3GPP TSG-RAN WG2 Meeting #121-bis electronic R2-2xxxxxx

April 17-26, 2023

Source: RAN2 Chairman (MediaTek)

Title: Agenda

# 1 Opening of the meeting

 RAN WG2 meeting 121 bis electronic has full decision power, and decisions do not need to be ratified at other RAN WG2 meeting (beyond the usual CR decision coordination between bis-meetings and ordinary meetings).

## 1.1 Call for IPR

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| --- |
| The attention of the delegates of this Working Group is drawn to the fact that **3GPP Individual Members have the obligation** under the IPR Policies of their respective Organizational Partners **to inform their respective Organizational Partners of Essential IPRs** they become aware of. The delegates were asked to take note that they were hereby invited:* to investigate whether their organization or any other organization owns IPRs which were, or were likely to become Essential in respect of the work of 3GPP.
* to notify their respective Organizational Partners of all potential IPRs, e.g., for ETSI, by means of the IPR Statement and the Licensing declaration forms (https://www.etsi.org/images/files/IPR/etsi-ipr-form.doc)
 |

NOTE: IPRs may be declared to the Director-General or Chairman of the SDO, but not to the RAN WG2 Chairman.

## 1.2 Network usage conditions

1/ To avoid email system overload, please don’t attach files and documents to emails e.g. for offline email discussions, but instead use files placed on the meeting server instead. Inbox/Drafts folder is used for meeting offline discussions.

## 1.3 Other

|  |
| --- |
| In accordance with the Working Procedures it is reaffirmed that: (i) compliance with all applicable antitrust and competition laws is required; (ii) timely submissions of work items in advance of TSG or WG meetings are important to allow for full and fair consideration of such matters; and (iii) the chairman will conduct the meeting with strict impartiality and in the interests of 3GPP |

Note on (i): In case of question please contact your legal counsel.

Note on (ii): WIDs don’t need to be submitted to the RAN2 meeting and will typically not be discussed here either.

# 2 General

## 2.1 Approval of the agenda

## 2.2 Approval of the report of the previous meeting

## 2.3 Reporting from other meetings

## 2.4 Instructions

Focus for current meeting

- RAN2 121bis-e has a full agenda, as usual limited by the TU planning. It is expected to focus on Rel-18. It will be up to Session chairs to prioritize maintenance topics. In general, parts of Rel-17 that are still somewhat immature, corrections with potential significant impact and incoming email discussions should be treated. It is also recognized that the time between meetings may be short and TS version availability may be an issue for some maintenance topics. At next meeting RAN2 122, maintenance will be prioritized, as usual.

Tdoc limitations

Tdoc limitations doesn’t apply to Rapporteur Input, i.e.

- Assigned summary rapporteur input of the summary.

- Email / offline discussions outcomes by discussion rapporteur,

- WI rapporteurs input for WI planning etc,

- TS rapporteur input for TS maintenance

- Contact Company of a LSin that triggers RAN2 action may submit one tdoc to facilitate the LS reply. This only applies to one of the contact companies in case there are several (default the first).

Tdoc limitations doesn’t apply to Input created at the meeting, revisions, assigned documents etc.

Tdoc limitations doesn’t apply to shadow / mirror CRs (Cat A), or In-Principle Agreed CRs.

Tdoc limitations applies to all other submitted tdocs (e.g. discussion tdoc and CR tdoc are counted as two).

## 2.5 Others

# 3 Incoming liaisons

Note: LSs are moved to the respective agenda items if any.

# 4 EUTRA Rel-17 and earlier

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

## 4.1 EUTRA corrections Rel-17 and earlier

(NB\_IOTenh4\_LTE\_eMTC6-Core; leading WG: RAN1; REL-17; WID: RP-211340)

(UPIP\_EN-DC\_UE; leading WG: RAN3; REL-17; WID: RP‑213669)

(LTE TEI17)

Essential corrections to LTE Rel-17 topics not covered by other agenda items.

(NB\_IOTenh3-Core; leading WG: RAN1; REL-16; started: Jun 18; Completed: June 20; WID: RP-200293); REL-15 and Earlier NB-IoT WIs are in scope but not listed explicitly (long list).

(LTE\_eMTC5-Core; LTE\_eMTC5-Core; leading WG: RAN1; REL-16; started: Jun 18; Completed: June 20; WID: RP192875;), REL-15 and Earlier eMTC WIs are in scope but not listed explicitly (long list).

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

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

REL-15 and Earlier EUTRA WIs are in scope but not listed explicitly (long list), Except V2X and Sidelink WIs and Positioning WIs, which are adressed by AIs below.

NOTE that LTE corrections related to NR WIs or Joint NR LTE WIs should be submitted to NR AIs below.

NOTE that LTE corrections which are the same as an NR correction should be submitted to the respective NR AI (so the NR CR and LTE CR can be treated together).

This Agenda Item is treated in the EUTRA Breakout session

## 4.2 NB-IoT and eMTC support for NTN Rel-17

(LTE\_NBIOT\_eMTC\_NTN; leading WG: RAN1; REL-17; WID: RP-211601)

Tdoc Limitation: 2 tdocs

This Agenda Item is treated in the Breakout session that includes NTN

### 4.2.1 General and Stage 2 corrections

LSs and Stage 2 corrections.

### 4.2.2 UP corrections

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed with contributions with CR in the appendix of the contribution

### 4.2.3 CP corrections

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed with contributions with CR in the appendix of the contribution

## 4.3 V2X and Side-link corrections Rel-15 and earlier

REL-15 and Earlier WIs related to V2x and Sidelink are in scope but not listed explicitly (long list).

This Agenda Item is treated in the V2X and Sidelink Breakout session

## 4.4 Positioning corrections Rel-16 and earlier

(LTE\_NavIC-Core, LTE TEI16 Positioning), REL-15 and Earlier WIs related to positioning are in scope but not listed explicitly (long list).

This Agenda Item will be handled by email.

# 5 NR Rel-15 and Rel-16

Essential corrections only.

Tdoc Limitation: 8 tdocs in total for all sub agenda items.

In case a correction need to be reflected in both NR TS and LTE TS, the corrections should be submitted under one single AI (so the NR and LTE correction can be treatee together), the sub-AIs below this

## 5.1 Common

Includes the following WIs and input that doesn’t fit elsewhere.

(NR\_newRAT-Core; leading WG: RAN1; REL-15; started: Mar. 17; closed: Jun. 19: WID: RP-191971)

(NR\_IAB-Core; leading WG: RAN2; REL-16; started: Dec 18; target Aug 20; WID: RP-200840)

(NR\_unlic-Core; leading WG: RAN1; REL-16; started: Dec 18; Closed June 20; WID: RP-192926).

(NR\_IIOT-Core; leading WG: RAN2; REL-16; started: Mar 19; Completed: Jun 20; WID: RP-200797)

(NR\_UE\_pow\_sav-Core; leading WG: RAN1; REL-16; started: Mar 19; Completed Jun 20; WID: RP-200494).

(NR\_2step\_RACH-Core; leading WG: RAN1; REL-16; started: Dec 18; Completed: June 20; WID: RP-200085).

(SRVCC\_NR\_to\_UMTS-Core; leading WG: RAN2; REL-16; started: Dec 18; Completed; Mar 20; WID: RP-190713)

(RACS-RAN-Core, leading WG: RAN2; REL-16; started: Mar 19; completed: Jun 20; WID: RP-191088)

(NG\_RAN\_PRN-Core; leading WG: RAN3; REL-16; started: Mar 19; completed: June 20; WID: RP-200122)

(NR\_eMIMO-Core, leading WG: RAN1; REL-16; started: Jun 18; target; Aug 20; WID: RP-200474;)

(NR\_CLI\_RIM; leading WG: RAN1; REL-16; started: Dec 18; Completed: Jun 20; WID: RP-191997;)

(NR\_L1enh\_URLLC-Core, leading WG: RAN1; REL-16; Completed: June 20; WID: RP-191584)

(LTE\_NR\_DC\_CA\_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; Target Aug 20; WI RP-200791)

(NR\_Mob\_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; Completed June 20; WID: RP-192277).

(NR\_HST, NR\_RRM\_enh-Core, NR\_RF\_FR1, NR\_RF\_FR2\_req\_enh, NR\_n66\_BW, LTE\_NR\_B41\_Bn41\_PC29dBm-Core, NR\_CSIRS\_L3meas,)

(NR TEI16).

LTE mob enh corrections that are common with NR mobility enhancements should be submitted to this AI.

### 5.1.1 Stage 2 and Organisational

Incoming LSs, etc. You should discuss your stage 2 CRs with the specification rapporteurs before submission. Includes impact to 38.300, 36.300, 37.340

### 5.1.2 User Plane corrections

User Plane corrections will be handled in the User Plane break out session

#### 5.1.2.1 MAC

#### 5.1.2.2 RLC PDCP SDAP BAP

#### 5.1.2.3 Other

User plane related corrections that should be handled in User plane break out session.

### 5.1.3 Control Plane corrections

#### 5.1.3.1 NR RRC

Corrections to 38331, and related change to other TS if applicable, e.g. 36331, Stage-2 etc.

#### 5.1.3.2 UE capabilities

UE cap corrections 38306, 38331

#### 5.1.3.3 Other

This agenda item addresses the idle and inactive behaviour specified in 38.304 or 36.304, LTE-specific changes for the applicable WIs, Other parts not covered elsewhere.

## 5.2 NR V2X

(5G\_V2X\_NRSL-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Aug 20; WID: RP-200129).

CR rapporteurs will take care of miscellaneous CRs to collect small changes. Please contact / coordinate with CR rapporteur company first for small changes (e.g. non-controversial clarification/correction, editorial correction, etc.).

## 5.3 NR Positioning Support

(NR\_newRAT-Core; leading WG: RAN1; REL-15; started: Mar. 17; closed: Jun. 19: WID: RP-191971)

(NR\_pos-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Jun 20; WID: RP-200218).

(NR TEI16 Positioning)

This agenda item will be handled by email.

### 5.3.1 General and Stage 2 corrections

Including incoming LSs if any, Including impact to 36.305 and 38.305. Stage 2 corrections shall be discussed with the specification rapporteur (Sven Fischer sfischer@qti.qualcomm.com) before submission. Stage 2 CRs not discussed with the specification rapporteur will not be treated.

### 5.3.2 RRC corrections

Including impact to 36.331, 38.331, and 38.306.

### 5.3.3 LPP corrections

### 5.3.4 MAC corrections

## 5.4 SON MDT support for NR

(NR\_SON\_MDT-Core; leading WG: RAN3; REL-16; started: Jun 19; Completed June 20; WID: RP-191776).

### 5.4.1 General and stage-2 corrections

Including incoming LSs, TS 37.320 corrections

### 5.4.2 TS 38.314 corrections

### 5.4.3 RRC corrections

# 6 NR Rel-17

## 6.1 Common

(NR\_MG\_enh-Core; leading WG: RAN4; REL-17; WID: RP-211591)

(NR\_UDC\_enh-Core; leading WG: RAN2; REL-17; WID: RP-211203)

(NG\_RAN\_PRN\_enh-Core; leading WG: RAN3; REL-17; WID: RP-202363)

(NR\_IAB\_enh-Core; leading WG: RAN2; REL-17; WID: RP-211548)

(NR\_UE\_pow\_sav\_enh-Core; leading WG: RAN2; REL-17; WID: RP-212632)

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

(LTE\_NR\_MUSIM-Core; leading WG: RAN2; REL-17; WID: RP-212610)

(NR\_Slice -Core; leading WG: RAN2; REL-17; WID: RP-212534)

(NR\_QoE-Core; leading WG: RAN3; REL-17; WID: RP-211406)

(NR\_ext\_to\_71GHz-Core; leading WG: RAN1; REL-17; WID: RP-212637)

(NR\_cov\_enh-Core; leading WG: RAN1; REL-17; WID: RP-211566): non-RACH-indication parts

(NR\_redcap-Core; leading WG: RAN1; REL-17; WID: RP-211574)

(NR\_feMIMO-Core; leading WG: RAN1; REL-17; WID: RP-212535)

NR TEI17: Corrections are accepted. New TEI17 tech proposal requirements: a) authored by an operator (and preferably co-signed by more), AND: b) resolves a concrete problem in the market for this operator (no new vendor initiated enhancements).

Includes Rel-17 Work Items without specific R2 Agenda Item, e.g. RAN1 and RAN4 led items, SA2 and CT1 led items (was previously “Rel-17 Other”)

Includes aspects that does not fit under the more specific AIs, e.g. multi-WI aspects.

Tdoc Limitation: 10 tdocs

### 6.1.1 Stage 2 and Organisational

Incoming LSs, etc. You should discuss your stage 2 CRs with the specification rapporteurs before submission. Includes impact to 38.300, 37.340, (36.300 if applicable)

### 6.1.2 User Plane corrections

User Plane Related aspects will be handled in the User Plane break out session. (exception: TEI new proposals if any).

### 6.1.3 Control Plane corrections

#### 6.1.3.1 NR RRC

Corrections to 38331, and related change to other TS if applicable, except UE caps.

#### 6.1.3.2 UE capabilities

UE cap corrections 38306, 38331.

#### 6.1.3.3 Other

Including idle and inactive behaviour specified in 38.304 or 36.304.

## 6.2 NR Multicast

(NR\_MBS-Core; leading WG: RAN2; REL-17; WID: RP-201038)

Tdoc Limitation: 2 tdocs

### 6.2.1 Organizational and Stage-2 corrections

Incoming LSs, general issues, corrections to TS 38.300.

### 6.2.2 CP corrections

Including corrections to TS 38.331, TS 38.304, TS 38.306.

### 6.2.3 UP corrections

Including corrections to MAC, PDCP, RLC and SDAP.

## 6.3 NR IIoT URLLC

(NR\_IIOT\_URLLC\_enh-Core; leading WG: RAN2; REL-17; WID: RP-210854)

Tdoc Limitation: 2 tdocs

### 6.3.1 Control Plane

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed with contributions with CR in the appendix of the contribution

### 6.3.2 User Plane

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed with contributions with CR in the appendix of the contribution

## 6.4 Small Data enhancements

(NR\_SmallData\_INACTIVE-Core; leading WG: RAN2; REL-17; WID: RP-212594)

Tdoc Limitation: 2 tdocs

### 6.4.1 User plane common aspects

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big critical issues can be discussed in a contribution with CR in the appendix of the contribution

### 6.4.2 Control plane common aspects

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur.

Big critical issues can be discussed in a contribution with CR in the appendix of the contribution

## 6.5 NR Sidelink relay

(NR\_SL\_Relay-Core; leading WG: RAN2; REL-17; WID: RP-212601)

Tdoc Limitation: 3 tdocs

### 6.5.1 General and stage 2 corrections

Incoming LSs, etc., and any stage 2 corrections (impact to 38.300).

### 6.5.2 Control plane corrections

A single CR with miscellaneous corrections is encouraged. Small editorial corrections should be sent directly to the CR rapporteur. Larger open issues can be discussed with contributions (limited time).

### 6.5.3 User plane corrections

A single CR with miscellaneous corrections is encouraged. Small editorial corrections should be sent directly to the CR rapporteur for the corresponding spec. Larger open issues can be discussed with contributions (limited time).

## 6.6 NR Non-Terrestrial Networks (NTN)

(NR\_NTN\_solutions-Core; leading WG: RAN2; REL-17; WID: RP-211557)

Tdoc Limitation: 2 tdocs

### 6.6.1 General and Stage 2 corrections

LSs and Stage 2 corrections.

### 6.6.2 UP corrections

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed with contributions with CR in the appendix of the contribution

### 6.6.3 CP corrections

A single CR with miscelaneous corrections is encouraged. Small editorial corrections should be sent directly to rapporteur. Big open issues can be discussed with contributions with CR in the appendix of the contribution

## 6.7 NR positioning enhancements

(NR\_pos\_enh-Core; leading WG: RAN1; REL-17; WID: RP-210903)

Tdoc Limitation: 4 tdocs

### 6.7.1 General and stage 2 corrections

### 6.7.2 RRC corrections

A single CR with miscellaneous corrections is encouraged. Small editorial corrections should be sent directly to the CR rapporteur. Larger open issues can be discussed with contributions (limited time).

### 6.7.3 LPP corrections

A single CR with miscellaneous corrections is encouraged. Small editorial corrections should be sent directly to the CR rapporteur. Larger open issues can be discussed with contributions (limited time).

### 6.7.4 MAC corrections

A single CR with miscellaneous corrections is encouraged. Small editorial corrections should be sent directly to the CR rapporteur. Larger open issues can be discussed with contributions (limited time).

### 6.7.5 UE capabilities

A single CR with miscellaneous corrections is encouraged. Small editorial corrections should be sent directly to the CR rapporteur. Larger open issues can be discussed with contributions (limited time).

## 6.9 SON MDT

(NR\_ENDC\_SON\_MDT\_enh-Core; leading WG: RAN3; REL-17; WID: RP-201281)

Tdoc Limitation: 2 tdocs

### 6.9.1 Stage-2

Stage-2 corrections and system level discussions.

### 6.9.3 SON Corrections

6.9.4 MDT Corrections

## 6.10 NR Sidelink enhancements

(NR\_SL\_enh-Core; leading WG: RAN1; REL-17; WID: RP-202846)

Tdoc Limitation: 3 tdocs

Note for RRC and MAC CRs, CR rapporteur’s summary and suggestion may be provided. CR rapporteurs will take care of miscellaneous CRs to collect small changes. Please contact / coordinate with CR rapporteur company first for small changes (e.g. non-controversial clarification/correction, editorial correction, etc.).

### 6.10.1 General and Stage 2 corrections

LSs and Stage 2 corrections.

### 6.10.2 Control plane corrections

Includes corrections on 38.331 and 38.304.

### 6.10.3 User plane corrections

Includes the email discussion [POST121][510][V2X/SL] and corrections on 38.321, 38.322, and 38.323.

## 6.11 RACH indication and partitioning

Expected to cover WIs SDT, CovEnh, RedCap, RAN slicing. RA specific aspects from the different WI should be covered in this AI given the RA experts are all there.

Tdoc Limitation: 1 tdocs

# 7 Rel-18

## 7.1 NR network-controlled repeaters

(NR\_NetConRepeater; leading WG: RAN1; REL-18; WID: RP-230175)

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

### 7.1.1 Organizational

Including LSs and any rapporteur inputs.

### 7.1.2 Signalling for side control information

Signalling and procedures for for side control information, based on RAN1 agreements.

### 7.1.3 Other RAN2 aspects

Other RAN2 aspects, including: SI impacts, RRC states, RRM, capabilities and others not covered by 8.1.2.

### 7.1.4 Repeater management

RAN2 aspects of repeater management (if any).

Note: this AI is assumed to be handled in RAN3, it will be treated with lower priority (may not be treated at all) in RAN2.

## 7.2 Expanded and improved NR positioning

(NR\_pos\_enh2; leading WG: RAN1; REL-18; WID: RP-223549)

Time budget: 2 TU

Tdoc Limitation: 4 tdocs

### 7.2.1 Organizational

Including incoming LSs and rapporteur inputs.

### 7.2.2 Sidelink positioning

Positioning architecture and signalling procedures (e.g. configuration, measurement reporting, etc) to enable sidelink positioning. Including measurements to enable RTT-based positioning, SL-AoA, and SL-TDOA; signalling and associated UE behaviour for support of unicast, groupcast (not including many-to-one) and broadcast of SL-PRS transmissions; reporting signalling and procedures to facilitate support of SL positioning in all coverage scenarios and for PC5-only and joint PC5-Uu scenarios; and signalling to NG-RAN for SL positioning and service authorization as needed.

### 7.2.3 RAT-dependent integrity

Error modelling parameters, signalling, and procedures to support UE-based and LMF-based integrity of RAT-dependent positioning methods.

### 7.2.4 LPHAP

Enhancements for enabling LPHAP use case 6 (TS 22.104), including extending eDRX cycle (coordinated with RedCap WI); SRS configuration enhancements based on validity area for UEs in RRC\_INACTIVE; DL-PRS measurements in RRC\_IDLE and reporting in RRC\_CONNECTED; and alignment between eDRX and PRS configurations.

### 7.2.5 RedCap positioning, carrier phase positioning, and bandwidth aggregation for positioning

RAN1 led objectives that may require progress in RAN1 before RAN2 can take decisions. This agenda item will be treated at lower priority.

## 7.3 Network energy savings for NR

(Netw\_Energy\_NR -Core; leading WG: RAN1; REL-18; WID: RP-223540)

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 7.3.1 Organizational

LS, workplan, email discussion etc

### 7.3.2 DTX/DRX mechanism

Including email discussions [POST121][311][NES] DTX/DRX - gNB and UE behaviours (InterDigital) and [POST121][312][NES] DTX/DRX - Configuration/activation/deactivation and alignment (Huawei)

### 7.3.3 SSB-less Scell operation

Contributions on inter-band CA for FR1 and co-located cells

Will not be treated in this meeting

### 7.3.4 Cell selection/re-selection

Contributions mechanisms to prevent legacy UEs camping on cells adopting the Rel-18 NES mode

Will not be treated in this meeting. We will treat this topic once some progress is made on different NES solutions

### 7.3.5 Connected mode mobility

Contributions on CHO procedure enhancement(s) in case source/target cell is in NES mode

### 7.3.6 Others

This will be downprioritized

## 7.4 Further NR mobility enhancements

(NR\_Mob\_enh2-Core; leading WG: RAN2; REL-18; WID: RP-223520)

Time budget: 2 TU

Tdoc Limitation: 6 tdocs .

### 7.4.1 Organizational

Including LSs and any rapporteur inputs (e.g. work plan, running CRs update).

### 7.4.2 L1L2 Triggered Mobility

#### 7.4.2.1 General and Stage-2

Including elaboration on the components of the latency time line, if needed. Including further Specification of focus Scenarios, if needed. Including impacts to and expectations of other groups. Including security.

At current meeting: Address RACH-less LTM (if possible: early acquisition of TA). Consolidate the procedure(s) for the different scenarios. Clarify further the differences of expectations/procedure/performance for intra/inter-DU, intra/inter-freq.

#### 7.4.2.2 RRC

Consolidate the RRC solutions, in particular candidate configuration / reference configuration / delta configuration. Address open issues, e.g. RRC part of the cell switch without L2 reset.

WID: Configuration and maintenance for multiple candidate cells to allow fast application of configurations for candidate cells [RAN2, RAN3].

#### 7.4.2.3 Cell Switch

Including remaning issues and solutions focused on dynamic cell switch not addressed by the RRC subclause above. Determine remaining parts of the contents of the cell switch command. Discussion can inculde actions and procedure that may be triggered simultaneously, e.g. by other MAC CEs.

Determine more L2 behaviour details of the cell switch without L2 reset.

WID: Dynamic switch mechanism from serving cell to candidate cell (including SpCell and SCell) for the potential applicable scenarios based on L1/L2 signalling [RAN2, RAN1]

### 7.4.3 NR-DC with selective activation cell of groups

Including outcome of [Post121][044][eMob] SCG Selective Activation in NR-DC Signalling interaction (QC).

### 7.4.4 CHO including target MCG and candidate SCGs for CPC CPA in NR-DC

Include Stage-3 RRC proposals (in order to have better discussion).

## 7.5 XR Enhancements for NR

(NR\_XR\_enh-Core; leading WG: RAN2; REL-18; WID: [RP-230786](https://www.3gpp.org/ftp/TSG_RAN/TSG_RAN/TSGR_99/Docs/RP-230786.zip))

Time budget: 2 TU

Tdoc Limitation: 5 Tdocs

### 7.5.1 Organizational

Including LSs and any rapporteur inputs (e.g. work plan, SA2/SA4 progress reports)

### 7.5.2 XR awareness

Including discussion on XR traffic assistance information from UE to network (e.g. to support the tethering use case), e.g. periodicity, UL traffic arrival information

Including discussion on the use of PDU set information in RAN for DL and UL (e.g. PSI, PSIHI, PSER, PSDB, EDBI) and what (if anything) needs to be specified in RAN2.

### 7.5.3 XR-specific power saving

Including discussion on solutions for DRX cycles with XR and the potential impacts to RAN1/4 specification (if any).

Including discussion on solutions for SFN wrap-around with XR and the potential impacts to RAN1/4 specification (if any).

### 7.5.4 XR-specific capacity improvements

No documents should be submitted to 7.5.4. Please submit to 7.5.4.x

#### 7.5.4.1 BSR enhancements for XR

Including discussion on details of new BSR table(s): Are they fixed or semi-static? Is linear or exponential stepping used? Will there be one or more new tables? Will a new BSR table be per LCH or per LCG? How will the delay/remaining time reporting work?

#### 7.5.4.2 Discard operation for XR

Including discussion how to achieve PDU-set based discard in PDCP layer for UL and DL (e.g. do we use discard timer or have another way to achieve the discard) and whether that can have impact to RLC layer.

Including discussion on impact of PSI and PSIHI for PDU discard at UE and what (if anything) needs to be specified in RAN2.

#### 7.5.4.3 Configured Grant enhancements for XR

Including RAN2-specific aspects of Multiple Configured Grant (CG) PUSCH transmission occasions in a period of a single CG PUSCH configuration.

Including RAN2-specific aspects of dynamic indication of unused CG PUSCH occasion(s) based on Uplink Control Information (UCI) by the UE.

Including discussion on how retransmission-less CG defined for NTN could work with XR (as per RAN#99 discussion).

NOTE: Topics other than retransmission-less CG may be deprioritized in this meeting.

## 7.6 IoT NTN enhancements

(IoT\_NTN\_enh-Core; leading WG: RAN1; REL-18; WID: RP-223519)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

### 7.6.1 Organizational

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

### 7.6.2 Performance Enhancements

#### 7.6.2.1 HARQ enhancements

#### 7.6.2.2 GNSS operation enhancements

### 7.6.3 Mobility Enhancements

#### 7.6.3.1 Enhancements for neighbour cell measurements

Including outcome of:

[Post121][105][IoT NTN Enh] Neighbour cell assistance information (Qualcomm)

#### 7.6.3.2 Other

### 7.6.4 Enhancements to discontinuous coverage

## 7.7 NR NTN enhancements

(NR\_NTN\_enh -Core; leading WG: RAN1; REL-18; WID: RP-223534)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

### 7.7.1 Organizational

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

### 7.7.2 Coverage Enhancements

### 7.7.3 Network verified UE location

### 7.7.4 NTN-TN and NTN-NTN mobility and service continuity enhancements

#### 7.7.4.1 Cell reselection enhancements

##### 7.7.4.1.1 NTN-TN enhancements

##### 7.7.4.1.2 NTN-NTN enhancements

Including outcome of:

[Post121][106][NR NTN Enh] NTN-NTN cell reselection (ZTE)

Other contributions in this AI might not be treated at RAN2#121bis

#### 7.7.4.2 Handover enhancements

## 7.8 NR support for UAV

(NR\_UAV -Core; leading WG: RAN1; REL-18; WID: RP-223545)

Time budget: 1 TU

Tdoc Limitation: 3

### 7.8.1 Organizational

### 7.8.2 Measurement reporting for mobility and interference control

Contributions should focus on enhancement to measurement reports, for example UE-triggered measurement report based on configured height thresholds, Reporting of height, location and speed in measurement report, Measurement reporting based on a configured number of cells (i.e. larger than one) fulfilling the triggering criteria simultaneously

Including [POST121][313][UAV] Height-dependent configuration (Qualcomm)

### 7.8.3 Flight path reporting

*Contributions on enhancements to flight path reporting*

Including [POST121][314][UAV] Flight path reporting (Intel)

### 7.8.4 Subscription-based aerial-UE identification

Contributions should focus on signaling required to support subscription-based aerial-UE identification

Note: Work done in LTE is a starting point for this objective. NR-specific enhancements can be considered, if needed, while overall the LTE and NR solutions should be harmonized as much as possible.

### 7.8.5 UAV identification broadcast

UAV identification broadcast using PC5-U will be treated with higher priority. Contributions analysing the gap for supporting DAA using the same framework as BRID can be submitted.

## 7.9 Enhanced NR Sidelink Relay

(NR\_SL\_relay\_enh-Core; leading WG: RAN2; REL-18; WID: RP-223501)

Time budget: 1.5 TU

Tdoc Limitation: 4 tdocs

### 7.9.1 Organizational

Including incoming LSs and rapporteur inputs.

### 7.9.2 UE-to-UE relay

Single-hop Layer-2 and Layer-3 UE-to-UE relay for unicast. Including common L2/L3 functionality comprising relay discovery and (re)selection and L2-specific functionality including adaptation layer design, control plane procedures, and QoS handling if needed.

### 7.9.3 Service continuity enhancements for L2 UE-to-network relay

Inter-gNB direct/indirect path switching; intra-gNB indirect/indirect path switching; and inter-gNB indirect/indirect path switching, to be supported by reuse of solutions for the other scenarios.

### 7.9.4 Multi-path relaying

Mechanisms to support multi-path scenarios where a UE is connected to the same gNB using one direct path and one indirect path via 1) Layer-2 UE-to-Network relay, or 2) via another UE (where the UE-UE inter-connection is assumed to be ideal). This agenda item will include a rapporteur contribution summarising open issues from RAN2#121 (invited contribution not counted against the tdoc limit).

### 7.9.5 DRX

Study the gains and, if needed, specify signalling between gNB and relay UE in sidelink mode 2 to assist the determination of the sidelink DRX configuration used for remote UE. This agenda item will be handled at lower priority.

## 7.10 IDC enhancements for NR and MR-DC

(NR\_IDC\_enh-Core; leading WG: RAN2; REL-18; WID: RP-221281)

Time budget: 0 TU

Tdoc Limitation: 0 tdocs

Endorsement of running CRs is treated (incl related technical discussion), i.e. the outcome of email discussion [Post121][651][IDC] TS 38.300 CR on IDC (Huawei), [Post121][652][IDC] TS 37.340 CR on IDC (ZTE), [Post121][653][IDC] TS 38.331 CRs on IDC (xiaomi), [Post121][654][IDC] Capability CRs on IDC (Intel)

Otherwise this topic is not treated at RAN2 121bis-e.

## 7.11 Enhancements of NR Multicast and Broadcast Services

(NR\_MBS\_enh-Core; leading WG: RAN2; REL-18; WID: RP-221458)

Time budget: 0.75 TU

Tdoc Limitation: 3 tdocs

### 7.11.1 Organizational

LS in, rapporteur input, running CRs etc.

### 7.11.2 Multicast reception in RRC\_INACTIVE

Objective: Specify support of multicast reception by UEs in RRC\_INACTIVE state [RAN2, RAN3], PTM configuration for UEs receiving multicast in RRC\_INACTIVE state [RAN2]. Study the impact of mobility and state transition for UEs receiving multicast in RRC\_INACTIVE. (Seamless/lossless mobility is not required) [RAN2, RAN3].

Papers should not be submitted to 7.11.2, please use 7.11.2.1 or 7.11.2.2 instead.

#### 7.11.2.1 Control plane

Further details of PTM configuration, service continuity, notifications and RRC state transitions handling including:

- FFS whether the network can provide PTM configuration for intra-gNB cells

- PTM configuration structure (message, parameters etc.)

- service continuity during mobility

- notifications/group paging enhancements due to session activation/deactivation or due to Inactive mutlicast reception on/off

- MCCH change notification vs. (group) Paging for different cases

Including report of [Post121][606][eMBS] Service continuity and notifications (ZTE)

**NOTE: Aspects covered by [Post121][606][eMBS] should not be discussed in company papers**

#### 7.11.2.2 User plane

Including aspects such as CFR configuration, MAC operation, identification of PHY layer impacts etc.

Including report of [Post121][607][eMBS] UP issues for Multicast in RRC Inactive (Apple)

**NOTE: Aspects covered by [Post121][607][eMBS] should not be discussed in company papers**

### 7.11.3 Shared processing for MBS broadcast and Unicast reception

Objective: Specify Uu signalling enhancements to allow a UE to use shared processing for MBS broadcast and unicast reception, i.e., ‎including UE capability and related assistance information reporting regarding simultaneous unicast reception in RRC\_CONNECTED and MBS broadcast reception from the same or different operators [RAN2]

Including aspects such as:

- Granularity of capability signalling for MBS broadcast reception from non-serving cell

- What additional information and exact parameters should be reported

- Scenarios for UE to report additional info in MII and whether/how network can control when UE should report it

## 7.12 Mobile IAB (Integrated Access and Backhaul) for NR

( NR\_mobile\_IAB -Core; leading WG: RAN3; REL-18; WID: RP-221815)

Time budget: 0.5 TU

Tdoc Limitation: 3 tdocs

### 7.12.1 Organizational

Ls in Rapporteur input etc

### 7.12.2 Mobility Enhancements

Enhancements for mobility of an IAB-node together with its served UEs, including aspects related to group mobility. No optimizations for the targeting of surrounding UEs. [RAN3, RAN2]

#### 7.12.2.1 Connected mode

RAN2 has assumed that Conditional HO, and RACH-less HO are applicable. Discussion of RACH-less and its applicability of other Rel-18 WIs. Other aspects of Connected mode mobility enhancements.

#### 7.12.2.2 Idle/Inactive mode

Misc low-complexity enhancements, if any. Continue the discussion on SIB indication to UEs for enhancements of cell reselection, primarily inter-frequency cell reselection. Need to agree on UE behaviour before determining whether to have the SIB indication (potentially lower priority for current meeting).

### 7.12.3 Other

Define Procedures for migration/topology adaptation to enable IAB-node mobility, including inter-donor migration of the entire mobile IAB-node (full migration) [RAN3, RAN2]. Mitigation of interference due to IAB-node mobility, including the avoidance of potential reference and control signal collisions (e.g. PCI, RACH). [RAN3, RAN2].

## 7.13 Further enhancement of data collection for SON MDT in NR and EN-DC

(NR\_ENDC\_SON\_MDT\_enh2-Core; leading WG: RAN3; REL-18; WID: RP-221825)

Includes LS in’s related to AI/ML for NG-RAN

Time budget: 0.5 TU

Tdoc Limitation: 3 tdocs

### 7.13.1 Organizational

Ls in Rapporteur input.

### 7.13.2 MRO for inter-system handover for voice fallback

### 7.13.3 MDT override

Will not be treated in #121b

### 7.13.4 SHR and SPCR

Will not be treated in #121b

### 7.13.5 SON for NR-U

Focus on UE impacts. RAN2/RAN3 progress should be considered.

Will not be treated in #121b online session. Offline email discussion is possible.

### 7.13.6 RACH enhancement

### 7.13.7 SON/MDT enhancements for Non-Public Networks

Will not be treated in #121

### 7.13.8 Other

Will not be treated in #121b

## 7.14 Enhancement on NR QoE management and optimizations for diverse services

(NR\_QoE\_enh-Core; leading WG: RAN3; REL-18; WID: RP-223488)

Time budget: 1 TU

Tdoc Limitation: 2 tdocs

### 7.14.1 Organizational

Including LSs and any rapporteur inputs (e.g. work plan)

### 7.14.2 QoE measurements in RRC\_IDLE INACTIVE

Including discussion on whether something on MBS QoE configuration can be provided in RRCRelease-message, and how would such indications work with configuration provided in RRCReconfiguration.

Including discussion on AS layer buffer size (e.g. how many values, what is the minimum value).

Including discussion on what AS layer stores in IDLE/INACTIVE and what exactly is sent to AL.

Including discussion on handling area scope for MBS QoE and how long will UE retain the QoE configuration in IDLE/INACTIVE.

### 7.14.3 Rel-17 leftover topics for QoE

Including discussion on Rel-17 leftover topics as agreed in previous meetings.

This agenda item will not be treated in this meeting (except for LSs received from other WGs).

### 7.14.4 Support of QoE measurements for NR-DC

Including discussion on the new SRB (“SRB5”) configuration and procedure details (e.g. leg change, RRC configuration, QoE reporting aspects, etc.).

Including discussion on how to achieve splitting of QoE configuration identities between MN and SN.

Including discussion on different m-based QoE configurations for MN/SN (pending RAN3 decisions).

### 7.14.5 Other topics

Including discussion on the continuity of legacy QoE measurement job for streaming and MTSI service during intra-5GC inter-RAT handover process.

Including any other QoE enhancement discussion (e.g. service type aspects).

This agenda item will not be treated in this meeting (except for LSs received from other WGs).

## 7.15 NR Sidelink evolution

(NR\_SL\_enh2; leading WG: RAN1; REL-18; WID: RP-230077)

Time budget: 1 TU

Tdoc Limitation: 5 tdocs

### 7.15.1 Organizational

Includes Incoming LS and rapporteur inputs.

### 7.15.2 SL-U: SL Consistent LBT failure

Includes e.g. further updates/details on SL consistent LBT failure, etc.

### 7.15.3 SL-U: COT sharing and LCP

Includes e.g. LCP enhancement, need of assistance info to initiating UE, further updates/details on COT sharing, etc.

### 7.15.4 SL-U: Others

Includes e.g. MCSt impacts, SL resource (re)selection impact, leftovers on SL CAPC, SL DRX and SL CG, etc.

### 7.15.5 SL-FR2

Includes e.g. identification of RAN2 scopes (including high-level wayforward), updates/details of related RAN1 discussion, etc. Note this agenda item may not be handled during the meeting (e.g. due to lack of time, premature RAN1 progress, etc.)

### 7.15.6 SL CA Enhancements

This work assumes a very high degree of reuse from LTE

## 7.16 Artificial Intelligence Machine Learning for NR air interface

(FS\_NR\_AIML\_air; leading WG: RAN1; REL-18; WID:RP-221348)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

Technical input will be prioritized, Organizational aspects may not be treated.

### 7.16.1 Organizational

LS ins. Rapporteur input.

### 7.16.2 AIML methods

Explore AIML methods that are expected applicable to this SI and their expected or potential architecture (allocation of functionality to entities), Identification of Models, other framework aspects, impact on RAN2. Most of LCM is in RAN2 scope.

Both general aspects and use-cases specific aspects are applicable (for use cases in scope). Aspects of on-line/real-time training are deprioritized at current meeting. Please input to 7.16.2.x

#### 7.16.2.1 Architecture General

Model ID: 1a. Attempt to agree a list of cases for which a model ID shall/should be used. 1b. Can discuss also model meta-data that can be useful and the detailed cases/contexts of such usefulness. Should take into account R1 progress if any. At current meeting: No need to discuss whether metadata is a sub-part of a structured model ID or whether we have other IDs, algorithm ID, function ID etc.

Mapping of Functionality to entities. 2: Identification of justifications and issues (tangible) that need the definition of architecture, function mapping, and possibly later 3GPP procedure support (e.g. a: for cases of off-line training, is there any reason to specify where training takes place, e.g. b: for cases of network-only models, what support in 3GPP specifications is expected … etc). 3: Review of RAN1 logical/functional architecture (can also consider other inspiration e.g. from R3 SA2), with logical/functional entities their relation etc. 4: At this meeting, expect that the detailed mapping to physical entities is discussed per functionality (for Data Collection, for Model tranfser/delivery, per LCM purpose etc) as below.

#### 7.16.2.2 Data Collection

Expect to continue evaluation, e.g. evaluation of cases / methods wrt different LCM purposes. Determine which tangible issues if any (e.g. performance aspects) should/could be considered for later decisions on data collection.

#### 7.16.2.3 Model transfer – delivery

Expect to continue evaluation of cases / methods wrt different LCM purposes. Determine which tangible issues if any (e.g. performance aspects) should/could be considered for later decisions on data collection.

#### 7.16.2.4 Model Control other

Model control beyond / other than Model transfer – delivery

## 7.17 Dual Transmission/Reception (Tx/Rx) Multi-SIM for NR

(NR\_DualTxRx\_MUSIM-Core; leading WG: RAN2; REL-18; WID: [RP-230751](https://www.3gpp.org/ftp/TSG_RAN/TSG_RAN/TSGR_99/Docs/RP-230751.zip))

Time budget: 0.5 TU

Tdoc Limitation: 3 tdocs

### 7.17.1 Organizational

Including LSs and any rapporteur inputs (e.g. work plan)

### 7.17.2 Procedures for MUSIM temporary capability restriction

Including discussion on UE procedures when UE is in IDLE/INACTIVE towards NW A, e.g. how to handle UE moving to CONNECTED in NW A while already being CONNECTED in NW B: Does UE indicate something in RRC setup/resume request towards NW A or NW B?

Including discussion on UE procedures when UE is in CONNECTED towards NW A, e.g. how to handle UE moving to CONNECTED in NW B

Including discussion on how UE indicates it is using temporary UE capabilities at connection setup/resume

### 7.17.3 Allowed MUSIM temporary capability restrictions

Including discussion on which UE capabilities can be impacted by temporary UE capability restrictions and how signalling of temporary UE capability changes works (e.g. for band combination restrictions due to band conflict), what is the granularity of temporary UE capability restrictions, and what does UE report to the network?

### 7.17.4 MUSIM gap priorities and other RAN4 impacts

Including discussion on RAN4 LS [R4-2303249](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_106/Docs/R4-2303249.zip) concerning Rel-17 MUSIM gap priorities

Including analysis on RAN4 impact on the maximum UL power change due to R18 MUSIM

## 7.18 Mobile Terminated Small Data Transmission

(NR\_NR\_MT\_SDT-Core; leading WG: RAN2; REL-18; WID: RP-222993)

Time budget: 0 TU

Tdoc Limitation: 0 tdoc

This topic is not planned to be treated in RAN2 121bis-e.

## 7.19  Enhanced support of reduced capability NR devices

(NR\_redcap\_enh-Core; leading WG: RAN1; REL-18; WID: RP-223544)

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 7.19.1   Organizational

Incoming LSs, etc.

### 7.19.2   Enhanced eDRX in RRC\_INACTIVE

PTW location and duration in overlapping/non-overlapping PHs. Which paging to monitor in the PTWs/calulation of T.

Fallback behaviour when UE moves to cell not supporting INACTIVE eDRX > 10.24s.

Support of INACTIVE eDRX (only for UEs supporting Rel-17 eDRX?).

### 7.19.3   Further reduced UE complexity in FR1

Early indication.

Access restriction for eRedCap.

Capability related, e.g. how to define an eRedCap UE.

## 7.20 NR MIMO evolution

(NR\_MIMO\_evo\_DL\_UL-Core; leading WG: RAN1; REL-18; WID: RP-223276)

Time budget: 0.5 TU

Tdoc Limitation: 2 tdoc

### 7.20.1   Organizational

Rapporteur input, incoming LS etc.

### 7.20.2   Two TAs for multi-DCI multi-TRP

Includes discussion on whether to support per TRP UE-initiated RACH procedure, other RAN2 impacts of Two TAs for multi-DCI multi-TRP operation, etc.

### 7.20.3   Other

Other RAN2 impacts than those discussed in 7.20.1 and 7.20.2.

Note: This agenda item is with lower priority, i.e., it is treated only if time allows.

## 7.21 Further NR coverage enhancements

(NR\_cov\_enh2-Core; leading WG: RAN1; REL-18; WID: RP-221858)

Time budget: 0.5 TU

Tdoc Limitation: 1 tdoc

### 7.21.1   Organizational

Incoming LSs, Rapporteur input etc.

### 7.21.2   General

Identify RAN2 impacts for PRACH coverage enhancements (based on RAN1 agreements), overall imapct to RACH procedure and configuration of RACH resources.

## 7.22 Study on low-power wake-up signal and receiver for NR

(FS\_NR\_LPWUS; leading WG: RAN2; REL-18; WID: RP-222644)

Time budget: 0.5 TU

Tdoc Limitation: 2 tdoc

At Current meeting, mostly scope clarification discussion is expected: Identify RAN2 impacts, expected RAN2 decision topics. Can also assess RAN1 maturity and RAN2 dependency on RAN1 progress.

Selected concrete technical proposals may be treated, if any.

### 7.22.1   Organizational

Incoming LSs, Rapporteur input etc.

### 7.22.2   General

## 7.23 Timing Resiliency and URLLC Enh

(NR\_TRS\_URLLC; leading WG: RAN3; REL-18; WID: RP-230754)

Time budget: 0.5 TU

Tdoc Limitation: 2 tdoc

### 7.23.1   Organizational

Incoming LSs, Rapporteur input etc.

### 7.23.2   General

## 7.24 NR TEI18

Specific items may be allocated to a breakout session for treatment.

Time budget: 1 TU

### 7.24.1 TEI proposals by Other Groups

Items initiated by other groups that is/has been communicated by LS, where the other group indicate this is TEI18. (Specific other-group-WIs should use the R18 Other Agenda Item below).

### 7.24.2 TEI proposals by RAN2

Items initiated in RAN2.

Tdoc limitation: 1 tdoc for non-previously-agreed TEI proposals.

## 7.25 R18 Other

Specific items may be allocated to a breakout session for treatment.

Impacts from Other RAN WGs and TSGs that has no separate TU budget in RAN2. LS ins for Rel-18 specific WIs/SIs that has no RAN WI.

Time budget: 2 TU

Tdoc Limitation: -

### 7.25.1 RAN4 led items

### 7.25.2 RAN1 led items

E.g. MC enhancements, DSS

### 7.21.3 Other

RAN3, SA2, SA3, CT1 led items and others, e.g. eNPN