction on PHR for DAPS Ericsson, China Telecom, LG Electronics Inc., Nokia, Nokia Shanghai-Bell, MediaTek, Vivo, CATT CR Rel-16 36.331 16.2.1 4516 - F LTE\_feMob-Core

*(moved from 7.4.3)*

Discussion

- ZTE wonders if we need the same CR for NR as well?

- QC wonders if we should only preclude dualConnectivityPHR? Ericsson thinks all of these should be changed. Intel clarifies extended is only used if there is more than one cell.

* Postponed (offline checking)
* CB: Companies are encouraged to check if also NR RRC requires something

Web Conf (4+3)

How to avoid mTRP usage during DAPS HO (as per RAN#89e discussion):

[R2-2009770](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009770.zip) Prohibiting simultaneous DAPS and multi-TRP operation Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core

*Proposal 1: Clarify in RRC that DAPS is not allowed to be configured if UE is currently operating under BWP that uses multi-TRP operation (either single-DCI or multi-DCI).*

*Proposal 2: Clarify in MAC that UE behaviour for using SDM-based multi-TRP during DAPS handover is not specified.*

*Proposal 3: Agree to CRs containing the MAC and RRC TPs in this document.*

[R2-2009559](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009559.zip) Handling of SCells and mTRP during DAPS HO Qualcomm Incorporated discussion

*Observation 1: DAPS HO is only applicable to PCell. However, this important requirement is captured only as a single Note in Stage-2 and thus is not part of normative specification.*

*Observation 2: RAN2 agreement to capture DAPS as PCell only in UE capability was not implemented.*

*Observation 3: Source SCells cannot be released in HO command for DAPS HO since a separate RRC message is needed.*

*Observation 4: The additional RRC message from the source gNB to release SCells will incur unnecessary additional overhead and possibly delay the HO.*

*Proposal 1: For DAPS HO, if the source SCells are not released before the HO command, the UE shall release SCells upon reception of the HO command.*

*Observation 5: Similar to CA, mTRP can only be released by a separate RRC message other than HO command.*

*Proposal 2: For DAPS HO, if the source mTRP is not released before the HO command, the UE shall release source mTRP upon reception of the HO command.*

*Observation 6: RAN2 has agreed that SCells are not configured for target gNB for DAPS HO. The same can be applied to mTRP.*

*Proposal 3: For DAPS HO, mTRP is not configured for target cell in the HO command.*

*Observation 7: If SCells are configured at the target gNB before source release, this conflicts with the RAN2 agreement in Observation 3.*

*Proposal 4: For DAPS HO, capture in RRC that SCells for target gNB are not configured before source cell is released.*

*Observation 8: Even though RAN2 has agreed that DC operation is not used during DAPS HO, this is not clearly captured in RRC.*

*Proposal 5: For DAPS HO, capture in RRC that SCG configuration for target gNB is not included in the HO command.*

*Observation 9: Similar to CA, SN should be released before applying the HO command during DAPS HO.*

*Proposal 6: For DAPS HO, if SN configuration is not released by the source gNB, the UE shall perform MR-DC release upon reception of the HO command.*

[R2-2010640](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010640.zip) Discussion on releasing source MCG SCells and mTRP Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

[R2-2009607](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009607.zip) Release of mTRP operation before DAPS handover Samsung discussion Rel-16 NR\_Mob\_enh-Core

*(moved from 6.7.5)*

[R2-2010105](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010105.zip) Clarification of SCells, mTRP, and DC during DAPS HO Qualcomm Incorporated CR Rel-16 38.331 16.2.0 2176 - F NR\_Mob\_enh-Core

Discussion

- Intel thinks everyone agrees that mTRP cannot be agreed in DAPS HO command. Otherwise some want to release mTRP before DAPS HO, or NW releases mTRP in DAPS HO, or UE releases mTRP autonomously. NW can anyway already release mTRP before DAPS HO.

- MediaTek doesn't prefer UE autonomous release since UE normally doesn't release configurations. OPPO and ZTE also prefer to let NW handle the co-existence and no autonomous release. Apple, vivo and LGE also think NW should handle this. Ericsson thinks NW release is the baseline as we always avoid autonomous release. Samsung agrees.

- Huawei prefers autonomous release to avoid delay in DAPS HO to avoid HO failure or call drops. This would require a separate RRC message, which is undesirable. Also for SCell release, UE releases things autonomously. QC agrees but is fine with NW release.

- Nokia would like to clarify what we release: ASN.1 configuration or something else? QC clarifies it's more about deactivation than configuration release but both should occur.

- Intel would be fine with NW explicit release even though they prefer autonomous release. Wonders if UE would still reserve resources if feature is deactivated? MTK agrees and thinks deactivation doesn't work. Nokia thinks what matters is that UE doesn't use mTRP simultaneously with DAPS.

- Samsung clarifies that for single-DCI mTRP, the TCI state can be released by RRC and there is some control over it.

* Network ensures that multi-TRP does not operate simultaneously with DAPS HO. This will typically require network to do RRC reconfiguration before sending DAPS HO command.
* FFS how to capture this in Stage-2 and Stage-3, handled in Offline 214

[R2-2009383](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009383.zip) Clarification on no support of multi-TRP with DAPS HO - 38.331 ZTE Corporation, Sanechips, Ericsson CR Rel-16 38.331 16.2.0 2061 - F NR\_Mob\_enh-Core

* Revised in [R2-2010750](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010750.zip) (Offline 214)

[R2-2009384](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009384.zip) Clarification on no support of multi-TRP with DAPS HO - 38.300 ZTE Corporation, Sanechips, Ericsson CR Rel-16 38.300 16.3.0 0307 - F NR\_Mob\_enh-Core

* Revised in [R2-2010748](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010748.zip) (Offline 214)

By Email [214]

* [AT112-e][214][NR][MOB] Avoiding DAPS with multi-TRP/CA/DC (ZTE)

Scope:

* + - Discuss the CRs under AI 4.5, 7.1.X and 7.5 marked for this email discussion

Intended outcome:

* + - Agreeable Stage-2 CRs in [R2-2010748](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010748.zip) (38.300, revision of [R2-2009384](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009384.zip)) and [R2-2010747](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010747.zip) (36.300, revision of [R2-2009382](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009382.zip)),
    - Agreeable Stage-3 CRs in [R2-2010749](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010749.zip) (36.331, revision of [R2-2009769](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009769.zip)) and [R2-2010750](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010750.zip) (38.331, revision of [R2-2009383](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009383.zip))

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 2nd week Thu, UTC 1000
    - Deadline for CR finalization: 2nd week Thu, UTC 1700

CRs from [214]

[R2-2010747](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010747.zip) Clarification on no support of CA or DC with DAPS ZTE Corporation CR Rel-16 36.300 16.3.0 1320 1 F LTE\_feMob-Core [R2-2009382](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009382.zip)

[R2-2010748](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010748.zip) Clarification on no support of CA, DC or multi-TRP with DAPS ZTE Corporation CR Rel-16 38.300 16.3.0 0307 1 F NR\_Mob\_enh-Core [R2-2009384](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009384.zip)

[R2-2010750](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010750.zip) Clarification on no support of CA, DC or multi-TRP with DAPS ZTE Corporation CR Rel-16 38.331 16.2.0 2061 1 F NR\_Mob\_enh-Core [R2-2009383](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009383.zip)

[R2-2010749](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010749.zip) Clarification on no support of CA or DC with DAPS ZTE Corporation CR Rel-16 36.331 16.2.1 4486 1 F LTE\_feMob-Core [R2-2009769](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009769.zip)

Web Conf (3+4)

Release of SCells during DAPS HO:

[R2-2009381](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009381.zip) Clarification on SCells and SCG release in DAPS HO - 38.300 ZTE Corporation, Sanechips, Ericsson CR Rel-16 38.300 16.3.0 0306 - F NR\_Mob\_enh-Core

[R2-2009768](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009768.zip) Draft 38331 CR SCells during DAPS HO Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.2.0 2126 - F NR\_Mob\_enh-Core

[R2-2009272](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009272.zip) Release SCells/SCG configuration during DAPS HO Intel Corporation discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

*Proposal 1: To clarify in RRC specification “release” of the configuration is applied for both source and target configuration, i.e. the UE shall release the configuration for both and target side.*

*Proposal 2:To add the RRC specification, “other configuration”, “SpCell Configuration” in DAPS handover command is applied for target side;*

*Proposal 3: Confirm original agreements, conditional reconfiguration, MR-DC, SCells, Tag, SRB3, SCG can be released in DAPS handover command;*

*Proposal 4: UE releases mTRP autonomously upon receiving DAPS HO command;*

[R2-2009767](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009767.zip) On how to release SCells when DAPS HO is configured Nokia, Nokia Shanghai Bell discussion Rel-16 LTE\_feMob-Core

[R2-2009380](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009380.zip) Discussion on SCells and SCG release in DAPS HO ZTE Corporation, Sanechips, Ericsson discussion Rel-16

Discussion

- Intel thinks we could use the same approach as for multi-TRP. Ericsson agrees and thinks source releases SCells before DAPS HO. QC thinks target configuration releasing source would be almost autonomous release. Nokia agrees and thinsk DAPS HO would only release target SCells and not the source SCells. Intel thinks UE still needs to maintain the resources for Scells if they are not released.

- MediaTek thinks it's still possible for NW to release the SCells before DAPS HO command.

- Huawei thinks if NW has to release SCells before DAPS HO, there will be no issues in target cell configuration. Then how do we handle previous agreement of UE releasing SCells during HO command?

- QC wonders if we allow delta configuration in DAPS? Chair thinks we do. Intel wonders if we should also disallow CHO being configured?

- Nokia thinks it would be better to allow UE to release source SCells during DAPS HO since source is anyway released after the DAPS HO.

* Network ensures that SCG and/or SCells are not configured when UE receives DAPS HO. This will typically require network to do RRC reconfiguration before sending DAPS HO command.
* Offline 214 to discuss if we add to the RRC specification that “other configuration”, “SpCell Configuration” in DAPS handover command is applied for target side
* Offline 214 to capture the agreement in Stage-2 and Stage-3

[R2-2009382](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009382.zip) Clarification on SCells and SCG release in DAPS HO - 36.300 ZTE Corporation, Sanechips, Ericsson CR Rel-16 36.300 16.3.0 1320 - F LTE\_feMob-Core

* Revised in [R2-2010747](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010747.zip)(Offline 214)

[R2-2009769](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009769.zip) Draft 36331 CR SCells during DAPS HO Nokia, Nokia Shanghai Bell CR Rel-16 36.331 16.2.1 4486 - F LTE\_feMob-Core

* Revised in [R2-2010750](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010750.zip) (Offline 214)

Web Conf 2nd week (2)

Key change during DAPS HO:

[R2-2009275](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009275.zip) Support of DAPS handover without key change Intel Corporation, Ericsson discussion Rel-16 NR\_Mob\_enh-Core [R2-2006935](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2006935.zip)

[R2-2010328](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010328.zip) DAPS HO without security key change LG Electronics Inc. discussion LTE\_feMob-Core

[R2-2010209](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010209.zip) Potential security issue on DAPS handover with key change failure SHARP Corporation discussion Rel-16 NR\_Mob\_enh-Core [R2-2007790](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007790.zip)

[R2-2010210](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010210.zip) [Draft] LS to SA3 on security handling for DAPS handover SHARP Corporation LS out Rel-16 NR\_Mob\_enh-Core [R2-2007791](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007791.zip) To:SA3

* Online (Tue or Fri 2nd week)

Web Conf 2nd week (1)

Timing of source PCell release after HO completion

[R2-2010639](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010639.zip) Discussion on source release indication Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

* Online (Tue or Fri 2nd week)

By Email [213] (1+7)

Rapporteur CRs:

[R2-2009276](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009276.zip) Miscellaneous corrections for Mobility Enhancements Intel Corporation (Rapporteur), Ericsson CR Rel-16 38.331 16.2.0 2050 - F NR\_Mob\_enh-Core

*Miscellaneous RRC CRs:*

[R2-2010504](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010504.zip) Miscellaneous mobility-related corrections Ericsson, ETRI CR Rel-16 36.331 16.2.1 4518 - F LTE\_feMob-Core

[R2-2009535](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009535.zip) Corrections on DAPS in 36.331 CATT,Ericsson CR Rel-16 36.331 16.2.1 4467 - F LTE\_feMob-Core

[R2-2009534](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009534.zip) Correction on Source Cell Group and Source SpCell on DAPS CATT,Ericsson CR Rel-16 38.331 16.2.0 2087 - F NR\_Mob\_enh-Core

[R2-2010297](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010297.zip) Correction on reestablishRLC for DAPS Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2203 - F NR\_Mob\_enh-Core

[R2-2010505](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010505.zip) Release source cell configuration at DAPS handover Ericsson CR Rel-16 38.331 16.2.0 2231 - F NR\_Mob\_enh-Core

[R2-2010506](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010506.zip) DAPS handover for bearers configured with NR PDCP Ericsson CR Rel-16 36.331 16.2.1 4519 - F LTE\_feMob-Core

[R2-2010435](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010435.zip) Correction on DAPS OPPO CR Rel-16 38.331 16.2.0 2222 - F NR\_Mob\_enh-Core

* Offline 213
* [AT112-e][213][MOB] DAPS RRC corrections (Ericsson)

Scope:

* + - Discuss which DAPS RRC corrections to LTE and NR are seen necessary and provide merged CRs with agreeable corrections (if any)

Intended outcome:

* + - Discussion summary in [R2-2010727](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010727.zip) (by email rapporteur).
    - Merged CRs to 36.331 ([R2-2010728](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010728.zip)) and 38.331 ([R2-2010729](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010729.zip)) (if any)

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010727](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010727.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000

Web Conf 2nd week (213 summary)

[R2-2010727](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010727.zip) [AT112-e][213][MOB] DAPS RRC corrections Ericsson discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

*Proposal 1 Changes in R2-2009665 are agreed and merged in R2-2010729.*

*Proposal 2 R2-2010415 is not pursued*

*Proposal 3 Changes in R2-2009276 are agreed and merged in R2-2010729.*

*Proposal 4 Changes in R2-2010504 are agreed and merged in R2-2010728.*

*Proposal 5 Merge in to R2-2010728 the change from R2-2009535 which adds "2> release the physical channel configuration for the target PCell".*

*Proposal 6 The other changes from R2-2009535 are not pursued.*

*Proposal 7 Capture in R2-2010729 the changes from R2-2009534 and R2-2010505 which removes "release target [or source] PCell [or SpCell] configuration" from 5.3.5.3, 5.3.7.2 and 5.3.5.8.3 since this is covered by "release the physical channel configuration for the target [or source] SpCell [or PCell]".*

*Proposal 8 The other changes from R2-2009534 are not pursued.*

*Proposal 9 R2-2010435 is not pursued.*

*Proposal 10 R2-2010297 is not pursued.*

*Proposal 11 RAN2 should confirm whether or not DAPS is supported for LTE connected to 5GC, if supported, this CR is agreed and merged into R2-2010728.*

*Proposal 12 The UE does nothing in case the DataInactivityTimer associated with the source expires during DAPS (approach b).*

*Proposal 13 Merge the TPs of R2-2010501 into R2-2010728 and R2-2010729.*

*Proposal 14 No change is needed w.r.t. starting of the DataInactivityTimer.*

*Proposal 15 R2-2010294 and R2-2010295 are not pursued.*

*Proposal 16 Keep "release the source connection".*

*Proposal 17 Change in 5.3.10.3 of 38.331 to "3> suspend the transmission and reception of all DRBs in the source MCG;" in R2-2010729.*

CRs from [213]

[R2-2010728](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010728.zip) Miscellaneous corrections for DAPS (LTE) Ericsson CR Rel-16 36.331 16.2.1 4532 - F LTE\_feMob-Core

[R2-2010729](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010729.zip) Miscellaneous corrections for DAPS (NR) Ericsson CR Rel-16 38.331 16.2.0 2282 - F NR\_Mob\_enh-Core

By Email [213] (2)

DataInactivityTimer:

[R2-2009654](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009654.zip) Handling of expiry of dataInacticityTimer for DAPS NEC discussion Rel-16 LTE\_feMob-Core

[R2-2010501](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010501.zip) Handling of dataInactivityTimer for DAPS Ericsson discussion

* Offline 213

By Email [213] (2)

DAPS RLF handing:

[R2-2010294](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010294.zip) Correction on RLF handling in DAPS Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2202 - F NR\_Mob\_enh-Core

[R2-2010295](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010295.zip) Correction on RLF handling in DAPS Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4506 - F LTE\_feMob-Core

[R2-2010499](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010499.zip) RLF in source during DAPS Ericsson discussion

* Offline 213

### 7.4.3 UE capability corrections

Including UE capability aspects of LTE mobility WI that are LTE-specific.

By Email [212] (2)

UL power sharing for LTE DAPS:

[R2-2010298](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010298.zip) Correction on LTE DAPS UE capability Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4507 - F LTE\_feMob-Core

[R2-2010299](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010299.zip) Correction on LTE DAPS UE capability Huawei, HiSilicon CR Rel-16 36.306 16.2.0 1796 - F LTE\_feMob-Core

[R2-2010502](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010502.zip) Introducing power sharing for DAPS handover Ericsson, Qualcomm CR Rel-16 36.306 16.2.0 1798 - F LTE\_feMob-Core

=> Revised in [R2-2010681](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010681.zip)

[R2-2010681](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010681.zip) Introducing power sharing for DAPS handover Ericsson, Qualcomm, Huawei CR Rel-16 36.306 16.2.0 1798 1 F LTE\_feMob-Core

[R2-2010503](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010503.zip) Introducing power sharing for DAPS handover Ericsson, Qualcomm CR Rel-16 36.331 16.2.1 4517 - F LTE\_feMob-Core

=> Revised in [R2-2010682](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010682.zip)

[R2-2010682](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010682.zip) Introducing power sharing for DAPS handover Ericsson, Qualcomm, Huawei CR Rel-16 36.331 16.2.1 4517 1 F LTE\_feMob-Core

* Offline 212

By Email [212] (1)

LTE DAPS capabilities:

[R2-2009188](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009188.zip) Clarifications to LTE DAPS capabilities Nokia, Nokia Shanghai Bell discussion Rel-16 LTE\_feMob-Core

* Offline 212

### 7.4.4 Other corrections

Only corrections not fitting other agenda items.

Including CHO aspects that are LTE-specific without equivalent NR impacts:

By Email [211] (2)

[R2-2010641](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010641.zip) Cell selection upon RRCConnectionReestablishment Samsung R&D Institute UK CR Rel-16 36.331 16.2.1 4525 - F LTE\_feMob-Core

[R2-2010645](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010645.zip) Miscellaneous corrections on LTE CHO procedures Samsung R&D Institute UK CR Rel-16 36.331 16.2.1 4526 - F LTE\_feMob-Core

* Offline 211

## 7.5 LTE Other WIs

(LTE\_terr\_bcast-Core, LTE\_DL\_MIMO\_EE-Core, LTE\_high\_speed\_enh2-Core; LTE TEI16 Non-positioning)

(Documents relating to Rel-16 LTE but for which there is no existing RAN WI/SI, e.g. LSs from CT/SA requesting RAN2 action)

Editorial corrections should be taken up with the specification editor before submitting to avoid CR duplication.

Including TEI16 corrections and issues that do not fit under any other topic.

By Email [202] (2+2)

Stage-2 updates:

[R2-2008704](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008704.zip) LS on Updates to TS 36.300 on terrestrial broadcast (R1-2007154; contact: Qualcomm) RAN1 LS in Rel-16 LTE\_terr\_bcast-Core To:RAN2

[R2-2009446](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009446.zip) CP length and reference signal for MBSFN with sub-carrier spacing of 0.375 KkHz and 2.5 kKHz Qualcomm Inc CR Rel-16 36.300 16.3.0 1322 - F LTE\_terr\_bcast-Core

[R2-2009802](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009802.zip) Miscellaneous Stage-2 corrections Nokia (rapporteur), NEC, Lenovo, Motorola Mobility, Intel Corporation, ZTE, Sanechips, Ericsson CR Rel-16 36.300 16.3.0 1324 - F NB\_IOTenh2-Core, LTE\_eMTC4-Core, NB\_IOTenh3-Core, LTE\_eMTC5-Core, LTE\_feMob-Core, TEI16

* Offline 202

By Email [201] (1)

36.306 updates:

[R2-2009433](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009433.zip) Clarification to Fallback band combination definition Nokia, Nokia Shanghai Bell CR Rel-16 36.306 16.2.0 1782 1 F TEI16 [R2-2007518](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007518.zip)

* Offline 201

36.331 updates:

[R2-2008908](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008908.zip) Corrections to UE capabilities and SIB25 Lenovo, Motorola Mobility, Ericsson CR Rel-16 36.331 16.2.1 4453 - F LTE\_DL\_MIMO\_EE-Core, LTE\_eMTC5-Core, TEI16

[R2-2009385](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009385.zip) Correction on T312 timer information ZTE Corporation, Sanechips CR Rel-16 36.331 16.2.0 4461 - F LTE\_feMob-Core

* Offline 201

By Email [202] (2)

[R2-2008907](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008907.zip) Corrections to UE capabilities Lenovo, Motorola Mobility (Rapporteur) CR Rel-16 36.306 16.2.0 1789 - F NR\_IIOT-Core, LTE\_DL\_MIMO\_EE-Core, LTE\_eMTC5-Core, TEI16

[R2-2009603](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009603.zip) Minor changes collected by Rapporteur Samsung CR Rel-16 36.331 16.2.1 4472 - F LTE\_NR\_DC\_CA\_enh-Core

* Offline 202

# 8 Rel-17 NR Work Items

## 8.2 MR DC CA further enhancements

(LTE\_NR\_DC\_enh2-Core; leading WG: RAN2; REL-17; WID: RP-201040)

Time budget: 1 TU

Tdoc Limitation: 2 tdocs

Email max expectation: 3 threads

No documents should be submitted to 8.2. Please submit to.8.2.x

### 8.2.1 Organizational Requirements and Scope

Including work plan and any other rapporteur input.

### 8.2.2 Efficient activation deactivation mechanism for one SCG and SCells

Including outcome of [Post111-e][919][eDCCA] Efficient activation deactivation of SCG (Huawei)

Web Conf (1)

Outcome of [Post111-e][919][eDCCA] Efficient activation deactivation of SCG (Huawei):

[R2-2010123](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010123.zip) [Post111-e][919][eDCCA] Efficient activation deactivation of SCG Discussion on SCG deactivation and activation Huawei discussion Rel-17 LTE\_NR\_DC\_enh2-Core

**Discussion**

P1&2

- Nokia wonders if this is also possible in HO?

- CATT thinks this is useful for PSCell change but not addition.

P3

- Qualcomm wonders if this means PDCCH is not monitored at all? Apple wonders the same - this might cause problems. Nokia also thinks this may cause some problems but is fine to start with this.

P4:

- Apple wonders if MN-initiated mobility is supportee for PSCell? Ericsson thinks 4a covers this already. LGE agrees and thinks this is the legacy behaviour. OPPO thinks MN-based mobiltiy is also supported. ZTE thinks this was also discussed during email but most companies thought at least Pscell mobility based on SN measurements shuld be supported.

P8:

- Apple thinks this means that this might impact e.g. beam management, timing and RACH. Will it create problems for performance? Huawei thinks SRS is not the only way for timing and beam management but UL is only possible with timing alignment. CATT indicates dormant Scells do not support this but then TA group is there.

- Apple wonders if this means UE will always do RACH at SCG activation? Huawei thinks that UL timing might still be accurate as long as TAT is running so RACH is not always needed. There might be other solutions than SRS as well.

**Agreements**

* The work will focus on a single deactivated SCG.
* FFS if SCG RRC reconfiguration can select the SCG activation state (activated/deactivated) at PSCell addition/change, RRC resume or HO.
* Continue RAN2 work with the assumption that when the SCG is deactivated, the UE does not monitor PDCCH on the PSCell. This assumption can be reconsidered if issues are found.
* As a baseline, MN-configured RRM measurement/reporting procedures do not depend on the SCG activation state (deactivated or activated). Further optimisations are not precluded.
* While the SCG is deactivated, PSCell mobility is supported. MN- and SN-configured measurements are supported for deactivated SCG.
* FFS1: Details on the performed measurements (e.g. all SN configured measurements or subset based on certain criteria, restrictions on inter-frequency/RAT)
* FFS2: Support for SCell addition/mobility
* FFS3: Reporting procedure
* FF4: PSCell mobility procedure
* RAN2 assumes that UE will not perform SRS transmission while the SCG is deactivated. This assumption can be reconsidered if issues are found.
* FFS if RACH is needed for SCG reactivation

**CB: AT-meeting Email discussion (Huawei) on FFS points on agreements: What are the alternatives based on company contributions? If time allows, can also attempt to figure out other FFS points.**

* [AT112-e][230][eDCCA] Progressing FFS points of efficient SCG activation and deactivation (Huawei)

Scope:

* + - Discuss the FFSs from online agreements for Efficient activation deactivation of SCG to understand which alternatives are seen feasible.
    - Can discuss also remaining FFS from email discussion [Post111-e][919] if time allows

Intended outcome:

* + - Discussion summary in [R2-2010733](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010733.zip) (by email rapporteur).

Deadlines:

* + - Rapporteur can set an intermediate deadline for company inputs and/or converging the discussion
    - Deadline for email discussion report: 2nd week Thu, UTC 1000
* CBF: Report of email discussion [230]

By Web Conf (230 summary)

[R2-2010733](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010733.zip) [AT112-e][230][eDCCA] Progressing FFS points of efficient SCG activation and deactivation (Huawei) Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

Web Conf (4)

[R2-2010062](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010062.zip) Efficient SCG (de)activation Ericsson discussion Rel-17

*Proposal 15 Both MN and SN initiated procedures supported.*

*Proposal 6 SCG mobility is supported while SCG is deactivated.*

*Proposal 8 MCG mobility is supported while SCG is deactivated.*

*Proposal 1 RAN2 to study the feasibility maintaining DL fine synchronization for deactivated SCG, e.g. through beam or radio link monitoring.*

*Proposal 4 If SCG is deactivated, UE continues to perform PSCell measurements based on SN configuration.*

*Proposal 5 If SCG is deactivated, FFS whether UE continues to perform SCG SCell measurements.*

*Proposal 7 If SCG is deactivated, UE continues to perform SCG measurements for at least the measId(s) associated to events A3/A5. FFS other measurements.*

*Proposal 9 Discuss, together with RAN4, relaxed RRM measurements requirement for the case the SCG is deactivated.*

*Proposal 10 If SCG is deactivated, UE performs some level of S-RLM and SCG failure information procedure is supported to report the failure. Exact behaviour to be discussed after beam management and CSI for deactivated SCG is defined.*

*Proposal 2 Define a reduced processing time for RRC reconfiguration for activating SCG with limited changes to the SCG configuration.*

*Proposal 3 Send LS to RAN4 to confirm whether Tprocessing = 0ms could be assumed for SCG activation, without cell or frequency change.*

*Proposal 11 If possible, random access should be avoided upon SCG activation. FFS cases where it is possible to avoid random access upon SCG activation.*

*Proposal 12 The UE performs BFD monitoring for deactivated SCG. FFS Discuss actions upon BFD while SCG is deactivated.*

*Proposal 13 Discuss the possibilities to support SCG CSI reporting while SCG is deactivated. FFS how reporting can be enabled e.g. via SCG or MCG.*

*Proposal 14 UE should at least assume UL TA is accurate for deactivated SCG until TA timer expires. FFS whether to actively maintain TA for deactivated SCG.*

[R2-2009439](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009439.zip) Discussion on SCG suspension MediaTek Inc. discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2007867](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007867.zip)

*Observation 1: With the power saving mechanisms introduced in Rel-16, there is limited power saving gain to have PSCell dormancy.*

*Observation 2: There is high specification complexity and requires inter-WG discussion between RAN1 and RAN2 to introduce the PSCell dormancy behavior.*

*Observation 3: For power saving purpose and for thermal protection, PSCell deactivation is simple and efficient.*

*Observation 4: There is a need to have PSCell in deactivated state upon SCG addition and RRC Resume. Thus RRC control of PSCell deactivation is required.*

*Proposal 1: Introduce PSCell deactivation behavior in Rel-17. While the PSCell is deactivated, the UE shall*

*• Deactivate all SCG SCell(s)*

*• Keep the SCG configuration*

*• Does not transmit/receive data on the SCG but continue the RRM measurement on SCG cells*

*• Suspend the SCG transmission for all radio bearers*

*Proposal 2: When a PSCell is deactivated*

*• The UE does not monitor the PDCCH on that PSCell*

*• The UE does not perform RLM/BFD on that PSCell*

*• The UE does not maintain the TA value for the SCG*

*• The UE does not report CSI on the PSCell or for the PSCell*

*Proposal 3: While the PSCell is activated from deactivated state, the UE shall*

*• Trigger RACH to the PSCell*

*• Resume the SCG transmission for all radio bearers*

*Proposal 4: Introduce new RRC signaling to control the activation and deactivation of PSCell. FFS to use MAC CE to control PSCell activation/deactivation.*

[R2-2009547](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009547.zip) On fast deactivation and activation of one SG and SCells Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1: Confirm that NE-DC is not part of the efficient activation/deactivation goal of the WI and no solutions are developed for NE-DC case.*

*Proposal 2: Focus the work on NR-DC SCG activation and deactivation (i.e. NR RRC changes) and only start working on EN-DC use case (i.e. LTE RRC changes) if time allows.*

*Proposal 9: SCG SCells are deactivated whenever SCG is deactivated. Either this is done by explicitly or implicitly*

*Proposal 12: Regular connected mode SIB update mechanisms are used for deactivated SCG*

*Proposal 10: Support RRM (no spec impact) cell and beam measurements and involve RAN4 regarding performance requirements for the RRM measurements for deactivated SCG*

*Proposal 11: Do not support radio link measurements for the deactivated SCG as RRM measurements most likely will be able to provide similar information to the network.*

*Proposal 13: Network needs to be informed about data arrival upon data arrival to bearer(s) mapped to SCG also on deactivated SCG.*

*Proposal 14: MCG makes final decision to deactivate SCG and sends the deactivation command to the UE*

*Proposal 15: Support RRC signaling to deactivate SCG as part of RRCReconfiguration message (FFS whether other layer signalling is supported e.g. MAC/DCI)*

*Proposal 16: Support RRC signaling to activate SCG as part of RRCReconfiguration message.*

*Proposal 17: Support SR/RACH based SCG activation.*

*Proposal 18: When SCG is deactivated NW is not required to release SCG configuration*

*Proposal 19: NW is allowed to reconfigure SCG during deactivation (at least if signaling is done with RRC)*

*Proposal 3: No PDCCH monitoring for deactivated SCG.*

*Proposal 4: No need to report CSI/CQI for deactivated SCG.*

*Proposal 5: No SRS support for deactivated SCG*

*Proposal 6: No uplink grants (configured or scheduled) supported for deactivated SCG*

*Proposal 7: Do not introduce mechanism to keep timing alignment up to date on deactivated SCG*

*Proposal 8: FFS if timing alignment timer is allowed to continue running when SCG is deactivated.*

*Proposal 20: FFS whether SCG could be directly deactivated when configured (or at handover)*

*Proposal 21: Study whether lower layer activation signaling would be useful to reduce activation delays without huge efforts to RAN2 (e.g. using MAC/DCI).*

[R2-2010124](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010124.zip) Discussion on SCG deactivation and activation Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 11: The MN makes the decision on deactivate/activate the SCG.*

*Proposal 12: The MN sends the deactivation/activation command to the UE.*

*Proposal 13: UE sends an RRC message to the MN to indicate UL data arrival on an SCG bearer*

*Proposal 14: Use MAC CE to indicate SCG deactivation/activation to the UE*

*Proposal 15: The network can reconfigure the deactivated SCG in order to change the PSCell.*

*Proposal 16: The network can keep the SCG to be deactivated when PSCell is changed.*

*Proposal 17: The UE does not initiate the RACH when the PSCell is changed and the SCG is deactivated.*

*Proposal 1: UE stops the PUSCH transmission when the SCG is deactivated.*

*Proposal 2: When the SCG is deactivated, the UE does not perform CSI measurements and reporting on the SCG.*

*Proposal 8: When the SCG is deactivated, the UE does not perform BFD/BFR on the PSCell.*

*Proposal 10: The UE does not transmit SRS when the SCG is deactivated*

*Proposal 3: The network can indicate which RRM measurements the UE continues when the SCG is deactivated.*

*Proposal 4: Study the relaxed RRM measurement for the continued RRM measurements.*

*Proposal 5: For the SN-configured RRM measurements, UE reports the results to the SN via the MN.*

*Proposal 6: the network controls whether the UE continues to perform RLM on PSCell when the SCG is deactivated.*

*Proposal 7: Only RLM based on explicitly configured RS is supported while the SCG is deactivated*

*Proposal 9: When the SCG is deactivated while the TAT is running, the UE keeps the TAT running but does not initiate RACH upon TAT expiry. If the SCG is activated while the TAT is still running, the UE may resume normal SCG operation without RACH (details FFS).*

[R2-2010283](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010283.zip) Efficient SCG Activation mechanism LG Electronics discussion Rel-17 [R2-2007986](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007986.zip)

*Proposal 1: For power-efficient SCG activation, in the SCG deactivation, the UE doesn’t monitor PDCCH until SCG activation.*

*Proposal 2: For time-efficient SCG activation, in the SCG deactivation, the UE doesn’t perform synchronisation procedure, i.e. RACH on the way of SCG activation if TA is valid.*

*Proposal 3: Discuss whether an additional requirement is needed to keep synchronisation with the network even after TA expiry.*

*Proposal 4: For time-efficient SCG activation, the UE performs RRM which is configured by SN.*

*Proposal 5: For SN mobility, all SCG radio bearers including SRB3 & DRBs are required to be suspended during SCG deactivation.*

[R2-2010372](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010372.zip) Considerations on SCG activation or deactivation CMCC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2008920](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008920.zip) Considerations on fast (de)active of Scell KDDI Corporation discussion

*(moved from 6.8.2)*

[R2-2009590](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009590.zip) Discussion on efficient deactivation mechanism for the SCG China Unicom discussion LTE\_NR\_DC\_enh2-Core

[R2-2009913](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009913.zip) Discussion on efficient SCG activation/deactivation China Telecommunications discussion

[R2-2010087](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010087.zip) Progressing SCG deactivation and resumption for R17 Samsung Telecommunications discussion Rel-17 LTE\_NR\_DC\_enh2-Core

=> Revised in [R2-2010683](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010683.zip)

[R2-2010683](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010683.zip) Progressing SCG deactivation and resumption for R17 Samsung Telecommunications discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009246](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009246.zip) Further consideration on SCG activation and deactivation ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009357](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009357.zip) Efficient Activation/Deactivation Mechanism for SCG CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2008870](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008870.zip) Discussion on SCG suspension or deactivation OPPO discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009150](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009150.zip) Discussion on efficient activation mechanism for one SCG Spreadtrum Communications discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009259](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009259.zip) On Support of Activation/Deactivation for SCG InterDigital discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009284](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009284.zip) Further discuss the issues with SCG fast activation Futurewei discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009531](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009531.zip) Open items on SCG deactivation feature Apple discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009867](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009867.zip) On SCG deactivatoin and activation Lenovo, Motorola Mobility discussion Rel-17

[R2-2009942](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009942.zip) Signalling for Rel-17 efficient SCG de-activation/re-activation Intel Corporation discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2010132](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010132.zip) Efficient SCG activation/deactivation in MR-DC Qualcomm Incorporated discussion Rel-17

[R2-2010231](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010231.zip) Signalling for SCG activation SHARP Corporation discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2010290](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010290.zip) Activation and deactivation mechanism for SCG and SCells vivo discussion Rel-17

[R2-2009814](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009814.zip) SCG deactivation upon SCG addition NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

### 8.2.3 Conditional PSCell change addition

Including outcome of [Post111-e][920][eDCCA] Condtional PSCell Change and Addition (CATT)

Web Conf (1)

Outcome of [Post111-e][920][eDCCA] Condtional PSCell Change and Addition (CATT):

[R2-2009360](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009360.zip) Summary of [Post111-e][920][eDCCA] Conditional PSCell Change and Addition (CATT) CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

Proposals from discussion paper

*Proposal 1: The following proposals can be considered for bulk agreements.*

**Discussion (P1 / bulk agreement points)**

- Intel has concern on P19 within the bulk agreements: Wouldn't want to fix how encapsulation is done.

**Bulk Agreement**

**Proposal Set 1A: general/procedure**

1. Maintain Rel-15 principle that only one PScell is active at a time even with conditional PScell addition/change.
2. Usage of CPAC is decided by the network. The UE evaluates when the condition is valid.
3. The baseline operation for CPAC procedure assumes the RRC Reconfiguration message contains SCG addition/change triggering condition(s) and the RRC configuration(s) for candidate target PSCells. The UE accesses the prepared PSCell when the relevant condition is met.
4. CPAC execution condition and/or candidate PSCell configuration can be updated by modifying the existing CPAC configuration.
5. Support configuration of one or more candidate cells for CPAC.
6. UE is not required to continue evaluating the triggering condition of other candidate PSCell(s) during CPC/CPA execution.
7. For FR1 and FR2, leave it up to UE implementation to select the candidate PSCell if more than one candidate cell meets the triggering condition. UE may consider beam information in this.
8. No additional optimizations with multi-beam operation are introduced to improve RACH performance for CPAC completion with multi-beam operation.

**Proposal set 1B: trigger/ condition related**

1. For conditional PSCell addition, the MN decides on the conditional PSCell addition execution condition. FFS for PSCell Change.
2. The execution condition for CPAC is defined by a measurement identity which identifies a measurement configuration.

11 For conditional PSCell change, A3/A5 execution condition should be supported while for conditional PSCell addition, A4/B1 like execution condition should be supported.

12 Allow having multiple triggering conditions (using “and”) for CPAC execution of a single candidate cell. Only single RS type per CPAC candidate is supported. At most two triggering quantities (e.g. RSRP and RSRQ, RSRP and SINR, etc.) can be configured simultaneously.

13 Cell level quality is used as baseline for CPAC execution condition;

14 Only single RS type (SSB or CSI-RS) per candidate PSCell is supported for PSCell change.

15 TTT is supported for CPAC execution condition (as per legacy configuration)

**Proposal set 1C: signalling related**

16 Reuse the RRCReconfiguration/RRCConnectionReconfiguration procedure to signal CPAC configuration to UE following Rel-16 signalling.

17 Multiple candidate PSCells can be sent in either one or multiple RRC messages.

18 As part of the CPAC configuration to be sent to the UE, the RRC container is used to carry candidate PSCell configuration, and the MN is not allowed to alter any content of the configuration from the PSCell. Moreover, in case of SN change, source SN is not allowed to alter any content of the configuration from the target SN. FFS on which RRC format is used (can be considered in stage-3)

19 For conditional PSCell addition, the MN transmits the final RRCReconfiguration/ RRCConnectionReconfiguration message to the UE. **FFS how the encapsulation is done exactly (can be considered in Stage-3).**

**Proposal 1D: FFS issues**

FFS for conditional PSCell change, SN decides on the condition for SN-initiated procedures and MN decides on the condition on MN-initiated procedures

FFS whether we need coordination on exact execution conditions or just measurements.

FFS whether source or target SN knows the condition

FFS in which exact cases the condition needs to be indicated

FFS how many candidate cells (UE and network impacts should be clarified). FFS whether the number of candidate cells for CPAC different from that of CHO.

FFS on UE capability for triggering quantities

**Discussion (P2&3)**

- Intel thinks we need to discuss the signalling impact from these. Would like to avoid big RAN3 impacts if we follow CHO principles. CPC would be better from that perspective.

- Ericsson is fine with P2 but P3 is unclear. CATT thinks large majority supported this.

- Samsung thinks that in conventional PSCell addition/change, SN chooses the PSCell based on measurement results from MN. Would like to consider similar roles even though Rel-16 CPC didn't do this. OAM coordination could be enough for PSCell selection.

- OPPO thinks SN would know execution condition better. Intel thinks in R16 the execution condition is forwarded to SN but email only considered P2. QC is not sure this is the case. Also wonders if this is for CPA and CPC? Intel thinks SN should know the execution condition to determine the final message.

- Intel thinks we haven't considered the Stage-3 consequences of P2/P3.

**Show of hands (P2+P3):**

Against: 1

For: 15

* **In MN initiated inter-SN CPC and CPA, the MN is not required to indicate the execution condition(s) to other involved entities (e.g. target SN, source SN).**
* **For CPA and MN initiated Inter-SN CPC, the MN generates and transmits the conditional configuration message (i.e. RRCReconfiguration/RRCConnectionReconfiguration message) to the UE. The RRCReconfiguration provided by the candidate PSCell(s) is encapsulated in the final conditional reconfiguration message to the UE. The MN is not allowed to alter the RRCReconfiguration provided by the candidate PSCell(s).**

*Proposal 4: For the generation of conditional reconfiguration for SN initiated inter-SN CPC, the following two options should be further discussed.*

*Option 1: (16 supporting companies) The MN generates CPC. The source SN sets the execution condition and communicates it to the MN. The MN generates the conditional reconfiguration message including the execution condition(s) provided by the source SN and RRCReconfiguration provided by the candidate PSCell(s).*

*Option 3: (6 supporting companies) The source SN generates CPC. The source SN sets the execution condition. The source SN communicates with target SN and receives RRCReconfiguration provided by the candidate PSCell(s). The source SN generates the conditional reconfiguration message and provides it to the MN (possibly in a transparent container) for transmission to the UE.*

**Discussion (P4)**

- Samsung has changed their mind on P4 and is supportive of option 1 now: MN may need to adjust its configuration based on what target node does (e.g. SK-counter) so MN-generated configuration can be needed.

**CB: AT-meeting Email discussion (CATT): Provide signalling flow diagrams for each of the following options in P4 (1 vs. 3), including the consequences of each**

* [AT112-e][231][eDCCA] Progressing conditional reconfiguration for SN initiated inter-SN CPC (CATT)

Scope:

* + - Discuss the option 1 and option 3 details from P4 of email discussion [Post111-e][920] to better understand the technical details between the alternatives (e.g. signalling flows, signalling load, etc.)

Intended outcome:

* + - Discussion summary in [R2-2010734](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010734.zip) (by email rapporteur).

Deadlines:

* + - Rapporteur can set an intermediate deadline for company inputs and/or converging the discussion
    - Deadline for email discussion report: 2nd week Thu, UTC 1000
* CBF: Report of email discussion [231]

By Web Conf (231 summary)

[R2-2010734](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010734.zip) [AT112-e][231][eDCCA] Progressing conditional reconfiguration for SN initiated inter-SN CPC (CATT) CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009359](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009359.zip) Introduction of CPA and MN Initiated Inter-SN CPC CATT draftCR Rel-17 37.340 16.3.0 B LTE\_NR\_DC\_enh2-Core

* CB (may be postponed)

Web Conf (2)

[R2-2010088](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010088.zip) Progressing conditional configuration for R17 Samsung Telecommunications discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1: RAN2 is requested to discuss and confirm that RAN2 progresses based on the assumption that RAN3 inter-node messages do not support addition/ modification of multiple candidates (i.e. use as baseline, only change if serious issue identified)*

*Proposal 2: RAN2 is requested to discuss and conclude to what extend (T-)SN should have say in measurement condition to be met at CPC execution and select between following options:*

*a) Introduce negotiation between S-SN (initiating node) and (target) SN for the conditions*

*b) Allow (target) SN to set a separate condition*

*c) For R17 its sufficient to have no coordination or use OAM (not UE specific)*

*Proposal 3: At least in case of SN initiated change of SN, support that UE can apply MN and SN generated configurations at CPC execution. This means that field conditionalReconfiguration should include MN generated fields i.e. at least sk-Counter, radio bearer, cell group and measurement configuration*

*Proposal 4: At least in case of SN initiated change of SN, the configuration to apply for a candidate at CPC execution is an MN generated reconfiguration message*

*Proposal 5: In case of SN initiated change of SN, SN generates the execution condition and it is transferred by a separate field and within an octet string container*

*Proposal 6: For all R17 cases i.e. both CPA and CPC, we apply the same conclusion regarding:*

*o Support for adding/ modifying multiple candidates in RAN3 inter-node messages*

*o How (T-SN) can have say in execution condition e.g. OAM*

*o To also support application of MN configuration at execution time*

*o The configuration to apply for a candidate at CPC execution is an MN generated reconfiguration message*

[R2-2010626](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010626.zip) Further consideration for Conditional PSCell addition and change NTT DOCOMO INC. discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

*Observation1: Options 2 and 3 should be considered with the following two sub options*

* the communication between S-SN and T-SN is performed directly*

* the communication between S-SN and T-SNs occurs via MN*

*Observation 2: An operation to place PSCells in isolation in macro PCell can be assumed*

*Proposal 1: Direct communication between S-SN and T-SN should be avoided.*

*Proposal 2: Execution conditions should be generated by S-SN.*

*Proposal 3: Conditional PSCell Configuration (i.e., RRC message) should be generated by either S-SN or T-SN.*

*Proposal 4: Option 2 like is considered one of the options*

*Option 2 like: The target SN generates CPC. The source SN sets the execution condition and sends it to the target SN via MN. The target SN generates the conditional configuration message. The target-SN-generated conditional configuration message is provided to the MN (possibly in a transparent container) for transmission to the UE.*

*Proposal 5: RAN2 re-consider whether baseline should be that the configurations of all candidates PSCell configurations for CPA and Inter-SN PSCell change are released upon successful completion of CPAC, conventional PSCell change or conventional PSCell addition or not.*

[R2-2009771](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009771.zip) On Rel-17 Conditional PSCell Addition and Change (CPAC) Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2010125](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010125.zip) Discussion on support of conditional PSCell change/addition Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2010373](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010373.zip) Discussions about CPAC procedures CMCC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009379](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009379.zip) Discussion on conditional PSCell addition/change ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009596](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009596.zip) Discussion on conditional PSCell change and addition OPPO discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2010003](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010003.zip) Conditional PSCell Change / Addition Ericsson discussion LTE\_NR\_DC\_enh2-Core

[R2-2010130](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010130.zip) Configuration of Conditional PSCell addition/change Qualcomm Incorporated discussion Rel-17

[R2-2009868](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009868.zip) Issues on inter-SN CPC Lenovo, Motorola Mobility discussion Rel-17

[R2-2009592](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009592.zip) Discussion on inter-SN conditional PSCell change (SN initiated) China Unicom discussion LTE\_NR\_DC\_enh2-Core

[R2-2009358](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009358.zip) Discussion on Further CPAC Enhancements CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009816](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009816.zip) Framework of Inter-SN Conditional PSCell change NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009815](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009815.zip) Conditional PSCell addition procedure NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009088](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009088.zip) Conditional PSCell change / addition vivo discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009158](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009158.zip) CPC configuration number restriction Spreadtrum Communications discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009260](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009260.zip) Coexistence of CHO and CPC InterDigital discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009285](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009285.zip) CPAC failure handling discussio Futurewei discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2009475](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009475.zip) Discussion on conditional PSCell change and addition Apple discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2010248](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010248.zip) Discussion on SN initiated CPC and CPAC Execution ETRI discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2010282](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010282.zip) Considerations of CPAC in Rel-17 LG Electronics discussion Rel-17 [R2-2007985](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007985.zip)

[R2-2010529](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010529.zip) Regarding inter MN-SN signaling design for Conditional PSCell Addition Intel Corporation discussion Rel-17 LTE\_NR\_DC\_enh2-Core

## 8.3 Multi SIM

(LTE\_NR\_MUSIM-Core; leading WG: RAN2; REL-17; WID: RP-201309)

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

Email max expectation: 3 threads

### 8.3.1 Organizational Requirements and Scope

Including work plan and any other rapporteur input.

Including outcome of [Post111-e][917][NR][Multi-SIM] Work prioritization for Multi-SIM (vivo)

Web Conf (2)

[R2-2008754](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008754.zip) LS on System support for Multi-USIM devices (S2-2006037; contact: Intel) SA2 LS in Rel-17 FS\_MUSIM To:RAN2, RAN3, SA3

* Noted

[R2-2010689](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010689.zip) Reply to LS S2-2006037 on System support for Multi-USIM devices (S3-202687; contact: Nokia) SA3 LS in Rel-17 FS\_MUSIM To:SA2, RAN2, RAN3

- OPPO wonders if this is only for RRC\_IDLE or also to RRC\_INACTIVE? Nokia clarifies that this needs further discussion in RAN2. Should just avoid unsecured transmission. QC thinks this is only for RRC\_IDLE.

* Noted

Input related to SA2/SA3 LS replies:

[R2-2009971](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009971.zip) Response to SA2 LS S2-2006037: Paging Repetition in RAN and UE Implementation-based solution aspects VODAFONE Group Plc discussion

*(moved from 8.3.2)*

[R2-2009780](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009780.zip) Guidance for SA2 on Solution #16 for Key Issue 2 VODAFONE Group Plc discussion

*(moved from 8.3.2)*

[R2-2009885](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009885.zip) Discussion on Multi SIM Sony, Convida Wireless discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009943](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009943.zip) [DRAFT] Reply LS on System support for Multi-USIM devices Intel Corporation LS out Rel-17 LTE\_NR\_MUSIM-Core To:SA2 Cc:RAN3

* Offline 240 to progress LS reply to SA2
* [AT112-e][240][Multi-SIM] Reply LS to SA2 (Intel)

Scope:

* + - Draft LS reply to SA2 based on online agreements (can also include some analysis from email discussion)

Intended outcome:

* + - Discussion summary in [R2-2010737](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010737.zip) (by email rapporteur) and draft reply LS in [R2-2010738](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010738.zip).

Deadlines:

* + - Deadline for email discussion report: 2nd week Thu, UTC 1000

By Web Conf (240 summary)

[R2-2010737](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010737.zip) Summary of [AT112-e][240][Multi-SIM] Reply LS to SA2 (Intel) Intel Corporation discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2010738](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010738.zip) Draft reply LS on System support for Multi-USIM devices (S2-2006037; contact: Intel) Intel Corporation LS out Rel-17 FS\_MUSIM, LTE\_NR\_MUSIM-Core To: SA2 CC: RAN3, SA3

Web Conf (1)

Outcome of [Post111-e][917][NR][Multi-SIM] Work prioritization for Multi-SIM (vivo):

[R2-2009325](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009325.zip) Summary of [Post111-e][917][Multi-SIM] Multi-Sim vivo discussion

* Noted
* Email discussion outcome (including proposed conclusions) are split to be discussed under respective agenda items (8.3.2, 8.3.3 and 8.3.4)

### 8.3.2 Paging collision avoidance

Including discussion on enhancement(s) to address the collision due to reception of paging when the UE is in IDLE/INACTIVE mode in both the networks associated with respective SIMs [RAN2]

Web Conf (1)

Outcome of [Post111-e][917][NR][Multi-SIM] Work prioritization for Multi-SIM (vivo):

[R2-2009325](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009325.zip) Summary of [Post111-e][917][Multi-SIM] Multi-Sim vivo discussion

* Proposals 1-9 discussed here

*Proposal 1 (combine the proposal 1-3 and 5 above) From RAN2 point of view, Option 1 , 2a, 2b and 3 are feasible to solve the paging collision issue in 5GS.*

*Observation 1 When effectiveness is considered, the option 1 has the following disadvantages:*

*a) Without UE assistant information, the new assigned 5G-GUTI may still result in PO collisions;*

*b) Paging collisions may occur after cell reselection in which case UE needs to request new 5G-GUTI again.*

*Observation 2 When effectiveness is considered, the option 2a has the following disadvantages:*

*a) Without UE assistant information, the assigned alternative UE\_ID may still result in PO collisions;*

*b) Paging collisions may occur after cell reselection in which case UE needs to request a new alternative UE\_ID again.*

*c) this option would change the legacy way to calculate PF/PO, thus impacts CN, RAN, UE.*

*Observation 3 When effectiveness is considered, the option 2b has the following disadvantages:*

*a) Without UE generated offset information, the IMSI offset may still result in PO collisions.* [*R2-2006540*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2006540.zip) *also shows that offset values of {1,2,3,4..} should be effective for dual/tri/quad… SIM;*

*b) Paging collisions may occur after cell reselection in which case UE needs to request a new UE offset again.*

*c) this option would change the legacy way to calculate PF/PO, thus impacts on MME, UE.*

*Proposal 4 more detailed information is needed to judge the feasibility and effectiveness of Option 2c (Calculation of PF/PO based on MUSIM Assistance Information).*

*Observation 4 When effectiveness is considered, the option 3 has the following disadvantage: this option would increase the signal overhead in the RAN.*

*Proposal 6 Online discussion is needed if the Option 4 (UE Implementation-based approach) is feasible from RAN2 point of views.*

*Observation 5 Standardized solution will ensure deterministic and uniform behavior from all UEs, and avoid impact on the paging latency, paging success performance and so on.*

*Proposal 7 Continue to evaluate the effectiveness of options 1, 2a, 2b, 3.*

*Proposal 8 For paging collision, “No E-UTRA impact” restriction applies to TS 36.331 at least. Online discussion is needed to determine if “No E-UTRA impact” restriction also applies to TS 36.413, TS 38.413, TS 36.304.*

*Proposal 9 From RAN2 point of view, when paging reception in one network colliding with data reception in another network is detected, the approach of Access Stratum-based solution with scheduling gap is feasible.*

*Proposal 1 (combine the proposal 1-3 and 5 above) From RAN2 point of view, Option 1 , 2a, 2b and 3 are feasible to solve the paging collision issue in 5GS.*

*Proposal 4 more detailed information is needed to judge the feasibility and effectiveness of Option 2c (Calculation of PF/PO based on MUSIM Assistance Information).*

*Proposal 6 Online discussion is needed if the Option 4 (UE Implementation-based approach) is feasible from RAN2 point of views.*

* From RAN2 point of view, Option 1 , 2a, 2b, and 3 are feasible to solve the paging collision issue in 5GS. Each have different effectiveness (as per analysis during the email discussion). When indicating reply to SA2, indicate both feasibility as well as effectiveness.
* Indicate to SA2 that RAN2 continues to further evaluate the pros and cons of options 1, 2a, 2b, 3.
* Option 4 is still allowed (but RAN2 will not specify UE implementation).
* Clarifying "No E-UTRA impact" can be done in RANP.
* Option 2c can be evaluated later as it doesn't work alone.

Discussion (1, 4, 6)

- Xiaomi would prefer to use "alleviate" instead of "solve" for P1.

- Charter thinks "feasible" should also consider the effectiveness of the solution. Option 1 and 2a are not every effective, for instance. QC agrees that we should indicate how well they solve the problem. Apple also agrees we should compare the effectiveness. ZTE agrees and thinks we could provide RAN2 preference. Nokia also agrees.

- MediaTek thinks not all solutions are feasible in practice, e.g. changing UE ID. Should consider effectiveness first.

- Vodafone thinks option 1 is for 5GC but not for EPC. Option 2b could work for both but was only intended for EPC in the SA2 LS. So 1 for 5GC and 2b for EPS would be preferred. QC wonders if we could use 2b for 5GC as well? Vodafone thinks it would impact AMF as well.

- Vodafone thinks that paging repetition (option 3) consumes too many resources in RAN and will have bad impact to non-multi-SIM e.g. on battery life. Apple and ZTE agree. CATT also agrees.

- MediaTek wonders why we would discus P6 since it's always possible. CATT agress and thinks option 4 is baseline. Nokia thinks this is possible but will not be standardized.

- Ericsson thinks feasibility is fine for answering to SA2 but would be fine to indicate RAN2 conclusions on drawbacks. P4 seems not needed.

- CATT thinks paging collision is quite low probability event.

- Huawei supports P1 and wonders why we would discuss P6.

- Huawei wonders why option 4 is not taken into account? QC thinks we will not specify UE implementation options. Huawei thinks we should only specify if something is needed.

Web Conf (3)

[R2-2009326](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009326.zip) Evaluation on Paging Collision Solutions vivo discussion

*Proposal 1 Option2c(UE assistance information for MUSIM) can be considered later, since it is not a solution that can work independently, and can be applied with other options.*

*Proposal 2 Option 4 (UE Implementation-based solution) is not feasible for the UE to solve paging collision issue.*

*Proposal 3 Enhancement for 5GS should be prioritized, for it can handle paging collision issue in both NR+NR and NR+LTE scenarios.*

*Proposal 4 Option1 (UE requested 5G-GUTI reassignment) is selected to solve the paging collision issue, since it is the simplest solution and can be applied for 5GS without RAN impact.*

Discussion

- Xiaomi and QC agree with P3. Samsung also agrees.

* Enhancement for 5GS should be prioritized since it can handle paging collision issue in both NR+NR and NR+LTE scenarios.

[R2-2009556](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009556.zip) Preventing paging collisions for Multi-SIM Qualcomm Incorporated discussion

*Observation 1: Two USIMs are considered as two independent and separate UEs from NW perspective.*

*Observation 2: A solution specified on NR side can also resolve the collision for NR + LTE and NR + 3G cases.*

*Proposal 1: The solutions for paging collision resolution or avoidance should impact only NR specifications.*

*Observation 3: Paging collision can be resolved only an action taken by the network to resolve this.*

*Proposal 2: The UE will inform the NW of an existing or possible paging collision. The signaling can also include more information about the collision and UE suggestions to resolve it.*

*Observation 4: It can be assumed that the signaling is done only for one USIM.*

*Proposal 3: The signaling to report the paging collision (and possibly UE suggestions) will be done at NAS layer.*

*Observation 4: The re-allocation of UE ID (e.g. S-TMSI) will not be an efficient solution.*

*Proposal 4: RAN2 should focus on solutions for paging collision where the gNB will decide and implement the corrective action.*

*Proposal 5: AMF will inform the gNB of a paging collision and other information reported by the UE.*

*Proposal 6: RAN2 should discuss gNB initiated mechanisms which allow to page the UE at different times than the existing POs.*

*Proposal 7: RAN2 to discuss how the UE can determine if a gNB applies paging collision resolution solution, e.g. based on reporting the problem or by broadcasting of this support at cell level.*

[R2-2010534](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010534.zip) Paging collision avoidance Ericsson discussion LTE\_NR\_MUSIM-Core

*Observation 1 It is expected that the probability of Paging Occasions collision in the two PLMNs is rather low and not systematic.*

*Observation 2 Given the low probability of Paging Occasions collision, a solution based on the UE implementation is expected to be a feasible/effective mean to minimize the impacts on the Paging reception caused by the collision, without introducing any specification change.*

*Observation 3 An alternative solution is to involve the network, e.g. by introducing an additional offset (generated by the CN and delivered to UE and gNB/eNB) which is used in the SFN and PO calculation formulas, whenever the PO collision occurs.*

*Proposal 1 RAN2 to agree on one of the two following solutions to cope with the Paging Occasion collision:*

*1) UE implementation based*

*2) Network based, by introducing an additional offset used in the SFN and PO calculation*

[R2-2009659](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009659.zip) Consideration on Multi-SIM China Telecom discussion

[R2-2009851](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009851.zip) On Paging Collision Avoidance Huawei, HiSilicon discussion Rel-17

[R2-2009505](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009505.zip) MUSIM Page Collision Avoidance Apple discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009264](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009264.zip) Analysis of solutions for paging collision Nokia, Nokia Shanghai Bell discussion Rel-17

[R2-2009538](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009538.zip) Effective Solution for Paging Collision Avoidance Samsung R&D Institute India discussion

[R2-2009622](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009622.zip) Consideration on the Paging Collision ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2008832](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008832.zip) Support of UE capabilities coordination for Dual Tx/Dual Rx Multi-USIM UEs China Telecommunications discussion

*(moved from 8.3)*

[R2-2008955](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008955.zip) Discussion on Paging Collision Avoidance CATT discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2008871](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008871.zip) Discussion on paging collision issue for multi-SIM OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009692](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009692.zip) Definition and solution for paging collision, RRC Inactive, SI change Lenovo, Motorola Mobility discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009779](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009779.zip) Discussion of the paging collision problem Xiaomi Communications discussion

[R2-2009786](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009786.zip) Support for Multi-SIM Devices - Paging Collision MediaTek Inc. discussion

[R2-2009940](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009940.zip) “Effective” solution for paging collision avoidance Intel Corporation discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2010284](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010284.zip) Consideration of Paging Collision Avoidance LG Electronics discussion Rel-17

[R2-2010427](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010427.zip) UE indication of paging collision for Multi-SIM ASUSTeK discussion LTE\_NR\_MUSIM-Core

[R2-2010445](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010445.zip) Considerations for Paging Collision for Multi-SIM UEs Charter Communications, Inc discussion Rel-17

[R2-2010596](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010596.zip) RAN2 Impacts of Multi-USIM Paging Futurewei Technologies discussion

*Withdrawn:*

[R2-2009739](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009739.zip) Guidance for SA2 on Solution #16 for Key Issue 2 VODAFONE Group Plc discussion Withdrawn

[R2-2010482](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010482.zip) Consideration on slice specific cell selection and reselection ZTE corporation, Sanechips discussion Rel-17 FS\_NR\_slice Withdrawn

### 8.3.3 UE notification on network switching for multi-SIM

Including discussion on mechanism for UE to notify Network A of its switch from Network A (for MUSIM purpose)

Web Conf (1)

[R2-2009325](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009325.zip) Summary of [Post111-e][917][Multi-SIM] Multi-Sim vivo discussion

* Proposals 10-13 discussed here

*Proposal 10a Using table 1 as a baseline on the discussion the expected time (in ms) required for UE to send a (NAS) busy indication to Network B.*

*Proposal 10b Further online discussions needed to conclude whether scheduling gap is sufficient in network A for the UE to listen to paging and respond with BUSY indication. Table-1 can be considered as starting point for estimation of time delay calculation. This may be revisited based on the agreed signaling mechanism for BUSY indication.*

*Proposal 11 From RAN2 point of view, it is feasible (and secure) that the busy indication is sent as an RRC message instead (no NAS message to the CN) i.e. as an RRC response to paging without requiring an RRC connection for RRC Inactive UE. FFS for idle UE.*

*Proposal 12 It is feasible to define an RRC-based switching/leaving and returning procedure in 5GS/NR.*

*Proposal 13 For now the changes to 5GS/E-UTRA (Option 5) to support RRC-based switching is not part of RAN Work Item. Online discussion is needed whether having solution in RRC signalling for LTE (Option 5) can be considered if RRC based switching is agreed as one solution for switching in RAN2 for NR RAN.*

Discussion

- MTK thinks it's fine to indicate NAS times but doesn't support it.

- Charter thinks that P12 is about short leave only - long leave can be different. QC agrees.

- LGE agrees with 10a, 11 and 12. Sending busy indication with RRC connection can be disruptive.

- Nokia thinks P11 still requires security analysis even for RRC\_INACTIVE. QC agrees.

* Indicate to SA2 that the table 1 is a baseline on the discussion the expected time (in ms) required for UE to send a (NAS) busy indication to Network B.
* From RAN2 point of view, it is feasible that the busy indication is sent as an RRC message with security for RRC\_INACTIVE. FFS how this works.
* RAN2 will continue to discuss RRC-based switching/leaving and returning procedure in 5GS/NR when UE is in RRC\_CONNECTED. There may be different mechanisms (short/long, leaving/returning, etc.).

Web Conf (3)

[R2-2008872](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008872.zip) Discussion on graceful leaving and busy indication OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

*Proposal 1: Case 1,2,3,4,5,6 are considered as events to trigger the leaving action.*

*- Case 1: UE response paging message from USIM-B;*

*- Case 2: UE will originate the service via USIM-B.*

*- Case 3: UE receive updated system information*

*- Case 4: UE monitor paging DCI and/or receive paging message.*

*- Case 5: UE perform RRM measurement for cell reselection.*

*- Case 6: UE perform MO signalling for some purposes, e.g. registration/TAU, check paging cause, send busy indication.*

*Proposal 2: Both pre-configured periodical duration for predictable leaving and one-shot leaving duration based on UE request are supported.*

*Proposal 3: For one-shot leaving duration based on UE request, it is up to network decision to make UE enter RRC\_IDLE or RRC\_INACTIVE or keep UE in RRC\_CONNECTED for a pre-configured time duration.*

*Proposal 4: Both NAS and RRC based leaving indication are considered for different scenarios and RAN2 is kindly asked to discuss all the possible procedures listed above and down selection solution for leaving indication.*

*Proposal 5: It is up to UE implementation if UE cannot return to perform RRC resume procedure due to T380 expiries or across RNA boundary after leaving.*

*Proposal 6: NAS based leaving indication is also used for 5GS/E-UTRA (Option 5) case as E-UTRA/EPS case.*

*Proposal 7: The RRC based busy indication is supported for RRC\_INACTIVE mode UE if SA2 agree to support busy indication.*

*Proposal 8: For RRC\_INACTIVE UE, the MSG4 (RRCRelease) is used to confirm the busy indication carried in MSG3 if SA2 agree to support busy indication.*

*Proposal 9: For RRC\_INACTIVE UE, RRC resume procedure without context relocation is supported for busy indication delivery if SA2 agree to support busy indication.*

*Proposal 10: The NAS based busy indication is supported for RRC\_IDLE mode UE if SA2 agree to support busy indication.*

*Proposal 11: The details of the NAS based indication is up to CT1 and RAN3 if SA2 agree to support busy indication.*

*Proposal 12: The time duration for busy indication delivery cannot be guaranteed less than a certain period and it depends on UE’s best effort only.*

[R2-2010246](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010246.zip) On coordinated switch from NW for MUSIM device Huawei, HiSilicon discussion Rel-17 LTE\_NR\_MUSIM-Core

*Proposal 1: The scenario 1 and Scenario 2 for UE switching from Network A in [2] are updated as below:*

*o Scenario 1: periodic switching, such as paging reception, measurements*

*o Scenario 2: aperiodic switching, such as TAU, RNAU, MO SMS , VoLTE/VoNR voice call*

*Proposal 2: The Scenario 3 for UE switching from Network A in [2] is updated as:*

*- Dual-Rx /Single-Tx:*

*o Scenario 3: UE in RRC CONNECTED state in network A needs to switch part of RX capability to network B, where the UE is in RRC IDLE or RRC INACTIVE, for DL reception and hence change its RX capability in NW A.*

*Proposal 3: The issue of the updated Scenario 3 should be considered in this WI.*

*Proposal 4: A unified solution should be considered for addressing the paging reception issue for Single-Rx/Single-Tx and Dual-Rx/Single-Tx UE.*

*Proposal 5: UE sends connection release notification via RRC signalling by reusing legacy “ReleasePreference” and it can autonomously release the RRC connection after sending such notification.*

[R2-2010477](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010477.zip) Network Switching for Multi-SIM UEs Charter Communications, Inc discussion Rel-17

*Proposal 1: RAN2 should investigate a multi-SIM UE’s co-ordinated leave [1] procedure to allow for both a short- and long- term leave from the network. The upper limit of duration for each leave, and decision entity for classification of such leaves (short- vs long-) can be FFS.*

*Proposal 2: RAN2 should consider short coordinated leaves where a multi-SIM UE notifies the network of the desired scheduling gaps, e.g. in order to monitor paging occasions in a second network.*

*Observation 1: In order to evaluate if a scheduling gap on a first network is sufficient for transmission of a busy indication on a second network, RAN2 should consider the total duration required and the expected behaviour from the UE given the paging cause on the second network.*

*Proposal 3: In RRC inactive state, the busy indication can be sent over RRC. However, in RRC idle state, the busy indication should be sent using a NAS message.*

*Proposal 4: UE automatously transitioning to RRC idle state possibly impact the first network negatively, hence RAN2 should aim for solutions that properly transition a short leave to a long leave.*

*Proposal 5: RAN2 may consider an RRC-based procedure for a short-coordinated leave, but for a long-coordinated NAS-based solution should be considered.*

[R2-2008956](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008956.zip) Discussion on UE Notification on Network Switching CATT discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009265](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009265.zip) Scenarios and Impact analysis for Switching Notification Nokia, Nokia Shanghai Bell discussion Rel-17

[R2-2009623](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009623.zip) Consideration on the Switching Notification Procedure ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009658](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009658.zip) RRC-based coordinated switch for multi-USIM UE NEC discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2010350](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010350.zip) Discussion on switching mechanism for multi-SIM Samsung Electronics Co., Ltd discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2010544](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010544.zip) Graceful leaving for a MultiSIM device Ericsson discussion LTE\_NR\_MUSIM-Core

[R2-2007602](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007602.zip)

[R2-2008831](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008831.zip) Discussion on various scenarios of UE switching from network for activities on another network China Telecommunications discussion Rel-17

*(moved from 8.3)*

[R2-2009327](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009327.zip) UE notification on network switching for multi-SIM vivo discussion

[R2-2009328](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009328.zip) Discussion on Busy Indication Procedure vivo discussion

[R2-2009506](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009506.zip) MUSIM Network Switching Apple discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009557](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009557.zip) Switching between two links for Multi-SIM Qualcomm Incorporated discussion

[R2-2009781](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009781.zip) Discussion of the UE switching problem Xiaomi Communications discussion

[R2-2009787](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009787.zip) Support for Multi-SIM Devices - Notification upon Network Switching MediaTek Inc. discussion

[R2-2009856](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009856.zip) Switching Notification in MUSIM Lenovo, Motorola Mobility discussion Rel-17

[R2-2009941](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009941.zip) Regarding UE notification on network switching for multi-SIM Intel Corporation discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2010286](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010286.zip) SIM Switching Handling in MUSIM LG Electronics discussion Rel-17

[R2-2010428](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010428.zip) Mechanism for UE to notify network switching ASUSTeK discussion LTE\_NR\_MUSIM-Core

[R2-2010620](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010620.zip) RAN2 impacts of multi-SIM UE notifications on network switching Futurewei Technologies discussion

*Withdrawn:*

[R2-2010481](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010481.zip) Consideration on the slice specific RACH configuration ZTE corporation, Sanechips discussion Rel-17 FS\_NR\_slice Withdrawn

### 8.3.4 Paging with service indication

Including discussions on mechanism for an incoming page to indicate to the UE whether the service is voLTE/VoNR (pending SA2 feedback).

This agenda item may be deprioritized in this meeting.

[R2-2009325](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009325.zip) Summary of [Post111-e][917][Multi-SIM] Multi-Sim vivo discussion

* Proposals 14-22 discussed here

*Proposal 14a agree the observation 2.1 to evaluate the paging overlead by paging cause extension.*

*Observation 2.1 The overhead of paging cause is (1+⌈ 〖log〗\_2⁡〖number\_of\_paging cause〗 ⌉) bits per UE in E-UTRA and NR, if parallel list, the extension solution adopted in R16 E-UTRA paging message, is applied for introducing paging causes.*

*Proposal 14b From overhead point of view, it is feasible to have paging cause on Uu for EPS and 5GS.*

*Observation2.2 if the paging cause (3 bits per UE) is added, the paging message size is generally increased by ~6% for E-UTRA and ~8% for NR.*

*Proposal 15 Online discussion is needed whether this increasing will impact the real deployment about paging volume and coverage.*

*Proposal 16 If the paging cause is agreed by SA2, Paging cause is supported Per PLMN as the basline from RAN2 point of view. FFS if other options are needed.*

*Proposal 17 Address paging collision issue with standard-based solution, However simple solution is preferred.*

*Proposal 18 The issue of scenario 1 (short time switching, such as paging reception, measurements, TAU, RNAU, MO SMS) is considered in this WI.*

*Proposal 19 The issue of scenario 2 (Long-time switching, such as VoLTE/VoNR voice call) is considered in this WI.*

*Proposal 20 Online discussion is needed whether the issue of scenario 3 (UE in RRC CONNECTED state in network A and needs to switch to network B and hence change its RX capability in NW A) is considered in this WI.*

*Proposal 21 Online discussion is needed whether the issue of scenario 4 (UE in RRC CONNECTED state in network A and needs to switch to network B and hence change its Tx capability in NW A, such as dual connectivity) is considered in this WI.*

*Observation 2.2 For now Dual-Tx is not the scope for switching notification bullet in WI.*

*Proposal 22 Paging cause should be specified in RAN2 after SA2 progress.*

Discussion

- QC would be fine to agree to P17-19. Nokia and Apple agree. Xiaomi is fine with 18 and 19 but not 17.

- Nokia thinks we may have to redo overhead calculations once SA3 provides feedback. Can provide current analysis but further work may be needed.

- Huawei thinks we shuoldn't distinguish short/long time for SA2 rely.

* Provide SA2 with information on paging cause costs based on the email discussion + contributions. Indicate that this may change if assumptions change.
* From RAN2 perspective, we haven't decided on paging cause feasibility yet.
* RAN2 will evaluate short/long time switching in this WI

**FFS on P20/21 - companies**

* Offline 241: Discuss how to resolve P20/21 (vivo)
* [AT112-e][241][Multi-SIM] Network switching scenarios (vivo)

Scope:

* + - Discuss validity of scenario 3 and scenario 4 from the previous email disucssion

Intended outcome:

* + - Discussion summary in [R2-2010739](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010739.zip) (by email rapporteur).

Deadlines:

* + - Deadline for email discussion report: 2nd week Thu, UTC 1000

By Web Conf (241 summary)

[R2-2010739](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010739.zip) [AT112-e][241][Multi-SIM] Network switching scenarios(vivo) vivo discussion Rel-17 LTE\_NR\_MUSIM-Core

Post-meeting Email discussion?

NW vendors:

[R2-2008957](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008957.zip) Discussion on Paging with Service Indication CATT discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009266](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009266.zip) On RAN impacts for on paging cause Nokia, Nokia Shanghai Bell discussion Rel-17

[R2-2009624](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009624.zip) Consideration on the Paging Cause ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009852](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009852.zip) Discussion on the paging with service indication Huawei, HiSilicon discussion Rel-17

[R2-2010250](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010250.zip) Discussion on support of paging cause for multi-SIM Samsung Electronics Co., Ltd discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2010535](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010535.zip) Introduction of a Paging cause indication Ericsson discussion LTE\_NR\_MUSIM-Core [R2-2007603](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007603.zip)

UE vendors:

[R2-2008873](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008873.zip) Discussion on paging cause for multi-SIM OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009153](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009153.zip) Discussion on the open issues of paging transmission Spreadtrum Communications discussion Rel-17 LTE\_NR\_MUSIM

[R2-2009507](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009507.zip) MUSIM Paging with Service Indication Apple discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2009558](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009558.zip) Paging prioritization and response for MUSIM Qualcomm Incorporated discussion

[R2-2009791](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009791.zip) Support for Multi-SIM Devices - Paging Cause MediaTek Inc. discussion

[R2-2010285](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010285.zip) Consideration on Paging Cause Indication LG Electronics discussion Rel-17

[R2-2010416](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010416.zip) Discussion of the paging cause support for MUSIM Xiaomi Communications discussion

## 8.8 RAN slicing SI

(FS\_NR\_slice; leading WG: RAN2; REL-17; WID: RP-193254)

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

Email max expectation: 2 threads

### 8.8.1 Organizational

Including work plan, TR updates and any other rapporteur input.

Including outcome of [Post111-e][916][RAN slicing] RAN slicing study questions (CMCC)

Noted (3)

Incoming LSs with RAN2 in CC-field:

[R2-2008732](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008732.zip) LS on Enhancement of RAN Slicing (R3-205802; contact: Qualcomm) RAN3 LS in Rel-17 FS\_NR\_slice To:SA2 Cc:RAN2

[R2-2010688](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010688.zip) LS on Cell Configuration within TA/RA to Support Allowed NSSAI (C1-206760; contact: Nokia) CT1 LS in Rel-17 FS\_eNS\_Ph2 To:SA2 Cc:RAN2, RAN3

[R2-2010695](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010695.zip) LS Reply on Enhancement of RAN Slicing (S2-2008240; contact: ZTE) SA2 LS in Rel-17 FS\_eNS\_Ph2 To:RAN3 Cc:RAN2

* Noted (without presentation)

Incoming LSs with RAN2 in To-field:

Web Conf (1)

SA2 LS [R2-2008759](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008759.zip) (configuration within TA/RA to support allowed NSSAI):

[R2-2008759](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008759.zip) LS on Cell Configuration within TA/RA to Support Allowed NSSAI (S2-2006526; contact: ZTE) SA2 LS in Rel-17 FS\_eNS\_Ph2 To:RAN2, RAN3, CT1

* Noted (will discuss reply separately)

By Email [250] (2)

Draft replies to [R2-2008759](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008759.zip) (configuration within TA/RA to support allowed NSSAI):

[R2-2010488](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010488.zip) Reply LS on Cell Configuration within TA/RA to Support Allowed NSSAI Qualcomm Incorporated LS out Rel-17 FS\_NR\_slice To:SA2, RAN3, CT1

[R2-2010646](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010646.zip) Draft reply LS on Cell Configuration within TA/RA to Support Allowed NSSAI ZTE corporation, Sanechips LS out Rel-17 FS\_NR\_slice To:SA2 Cc:CT1, RAN3

* Offline 250

Web Conf (1)

*SA2 LS* [*R2-2010694*](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010694.zip) *(restricting rate per UE per network slice):*

[R2-2010694](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010694.zip) LS on restricting the rate per UE per network slice (S2-2007946; contact: Nokia) SA2 LS in Rel-17 FS\_eNS\_Ph2 To:RAN2, RAN3

**Discussion**

- Google wonders if SA2 expects UE impact from any of these solutions? Nokia clarifies this is not excluded but the LS doesn't say that so it's open.

- Lenovo wonders why RAN2 was asked since there isn't much we can reply. CATT agrees and thinks only RAN3 is impacted so we don't need to reply. vivo agrees.

- Huawei thinks there may be some RAN2 impact but it's difficult to progress.

- Nokia thinks if we think there is no RAN2 impact we can reply that very shortly. SA2 will conclude in their next meeting.

* Noted (will discuss reply separately)

By Email [250] (3)

Draft replies to [R2-2010694](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010694.zip) (restricting rate per UE per network slice):

[R2-2010184](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010184.zip) Draft reply LS on restricting the rate per UE per network slice Huawei LS out Rel-17 FS\_eNS\_Ph2 To:SA2 Cc:RAN3 Late

[R2-2010183](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010183.zip) Discussion on restricting the rate per UE per network slice Huawei, HiSilicon discussion Rel-17 TEI17 Late

[R2-2010987](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010987.zip)     [DRAFT] Reply LS on restricting the rate per UE per network slice                Nokia LS out Rel-17 FS\_eNS\_Ph2 To:SA2 Cc:RAN3 Late

* Offline 250

By Email [250] (not kicked off before online discussion)

* [AT112-e][250][Slicing] LS replies to SA2 and RAN3 (Nokia)

Scope:

* + - Attempt to create LS reply to the SA2 LSs

Intended outcome:

* + - Discussion summary in [R2-200xxxx](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-200xxxx.zip) (by email rapporteur).

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Deadline for companies' feedback: Friday morning 2nd week

Web Conf (1)

Work plan update and draft TR:

[R2-2010364](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010364.zip) Revised Work Plan for RAN Slicing CMCC, ZTE Work Plan Rel-17 FS\_NR\_slice [R2-2007420](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2007420.zip)

* Endorsed

[R2-2010365](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010365.zip) Draft TR 38.832 CMCC, ZTE draft TR Rel-17 38.832 0.2.0 FS\_NR\_slice

* Endorsed
* Post-meeting email discussion to capture agreements into TR
* [Post112-e][xxx][NR] Capture RAN slicing agreements into TR 38.832 (CMCC)

Intended outcome: Updated TR 38.832 based on RAN2#112e agreements

Deadline: 1 month

Web Conf (1)

Outcome of [Post111-e][916][RAN slicing] RAN slicing study questions (CMCC) ("Intended slice" and scenario discussion is handled here: Cell reselection and per-slice RA proposals from the email discussion moved to AIs 8.8.2 and 8.8.3):

[R2-2010366](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010366.zip) Report of [Post111-e][916][Slicing] Open issues for RAN slicing CMCC discussion Rel-17 FS\_NR\_slice

Discussion

- Intel is OK with intention but thinks there are two definitions of intended slice so we need to be clear which case we are referring to. Should make that clear. Nokia thinks distinguishing different cases of intended slices may be problematic for RAN2. We mainly care about RRC state and large granularity is not needed. Intended slice is just something that is made available to AS/RRC.

- Google thinks P4 meant the intended slice for MT service that network is paging the UE for. Ericsson and Futurewei agrees. CMCC clarifies that this was meant for access to intended slice.

- Nokia wonders if UE is aware of intended slice for MO service as that requires NAS to inform AS. Google agrees that we shuold be careful and not delve into too large granularity of intended slices. AS just knows the list of slices.

- QC thinks UE knows from paging what the service is.

- Google thinks UE behaviour should be predictable. There is some UE implementation freedom for requested S-NSSAI currently and SA2 might need to be involved. Xiaomi thinks mapping S-NSSAI could cause some delays.

- Nokia thinks P2.1 means UEs would have access category, but this is not the case for MT-access. So MO and MT are different. RRC also doesn't distinguish different types of slices in Rel-15. LGE agrees and thinks that for idle mode mobility what is "intended slice" should be configured as it may vary between TAs.

- Xiaomi thinks we shouldn’t consider cell (re)selection triggered by MO/MT service considering access delay it may introduce.

- Intel thinks P2.1 and P2.2 are stil confusing as they use the same term for two different things. We also haven't discussed MO/MT.

- Huawei thinks we are just repeating the email discussion. vivo also thinks we should agree.

- Nokia thinks we cannot do 2.2 for MT traffic. QC thinks AC cannot always be mapped to a slice.

- OPPO thinks UE is not always aware of slice even for MO case.

* RAN2 common understanding is that intended slice is based on the information AS receives from NAS for the particular use case. This may be different in different cases:  
  2.1: In case of cell selection/reselection, the intended slice means the allowed or requested S-NSSAI(s).  
  - For the initial registration, and requesting new S-NSSAI(s): intended slices = Requested S-NSSAI(s)  
  - For idle-mode mobility: intended slices = allowed S-NSSAI(s)  
  2.2: In case of MO traffic, the intended slice means the S-NSSAI associated with MO traffic based on indication from NAS to AS.  
  FFS whether UE needs to know the intended slice for MT service.
* 4: For MO service, UE is aware of the intended slice. For MT service, UE is unaware of the slice for the paged service in current NR spec.
* 1: Capture the location 3&4 in the TR (check offline to have consistent wording for "location" vs. "area").

Discussion

- Intel thinks we didn't agree if Area1 and Area2 are supported int he same TA/RA. MITRE thinks whether we have RAN slicing per cell or frequency matters.

### 8.8.2 Slice based cell reselection under network control

Including discussion on proposals to address the issues for cell reselection identified in email discussion and whether or to which extent existing mechanisms can address them

Web Conf (1)

Outcome of [Post111-e][916][RAN slicing] RAN slicing study questions (CMCC) (per-slice cell reselection proposals handled here)

[R2-2010366](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010366.zip) Report of [Post111-e][916][Slicing] Open issues for RAN slicing CMCC discussion Rel-17 FS\_NR\_slice

* 5.1: These issues will be studied in this SI:  
  Issue 1: The UE is unaware of the slices supported on different cells or frequencies, which prevents UE from (re)select to the cell or frequency supporting the intended slice.  
  Issue 2: Dedicated priorities would not be available to the UE prior to first RRC connection establishment and only remain valid before T320 expires upon entering IDLE mode. In addition, dedicated priorities are discarded each time when UE entering CONNECTED mode and need to be configured again before UE leaving CONNECTED mode.   
  Issue 3: Operator may require different frequency priority configurations for the specific slice in different areas, however the dedicated priority always overwrites the broadcast priorities if configured.   
  Issue 4: If the serving cell is unable to support the requested slices for the subsequent access of the UE, the serving cell may bring on handover or rejection of access request. That may increase control plane signalling overhead as well as long control plane latency for the UE to access the network.
* 7: The following solution approaches are captured in the TR and will be studied in this SI:  
  Solution 1: Legacy dedicated priority via RRCRelease message.  
  Solution 2: Slice related cell selection info, the slice info of serving cell and neighboring cells is provided in the system information or RRCRelease message. FFS: what information is broadcast.  
  Solution 3: Slice related cell reselection info (e.g. Cell reselection priority per slice), the slice info of neighboring cells is provided in the system information or RRCRelease message. FFS: what information is broadcast.  
  Solution 5: Rel-15 mechanisms such as HO, CA, DC and redirection can be used to access the intended slice in different cell

*[cat a] Proposal 8: Keep solution 4 open and can be further discussed based on contributions.*

*- Solution 4: UE preferred slice info can be considered for slice-based cell reselection design.*

*[cat a] Proposal 10: The intentions and use cases for slice-based RACH configuration are as follows:*

*- Intention 1: RA resource isolation. From marketing point of view, some of the industrial customers have the requirement for access resource isolation, in order to provide guaranteed RA resources for their sensitive slices.*

*- Intention 2: Slice access prioritization. In R15/16, all slices are sharing the same RA resources and cannot be differentiated by network side. But some slices may need to be prioritized during the RA procedure.*

*[cat a] Proposal 11: The following solutions will be studied and captured in the TR 38.832:*

*- Solution 1: Separate RACH resources pool can be configured per slice or per slice group, in addition to the existing common RACH resources.*

*- Solution 2: RACH parameters prioritization can be configured per slice.*

**Cat B: Online discussion needed**

*[cat b] Proposal 5.2: Issue 5 is FFS.*

*- Issue 5: If the intended slice is no longer available (e.g. UE moves from Area 1 to 2, or UE switches to a cell not supporting Slice 2), the UE behaviour needs further study when it has data for the intended slice while Slice 2 is initiated and ongoing (PDU session is still active).*

* Online

Web Conf (4)

*Solution directions (system information broadcast, dedicated priorities):*

[R2-2009536](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009536.zip) Discussion on slice based cell reselection under network control China Unicom discussion FS\_NR\_slice

*Proposal 1: Providing cell reselection priority set per slice and the slice info of neighboring cells via system information or RRCRelease message should be studied.*

[R2-2009174](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009174.zip) Slice information for cell reselection Samsung Electronics discussion Rel-17

*Proposal 1. Frequency list of slice(s) and the priority of frequency in RRCRelease message can be used for redirecting UE to the intended slice.*

*Proposal 2. RAN2 is asked to study solution approaches (e.g., system information, paging) to provide slice information with consideration of signalling overhead.*

[R2-2009473](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009473.zip) Discussion on slice based cell selection and re-selection Apple discussion Rel-17 FS\_NR\_slice

*Observation 1: Current dedicated priority mechanism does not work properly since the dedicated priority configuration is only valid in a small area, and UE may move out of the area when T320 is still running.*

*Proposal 1: RAN2 to discuss whether the validity issue in dedicated priority mechanism should be solved.*

*Proposal 2: Suggest to discuss that NW to broadcast slice type related information such as slice types supported by current cell and neighbor cells, slice type specific cell selection and re-selection parameters.*

* Online, all three discussed together

*Solution directions (cell selection and reselection):*

[R2-2009067](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009067.zip) Considerations for Slice-based cell (re)selection Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_slice

*Observation 1.1: Legacy redirection (with some optional enhancements) and handover procedures may be used to assist UEs to find a cell that supports the intended slice(s).*

*Observation 1.2: Broadcasting slice information in SIB1 is not a scalable solution due to SIB1 size limitation and it does not guarantee fast access to a cell that supports the intended slice(s).*

*Observation 1.3: The AS level cell selection procedure can be easily enhanced that a UE may consider stored slice information during cell selection and this can enable fast access to a cell that supports the intended slice(s).*

*Observation 1.4: Assigning Closed Access Groups to slices or group of slices may be used to guarantee that only cells supporting the intended slices are selected without additional RAN2 specifications.*

*Observation 2.2a: Providing dedicated cell reselection priorities considering slice information can be an effective mechanism to achieve slice specific cell reselection.*

*Observation 2.2b: Some enhancements could be considered in the dedicated cell reselection priorities to remove or decrease the discovered limitations of this mechanism.*

*Observation 2.3: If it is decided that slice related information is added to the broadcasted cell reselection information (SIB2, SIB3, SIB4), then the size of the added information should be considered.*

*Observation 2.4: Assigning Closed Access Groups to slices or group of slices may be used to guarantee that only cells supporting the intended slices are reselected without additional RAN2 specifications.*

*Observation 2.5: When a UE intends to access an S-NSSAI that is not in the Allowed NSSAI, considering preconfigured/provisioned slice information in cell reselection may help the UE to reselect a cell that supports the slice(s) the UE intends to access.*

*Proposal 1: RAN2 to study the following options to enable UE fast access to the cell supporting the intended slice(s) during cell selection:*

*a) Enhancing legacy redirection mechanism.*

*b) Adding stored slice information to the parameters that a UE may use during cell selection.*

*c) Assigning CAG ID(s) to slices or group of slices.*

*Proposal 2: RAN2 should study the following options to enable UE fast access to the cell supporting the intended slice(s) during cell reselection:*

*e) Enhancing the dedicated cell reselection priorities to remove or decrease the discovered limitations.*

*f) Adding slice information to the broadcasted cell reselection information. The size of the added information should be considered.*

*g) Assigning CAG ID(s) to slices or group of slices.*

*h) Considering preconfigured/provisioned slice information when a UE intends to access an S-NSSAI that is not in the Allowed NSSAI.*

* Online

*Solution directions (UE knowledge of slice frequencies):*

[R2-2009979](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009979.zip) Evaluation of Access delay to slice Ericsson discussion Rel-17 FS\_NR\_slice

*Observation 1 The Slice Access delay is most critical when there is an active PDU session, and least critical when the slice is not in the Allowed NSSAI.*

*Observation 2 When there is an active PDU session, the UE will, if possible, remain at a frequency that serves all slices of the UE. For the special case when that is not possible, UE awareness of slice frequency will not improve the performance.*

*Observation 3 Only in very special cases UE can make use of awareness of frequencies preferred for slices, when the slice is in the Allowed NSSAI, but there is no active PDU session. Also, it is unclear what the impact is on the access delay.*

*Observation 4 When the intended slice is not in the Allowed NSSAI, there is a risk that the UE is camping on a cell that is not supporting the slice. In that case the UE can make use of awareness of slice support and preferred frequencies when selecting cell. However, it is unclear if there is a significant impact on the access delay.*

*Proposal 1 The expected gain in terms of shorter access delay does not motivate the introduction of solutions where UE is aware of frequencies used by slices.*

* Online

[R2-2008963](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008963.zip) Further discussion on RAN slicing enhancement Qualcomm Incorporated discussion FS\_NR\_slice

Solution directions:

*Proposal 5: For the slice-based cell (re)selection, first focus on Solution 2 unless if RAN2 conclude that Solution 2 can’t resolve the issues.*

*Proposal 6: RAN2 conclude there is no security concern to broadcast slice information the Network has available in SIB.*

*Proposal 7: For Solution 2 of slice-based cell (re)selection, the following approaches can be considered to reduce its payload size in SIB:*

*• Include supported slice information in a new SIB type which can be further segmented and on-demand broadcast to reduce payload size in SIB.*

*• UE checks scheduling bit of new SIB in SIB1 to determine whether the cell broadcasts slice information.*

* Online

Covered by email discussion

*Proposal 1: Capture Location 3 in the TR where the key difference between Location 3 and Area 1 is that there is no one frequency / cell to provide both Slice 1 and Slice 2 simultaneously like F2 in Area1.*

*Proposal 2: RAN2 hold on to capture Location 4 in the TR until SA2 conclude solution#30 will be specified in normative phase.*

*Proposal 3: For the definition of “intended slices”, MO/MT” is intended to indicate the upcoming UL or DL data traffic. Specifically, “MO” includes “mo-Signalling, mo-Data, mo-VoiceCall, mo-VideoCall, mo-SMS, mps-PriorityAccess, mcs-PriorityAccess”, and “MT” includes “mt-Access”.*

*Proposal 4: For issue 5 of Rel-15 dedicated priority mechanism, clarify that it only happens in the scenario where some S-NSSAI in the Allowed NSSAI(s) is not available in some cells belonging to one TA and active S-NSSAI(s) are not available to UE (e.g. via DC/CA or mobility). Such scenario should be assumed rare.*

For RACH AI:

*Proposal 8: For the slice-based RACH, Solution 2 (i.e. slice-based RACH parameters prioritization) serves as baseline. Further study Solution 1 (i.e. slice specific RACH resources pool) for some slice with urgent requirement.*

Operators:

[R2-2008857](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008857.zip) Considerations on slice aware cell priority KDDI Corporation discussion

[R2-2010367](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010367.zip) Discussion on SA2 LS and solutions for slice-based cell reselection CMCC discussion Rel-17 FS\_NR\_slice

[R2-2009288](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009288.zip) 5G RAN Slicing Framework During Cell Selection / Reselection Phases MITRE Corporation, DoD, NTIA discussion Rel-17 38.832

NW vendors:

[R2-2008917](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008917.zip) Slice based Cell Reselection under Network Control CATT discussion Rel-17 FS\_NR\_slice

[R2-2009807](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009807.zip) Consideration on slice specific cell selection and reselection ZTE corporation, Sanechips discussion Rel-17 FS\_NR\_slice

[R2-2009986](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009986.zip) Solutions for fast access to slice Ericsson discussion Rel-17 FS\_NR\_slice

[R2-2010181](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010181.zip) Slice based Cell (re)selection under network control Huawei, HiSilicon discussion Rel-17 FS\_NR\_slice

UE vendors:

[R2-2008949](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008949.zip) Cell (re)selection based on preferred frequency(s) per slice Beijing Xiaomi Software Tech discussion

[R2-2008950](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2008950.zip) Deployment scenarios of RAN slicing based on SA2 LSout Beijing Xiaomi Software Tech discussion

[R2-2009669](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009669.zip) Considerations on scenarios and solution space of RAN slicing enhancements Lenovo, Motorola Mobility discussion Rel-17 FS\_NR\_slice

*(moved from 8.8.1)*

[R2-2009143](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009143.zip) Discussion on slice based cell reselection Spreadtrum Communications discussion Rel-17 FS\_NR\_slice

[R2-2009198](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009198.zip) Consideration for slice based cell (re)selection Intel Corporation discussion Rel-17 FS\_NR\_slice

[R2-2009542](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009542.zip) Consideration on slice-based cell (re)selection OPPO discussion Rel-17 FS\_NR\_slice

[R2-2009644](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009644.zip) Assistant information to enable UE fast access network slice ITRI discussion FS\_NR\_slice

[R2-2009689](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009689.zip) Remaining issues on slice-based (re)-selection vivo discussion Rel-17 FS\_NR\_slice

[R2-2010063](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010063.zip) Cell selection and reselection for RAN slicing Google discussion

[R2-2010065](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010065.zip) Discussion on Network Slicing’s Impact on Cell (Re-)Selection Convida Wireless discussion Rel-17 FS\_NR\_slice

[R2-2010222](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010222.zip) Further discussion on how to decide intended slice for idle mobility LG Electronics UK discussion Rel-17

### 8.8.3 Slice based RACH configuration or access barring

Including discussion on proposals to address the issues for RACH/access barring identified in email discussion and whether or to which extent existing mechanisms can address them

Web Conf (1)

Outcome of [Post111-e][916][RAN slicing] RAN slicing study questions (CMCC):

[R2-2010366](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010366.zip) Report of [Post111-e][916][Slicing] Open issues for RAN slicing CMCC discussion Rel-17 FS\_NR\_slice

Discussion

- Nokia thinks we should't agree to requirement for per-slice RACH parameters at this stage. Can have parameters for some slices but not all of the hundreds possible. Better use "slice-specific". ZTE agrees and thinks using "list of slices" is fine.

* 10: The intentions and use cases for slice-based RACH configuration are as follows:  
  Intention 1: RA resource isolation. From marketing point of view, some of the industrial customers have the requirement for access resource isolation, in order to provide guaranteed RA resources for their sensitive slices.  
  Intention 2: Slice access prioritization. In R15/16, all slices are sharing the same RA resources and cannot be differentiated by network side. But some slices may need to be prioritized during the RA procedure.
* 11: The following solutions will be studied and captured in the TR 38.832:  
  Solution 1: Slice-specific separate RACH resources pool can be configured per slice or per slice group, in addition to the existing common RACH resources.  
  Solution 2: Slice-specific RACH parameters prioritization can be configured per slice or per slice group.  
  Neither solution may not be applicable to all possible slices.

*- Solution 1: Separate RACH resources pool can be configured per slice or per slice group, in addition to the existing common RACH resources.*

*- Solution 2: RACH parameters prioritization can be configured per slice.*

* Online

Web Conf (2)

[R2-2009806](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009806.zip) Consideration on the slice specific RACH configuration ZTE corporation, Sanechips discussion Rel-17 FS\_NR\_slice

Observation 1: Although broadcasting NSSAI/S-NSSAI (or parts of it) is acceptable to some slices *without security concern, the NSSAI/S-NSSAI (or parts of it) shall not be exposed in system information for some security/privacy sensitive slices.*

*Proposal 1: A common solution of slice specific RACH configuration is needed for slice with/without security concern on exposing of NSSAI/S-NSSAI (or parts of it).*

*Proposal 2: The association between RACH resources and operator defined access categories can be broadcast in system information to link the RACH resources with slices implicitly.*

*Proposal 3: RA prioritization (including powerRampingStepHighPriority and scalingFactorBI) for operator defined access categories can be introduced in system information to prioritize random access for certain slices implicitly.*

* Online

[R2-2009199](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009199.zip) Consideration of Slice based RACH Intel Corporation discussion Rel-17 FS\_NR\_slice

*Use cases and intentions for slice-based RACH:*

*Observation#1: UAC based on access category may be sufficient to provide access control also for slice, since each slice can correspond to a user defined access category.*

*Observation#2: RA resource isolation for critical slice or slice group may reduce system capacity and waste precious RACH resource if the resource utilisation for the slices are uneven.*

*Observation#3: RA prioritization has been applied to critical mission services such as MPS and MCS. It could be beneficial to apply it to some critical slices (e.g. URLLC).*

*Proposal#1: Request RAN2 to study applying RA prioritization to slice.*

*Application of RA prioritization for slice-based RACH:*

*Proposal#2: As baseline, existing RA prioritization with the configured parameters powerRampingStepHighPriority and scalingFactorBI can be supported for critical slice.*

*Proposal#3: Use the operator defined access categories to provide RA prioritization for slice in MO access case.*

*Proposal#3\_1: Broadcast the operator defined access categories with their corresponding RA prioritization in SIB.*

*Proposal#3\_2: UE AS selects the corresponding RA prioritization based on the operator defined access category provided by NAS for the RA procedure triggered by RRC establishment and resumption from RRC.*

* Online

[R2-2009474](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009474.zip) Discussion on slice based RACH and cell barring Apple discussion Rel-17 FS\_NR\_slice

*Proposal 1: Suggest to discuss solutions like slice type based RACH resource and/or RACH related parameters configuration.*

*Proposal 2: Suggest to indicate the slice type associated with the MT traffic in paging message.*

[R2-2009543](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009543.zip) Consideration on slice-based RACH OPPO discussion Rel-17 FS\_NR\_slice

*Observation 1 According to email discussion summary, there are two candidate solutions for slice-based RACH mechanism.*

*Observation 2 In legacy specification, there are two parameters for RA prioritization, i.e. powerRampingStepHighPriority and scalingFactorBI.*

*Observation 3 It is unclear which RA parameters prioritization is prioritized if slice-based RA parameters prioritization is configured with legacy RA parameters prioritization simultaneously.*

*Proposal 1 RAN2 considers separate RO can be configured per slice or per slice group, in addition to the existing common RO.*

*Proposal 2 RAN2 considers to resolve the collision of RA-RNTI if slice-based RACH resources are added in addition to the existing common RACH resources.*

*Proposal 3 To prioritize specific slice(s) during RA procedure, RAN2 considers the slice-specific value of powerRampingStepHighPriority and scalingFactorBI.*

*Proposal 4 RAN2 considers to solve the collision between RA parameters prioritization for access identity and RA parameters prioritization for specific slice(s).*

[R2-2010182](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010182.zip) Slice based RACH configuration or access barring Huawei, HiSilicon discussion Rel-17 FS\_NR\_slice

[R2-2009175](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009175.zip) RACH configuration for RAN slicing Samsung Electronics discussion Rel-17

[R2-2009688](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009688.zip) Remaining issues on RACH and service continuity vivo discussion Rel-17 FS\_NR\_slice

[R2-2010223](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010223.zip) Discussion on slice aware overload control LG Electronics UK discussion Rel-17

[R2-2009974](C:\\Users\\terhentt\\Documents\\Tdocs\\RAN2\\RAN2_112-e\\R2-2009974.zip) RACH enhancements to enable UE fast access to the intended slice NEC Telecom MODUS Ltd. discussion

[R2-2009423](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2009423.zip) RACH prioritisation for slices Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_slice Late

# 10Breakout session reports

No documents shall be submitted to this AI or its sub-AIs. It is only for at-meeting-generated contents.

Breakout session reports will be approved by email.

## 10.1 Session on LTE legacy, Mobility, DCCA, Multi-SIM and RAN slicing

[R2-2010701](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010701.zip) Report from session on LTE legacy, LTE TEI16 and NR/LTE Rel-16 Mobility Vice Chairman (Nokia)

# Summary

**Agreed CRs**

*LTE legacy (Rel-15 and earlier)*

*LTE Rel-16 miscellaneous*

*Rel-16 LTE/NR mobility*

*Rel-16 DCCA*

**CRs merged to another document (fully or partly)**

*Rel-16 DCCA*

*Rel-16 LTE/NR mobility*

**Endorsed CRs**

*Rel-16 LTE/NR mobility*

**Endorsed TR**

*Rel-17 RAN slicing*

**Approved LS out**

**Post-meeting email discussions (short)**

**Post-meeting email discussions (long)**