3GPP TSG-RAN WG2 Meeting #129 R2-24xxxx

Athens, Greece, Feb. 17th – 21st, 2025

Source: RAN2 Chair (InterDigital)

Title: Agenda

# 1 Opening of the meeting

## 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 chair 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

CRs

* Use latest CR template version 12.3 for all CRs submitted to RAN2 meeting

Rel-18 and earlier maintenance CRs

* Only essential/critical corrections are expected
* Editorial and clarification corrections should be sent to be reviewed and approved by spec rapporteurs prior to submission.
* Editorials corrections should be collected and submitted by spec rapporteurs.
* NOTE: the tdoc limit applies to all CRs (i.e. WI spec rapporteurs are NO longer expected to submit individual contributions). They can submit a company CR where they also include miscellaneous corrections that have been sent to them.

Rel-18 UE capabilities

- EUTRA UE capabilities corrections are covered by separate CRs

- RAN1/RAN4 NR UE capabilities (new) and corrections are covered in Rel-18 common MegaCRs (38306 and 38331) covering all rel-18 WIs (end outcome).

- UE capabilities in LPP 37355 and SLPP 38355 are covered in the main CRs for the Positioning WI.

During the work on NR UE caps:

- In a Common Rel-18 Agenda Item (AI): RAN1 and RAN4 feature corrections are handled jointly under a common AI, with some explicit exceptions. Running UE cap MegaCRs are maintained for the parts handled in the common AI.

- In WI-specific Rel-18 Agenda Items: RAN2 features/corrections are handled per WI and agreed as individual CRs

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,

- Limit of 1 WI/SI rapporteurs input for WI planning. The work plan is not expected to be updated/submitted every meeting, unless needed. It can include progress of other WG groups in the same Tdoc (i.e. separate Tdocs on other WG agreements are not required).

- 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).

Postponed CRs still count towards tdoc limit unless 3 or more companies are co-sourcing it.

Tdoc request/submission for RAN2#129 deadlines:

* Tdoc Submission deadline: Feb. 7th, 1000 UTC

## 2.5 Others

**Rapporteur Changes**

**Spec               Former Rapporteur             Proposed New Rapporteur**

38.306             ZiYi Li (Intel)                        ZiYi Li (Xiaomi)

38.355             Yi Guo (Intel)                       Yi Guo(Xiaomi)

# 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](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_92e/Docs/RP-211340.zip))

(UPIP\_EN-DC\_UE; leading WG: RAN3; REL-17; WID: [RP‑213669](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_94e/Docs/RP-213669.zip))

(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](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_87e/Docs/RP-200293.zip)); 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: [RP-192875](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_86/Docs/RP-192875.zip);), 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](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_84/Docs/RP-190921.zip));

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

(LTE\_NBIOT\_eMTC\_NTN; leading WG: RAN1; REL-17; WID: [RP-211601](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_92e/Docs/RP-211601.zip))

REL-16 and Earlier EUTRA WIs are in scope but not listed explicitly (long list), Except Positioning WI, which is addressed 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 Maintenance Breakout session (Corrections for LTE\_NBIOT\_eMTC\_NTN might be treated in the NTN breakout session)

## 4.3 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).

Tdoc Limitation: 1 tdoc

# 5 NR Rel-15 and Rel-16

Essential corrections only.

Tdoc Limitation: 2 tdocs in total for all sub agenda items NOTE: some agenda items have additional Tdoc limits.

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 treated 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](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_85/Docs/RP-191971.zip))

(NR\_IAB-Core; leading WG: RAN2; REL-16; started: Dec 18; target Aug 20; WID: [RP-200840](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_88e/Docs/RP-200840.zip))

(NR\_unlic-Core; leading WG: RAN1; REL-16; started: Dec 18; Closed June 20; WID: [RP-192926](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_86/Docs/RP-192926.zip)).

(NR\_IIOT-Core; leading WG: RAN2; REL-16; started: Mar 19; Completed: Jun 20; WID: [RP-200797](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_88e/Docs/RP-200797.zip))

(NR\_UE\_pow\_sav-Core; leading WG: RAN1; REL-16; started: Mar 19; Completed Jun 20; WID: [RP-200494](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_87e/Docs/RP-200494.zip)).

(NR\_2step\_RACH-Core; leading WG: RAN1; REL-16; started: Dec 18; Completed: June 20; WID: [RP-200085](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_87e/Docs/RP-200085.zip)).

(SRVCC\_NR\_to\_UMTS-Core; leading WG: RAN2; REL-16; started: Dec 18; Completed; Mar 20; WID: [RP-190713](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_83/Docs/RP-190713.zip))

(RACS-RAN-Core, leading WG: RAN2; REL-16; started: Mar 19; completed: Jun 20; WID: [RP-191088](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_84/Docs/RP-191088.zip))

(NG\_RAN\_PRN-Core; leading WG: RAN3; REL-16; started: Mar 19; completed: June 20; WID: [RP-200122](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_87e/Docs/RP-200122.zip))

(NR\_eMIMO-Core, leading WG: RAN1; REL-16; started: Jun 18; target; Aug 20; WID: [RP-200474)](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_87e/Docs/RP-200474.zip)

(NR\_CLI\_RIM; leading WG: RAN1; REL-16; started: Dec 18; Completed: Jun 20; WID: [RP-191997](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_85/Docs/RP-191997.zip))

(NR\_L1enh\_URLLC-Core, leading WG: RAN1; REL-16; Completed: June 20; WID: [RP-191584](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_84/Docs/RP-191584.zip))

(LTE\_NR\_DC\_CA\_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; Target Aug 20; WI [RP-200791](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_88e/Docs/RP-200791.zip))

(NR\_Mob\_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; Completed June 20; WID: [RP-192277](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_85/Docs/RP-192277.zip)).

(NR\_SON\_MDT-Core; leading WG: RAN3; REL-16; started: Jun 19; Completed June 20; WID: [RP-191776](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_85/Docs/RP-191776.zip))

(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,)

(5G\_V2X\_NRSL-Core; leading WG: RAN1; REL-16; started: Mar 19; completed; Aug 20; WID: [RP-200129](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_87e/Docs/RP-200129.zip))

(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

### 5.1.3 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.

## 5.3 NR Positioning Support

(NR\_newRAT-Core; leading WG: RAN1; REL-15; started: Mar. 17; closed: Jun. 19: WID: [RP-191971](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_85/Docs/RP-191971.zip))

(NR\_pos-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Jun 20; WID: [RP-200218](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_87e/Docs/RP-200218.zip)).

(NR TEI16 Positioning)

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.

Tdoc Limitation: 1 tdoc

# 6 NR Rel-17

Essential corrections only. Editorial/clarifications should be sent to be reviewed and approved by spec rapporteurs prior to submission. Editorials should only be submitted by spec rapporteurs.

Tdoc limitation: 4 Tdocs

## 6.1 Common

(NR\_MG\_enh-Core; leading WG: RAN4; REL-17; WID: [RP-211591](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_92e/Docs/RP-211591.zip))

(NR\_UDC\_enh-Core; leading WG: RAN2; REL-17; WID: [RP-211203](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_92e/Docs/RP-211203.zip))

(NG\_RAN\_PRN\_enh-Core; leading WG: RAN3; REL-17; WID: [RP-202363](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_90e/Docs/RP-202363.zip))

(NR\_IAB\_enh-Core; leading WG: RAN2; REL-17; WID: [RP-211548](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_92e/Docs/RP-211548.zip))

(NR\_UE\_pow\_sav\_enh-Core; leading WG: RAN2; REL-17; WID: [RP-212630](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_93e/Docs/RP-212630.zip))

(LTE\_NR\_DC\_enh2-Core; leading WG: RAN2; REL-17; WID: [RP-201040](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_88e/Docs/RP-201040.zip))

(LTE\_NR\_MUSIM-Core; leading WG: RAN2; REL-17; WID: [RP-212610](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_93e/Docs/RP-212610.zip))

(NR\_Slice-Core; leading WG: RAN2; REL-17; WID: [RP-212534](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_93e/Docs/RP-212534.zip))

(NR\_QoE-Core; leading WG: RAN3; REL-17; WID: [RP-211406](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_92e/Docs/RP-211406.zip))

(NR\_ext\_to\_71GHz-Core; leading WG: RAN1; REL-17; WID: [RP-212637](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_93e/Docs/RP-212637.zip))

(NR\_cov\_enh-Core; leading WG: RAN1; REL-17; WID: [RP-211566](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_92e/Docs/RP-211566.zip)): non-RACH-indication parts

(NR\_redcap-Core; leading WG: RAN1; REL-17; WID: [RP-211574](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_92e/Docs/RP-211574.zip))

(NR\_feMIMO-Core; leading WG: RAN1; REL-17; WID: [RP-212535](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_93e/Docs/RP-212535.zip))

(NR\_SmallData\_INACTIVE-Core, leading WG: RAN2; REL-17; WID: [RP-212594](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_93e/Docs/RP-212594.zip))

(NR\_IIOT\_URLLC\_enh-Core; leading WG: RAN2; REL-17; WID: [RP-210854](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_91e/Docs/RP-210854.zip))

(NR\_MBS-Core; leading WG: RAN2; REL-17; WID: [RP-201038](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_88e/Docs/RP-201038.zip))

(NR\_ENDC\_SON\_MDT\_enh-Core; leading WG: RAN3; REL-17; WID: [RP-201281](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_88e/Docs/RP-201281.zip))

(NR\_NTN\_solutions-Core; leading WG: RAN2; REL-17; WID: [RP-211557](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_92e/Docs/RP-211557.zip))

PRACH partitioning items

(NR TEI17)

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.

Corrections for NR\_NTN\_solutions-Core might be treated in the NTN breakout session.

### 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 Sidelink relay

(NR\_SL\_Relay-Core; leading WG: RAN2; REL-17; WID: [RP-212601](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_93e/Docs/RP-212601.zip))

## 6.3 NR positioning enhancements

(NR\_pos\_enh-Core; leading WG: RAN1; REL-17; WID: [RP-210903](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_91e/Docs/RP-210903.zip))

## 6.6 NR Sidelink enhancements

(NR\_SL\_enh-Core; leading WG: RAN1; REL-17; WID: [RP-202846](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_90e/Docs/RP-202846.zip))

# 7 Rel-18

## 7.0 Common

Rel-18 WIs not covered under an explicit AI in 7.x. Multi-WI Rel-18 items, e.g. cross-WI-issues not handled under another WI. UE capabilities.

### 7.0.1 UE Capabilities

Multi-WI handling of Rel-18 feature lists and UE capability Mega CRs.

### 7.0.2 Rel-18 corrections

*Essential corrections only. For smaller corrections please contact CR editor / Rapporteur directly. Coordinate with rapporteurs and chair if input above limit is required*

*Tdoc limitation: 5*

#### 7.0.2.1 RACH-less HO

*Corrections to generalized RACH-less HO procedure, including NTN, mIAB, and overlapping sections of the LTM cell switch procedure*

#### 7.0.2.2 NR network-controlled repeaters

(NR\_NetConRepeater; leading WG: RAN1; REL-18; WID: [RP-230175](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_99/Docs/RP-230175.zip))

#### 7.0.2.3 NR support for UAV

(NR\_UAV-Core; leading WG: RAN2; REL-18; WID: [RP-230782](https://www.3gpp.org/ftp/TSG_RAN/TSG_RAN/TSGR_99/Docs/RP-230782.zip) and LTE WID: [RP-230783](https://www.3gpp.org/ftp/TSG_RAN/TSG_RAN/TSGR_99/Docs/RP-230783.zip) )

#### 7.0.2.4 Mobile Terminated Small Data Transmission

(NR\_MT\_SDT-Core; leading WG: RAN2; REL-18; WID: [RP-222993](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_98e/Docs/RP-222993.zip))

#### 7.0.2.5 IDC enhancements for NR and MR-DC

(NR\_IDC\_enh-Core; leading WG: RAN2; REL-18; WID: [RP-221281](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_96/Docs/RP-221281.zip))

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

( NR\_mobile\_IAB -Core; leading WG: RAN3; REL-18; WID: [RP-232669](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_101/Docs/RP-232669.zip))

#### 7.0.2.7 Timing Resiliency and URLLC Enh

(NR\_TRS\_URLLC; leading WG: RAN3; REL-18; WID: [RP-230754](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_99/Docs/RP-230754.zip))

#### 7.0.2.8 Enhanced support of reduced capability NR devices

(NR\_redcap\_enh-Core; leading WG: RAN1; REL-18; WID: [RP-232671](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_101/Docs/RP-232671.zip))

#### 7.0.2.9 Further NR coverage enhancements

(NR\_cov\_enh2-Core; leading WG: RAN1; REL-18; WID: [RP-221858](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_96/Docs/RP-221858.zip))

#### 7.0.2.10 Network energy savings for NR

(Netw\_Energy\_NR-Core; leading WG: RAN1; REL-18; WID: [RP-223540](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_98e/Docs/RP-223540.zip))

#### 7.0.2.11 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](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_96/Docs/RP-221825.zip))

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

(NR\_DualTxRx\_MUSIM-Core; leading WG: RAN2; REL-18; WID: [RP-233071](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_100/Docs/RP-231461.zip))

#### 7.0.2.13 NR MIMO evolution

(NR\_MIMO\_evo\_DL\_UL-Core; leading WG: RAN1; REL-18; WID: [RP-233028](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_98e/Docs/RP-223276.zip))

#### 7.0.2.14 Enhancements of NR Multicast and Broadcast Services

(NR\_MBS\_enh-Core; leading WG: RAN2; REL-18; WID: [RP-231829](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_101/Docs/RP-231829.zip))

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

(NR\_QoE\_enh-Core; leading WG: RAN3; REL-18; WID: [RP-223488](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_98e/Docs/RP-223488.zip))

#### 7.0.2.16 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))

#### 7.0.2.17 TEI18

#### 7.0.2.18 Others

Including Multi-WI Rel-18 items, e.g. cross-WI-issues not handled under another WI

## 7.1 Expanded and improved NR positioning

(NR\_pos\_enh2-Core; leading WG: RAN1; REL-18; WID: [RP-232670](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_101/Docs/RP-232670.zip))

Time budget: 0 TU

Tdoc Limitation: 1 tdoc

Minor and editorial issues should be coordinated with the appropriate spec rapporteur and submitted by rapporteur company together with any additional corrections the rapporteur company may have. Larger issues can be discussed based on contributions/individual CRs.

### 7.1.1 Organizational

Including incoming LSs and rapporteur inputs.

### 7.1.2 Stage 2

Impact to 38.300, 37.340, and 38.305.

This agenda item may be handled at lower priority.

### 7.1.3 SLPP corrections

Impact to 38.355.

### 7.1.4 LPP corrections

Impact to 37.355.

### 7.1.5 RRC corrections

Impact to 38.331 and 38.306.

### 7.1.6 MAC corrections

Impact to 38.321.

### 7.1.7 Corrections to other specifications

Impact to any specifications not identified above.

## 7.2 Further NR mobility enhancements

(NR\_Mob\_enh2-Core; leading WG: RAN2; REL-18; WID:RP-233970)

Time budget: 0 TU)

Minor and editorial issues should be coordinated with the CR rapporteur. Note RRC CR and MAC CR rapporteurs’ summary and suggestion (based on the submitted contributions) may be provided.

Tdoc Limitation: 1 tdocs.

## 7.3 IoT NTN enhancements

(IoT\_NTN\_enh-Core; leading WG: RAN1; REL-18; WID: [RP-223519](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_98e/Docs/RP-223519.zip))

Time budget: 0 TU

Tdoc Limitation: 1 tdocs

### 7.3.1 Organizational

LSs, rapporteur inputs.

Editorials/clarifications should not be included in any tdoc but sent to the WI spec rapporteurs

### 7.3.2 Corrections

Corrections for all specifications.

## 7.4 NR NTN enhancements

(NR\_NTN\_enh-Core; leading WG: RAN1; REL-18; WID: [RP-232669](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_101/Docs/RP-232669.zip))

Time budget: 0 TU

Tdoc Limitation: 1 tdocs

### 7.4.1 Organizational

LSs, rapporteur inputs.

Editorials/clarifications should not be included in any tdoc but sent to the WI spec rapporteurs

### 7.4.2 Corrections

Corrections for all specifications.

## 7.5 Enhanced NR Sidelink Relay

(NR\_SL\_relay\_enh-Core; leading WG: RAN2; REL-18; WID: [RP-223501](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_98e/Docs/RP-223501.zip))

Time budget: 0TU

Tdoc Limitation: 1 tdoc

1 additional tdoc on top of the limit is allowed for co-sourced contribution with 3 or more companies.

Minor and editorial issues should be coordinated with the appropriate spec rapporteur and submitted by rapporteur company together with any additional corrections the rapporteur company may have. Larger issues can be discussed based on contributions/individual CRs.

### 7.5.1 Organizational

Including incoming LSs and rapporteur inputs.

### 7.5.2 Stage 2 corrections

Impact to 38.300.

### 7.5.3 Control plane corrections (including UE capabilities)

Impact to 38.331, 38.304, and 38.306.

### 7.5.4 User plane corrections (including SRAP)

Impact to 38.351, 38.321, 38.322, and 38.323.

## 7.6 NR Sidelink evolution

(NR\_SL\_enh2-Core; leading WG: RAN1; REL-18; WID: [RP-230077](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_99/Docs/RP-230077.zip))

Time budget: 0 TU

Tdoc Limitation: 1 tdocs

1 additional tdoc on top of limit can be allowed for co-sourced contribution with 3 or more companies

## 7.8 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.

Clarification CRs should be discussed with spec rapporteurs of the topic prior to submission.

Time budget: 1 TU

Tdoc Limitation: 2

### 7.8.1 RAN4 led items

### 7.8.2 RAN1 led items

### 7.8.3 Other

RAN3, SA2, SA3, CT1 led items and others, e.g. eNPN, Slicing, NTN self evaluation issues, etc.

# 8 Rel-19

## 8.0 General

This AI is reserved for Rel-19 LSs from other WGs. No contributions are expected on these LSs for this meeting, except for C1-247193. Co-sourced papers are encouraged and will be prioritized.

## 8.1 AI/ML for NR air interface

(NR\_AIML\_air-Core; leading WG: RAN1; REL-19; WID: RP-243244 and SID: RP-243245)

Time budget: 2.5 TU

Tdoc Limitation: 5 tdocs

### 8.1.1 Organizational

LS, Rapporteur input, including workplan, including running CRs for 38.300 and 38.331 etc.

### 8.1.2 Functionality based LCM

Contributions should focus on general understanding of LCM procedure (except for data collection and model transfer/delivery), what is required to enable the UE to perform different steps of the LCM procedure, what is the granularity of functionality, dependencies with RAN1 and what is needed from RAN1 to progress in RAN2

Contributions should be submitted in 8.1.2.x and aspects related to data collections should be submitted in data collection section

Two-sided model discussions are out of scope of this AI

#### 8.1.2.1 LCM for NW-sided model for Beam Management use case

LCM related to NW-sided model for beam management use case only

No contributions expected for this meeting, waiting for further RAN1 progress

#### 8.1.2.2 LCM for UE-sided model for Beam Management use case

Including functionality identification, additional conditions and further reporting of applicable functionalities, and any necessary signaling/protocol aspects. Contributions should attempt to take into consideration the reply LS from RAN1 (R1-2410898) on BM applicable functionality reporting.

#### 8.1.2.3 LCM for Positioning use case

Contributions should focus on LCM for UE-sided model, but can discuss NW-sided model and should focus on 1st priority positioning use cases. Aspects related to data collection should be covered in 8.1.3

Including outcome of [POST128][026][AIML] LCM Procedure for Positioning Case1 (Ericsson)

### 8.1.3 NW side data collection

Contributions should focus on the mechanisms and principles identified for data collection for network side model training during rel-18. Contributions should discusss type of data required to be collected for NW sided model and UE sided model (common to NW sided and different). Question to RAN1 should also be identified.

Including outcoem of [POST128][019][AI PHY] NW side data collection (Nokia)

### 8.1.4 UE side data collection

*Type of data required to be collected for UE sided model can be discussed in contributions in 8.1.3*

*Discuss any of the aspects identified in RANP WF*

*o Study RAN aspects related to data transfer over UP*

*o Discuss level of NG-RAN involvement in the control and configuration of UE side data collection.*

*o Discuss NG-RAN involvement in the data transfer of UE side data collection (if any) (including visibility discussion).*

*o Discuss aspects/solutions from RAN perspective that enable the data transfer to CN domain or OAM domain.*

*o Discuss on the scalability aspects of CP*

### 8.1.5 Model transfer/delivery

*Focus on RAN1 LS (R1-2410922) and RAN2 evaluation of feasibility of RAN1 identified solutions on two-sided model.*

 *For RAN2#129 contributions on requirements for 1-sided and 2-sided models are only expected from operators. . Non-operator companies are not expected to submit contributions (but are encouraged to collaborate with operators). NOTE: the discussion on requirements may be downprioritized.*

## 8.2 Ambient IoT

(Ambient\_IoT\_solutions, leading WG: RAN1; REL-19; WID: RP-243326)

Time budget: 2.5 TU

Tdoc Limitation: 3 tdocs

### 8.2.1 Organizational

LS, Rapporteur input, including workplan, etc.

### 8.2.2 A-IoT Paging

*Contributions should focus on paging message content and format, including subsequent paging for the same service, paging identifier details, etc.*

### 8.2.3 A-IoT Random Access

### *Contributions should focus on details of contention-based and contention-free access, including re-access for failure handling, msg content/format, discussion on use of unified solution (i.e. solution 3)*

### 8.2.4 A-IoT Data Transmission and Other general aspects

*Contributions should focus on MAC PDU/signaling format, data (re)transmission for failure handling, segmentation for D2R, AS ID, message size information/command type information pending SA2 input, etc.*

## 8.3 AI/ML for Mobility

(FS\_NR\_AIML\_Mob; leading WG: RAN2; REL-19; SID: [RP-242393](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_105/Docs/RP-242393.zip))

Time budget: 2 TUs

Tdoc Limitation: 3 tdocs

### 8.3.1 Organizational

LS, Rapporteur input, including workplan, etc. Including outcome of [POST128][021][AI Mob] Templates for simulations (Mediatek/Oppo)

### 8.3.2 RRM measurement prediction

#### 8.3.2.1 Simulation results

*Contributions should focus on simulation results and observations on the agreed on prioritized scenarios and agreed assumptions. Further input on remaining issues related to RRM measurement prediction.*

*Any simulation results on non-prioritized scenarios should be clearly captured in separate section indicating “new scenarios”*

#### 8.3.2.2 Model Generalization

*Including outcome of [Post128][018][AI Mob] generalization (Apple).*

*Contributions on generalization of UE speed and frequency can be submitted in this AI. Other aspects are “best effort” and depending on outcome of email discussions.*

### 8.3.3 Measurement event predictions

*Contributions on evaluations/simulation results. System level performance results can also be submitted in this AI for companies providing such results.*

### 8.3.4 RLF/HO failure prediction

*No contributions expected for this meeting*

*Contributions should focus on discussing RLF specific methodology and simulation assumptions (addressing the differences or additional aspects from RRM predicution asssumptions).*

*Relevant metrics and assumptions not covered by email discussion*

*No evaluations/simulation results expected for this meeting*

## 8.4 Low-power wake-up signal and receiver for NR (LP-WUS/WUR)

(NR\_LPWUS-Core; leading WG: RAN1; REL-19; WID [RP-241824](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_105/Docs/RP-241824.zip))

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.4.1 Organizational

LS, Rapporteur input, including workplan, etc.

### 8.4.2 Procedure and configuration of LP-WUS in RRC\_IDLE/INACTIVE

Procedure and configuration of LP-WUS indicating paging monitoring triggered by LP-WUS, including at least configuration, sub-grouping, entry/exit condition for LP-WUS monitoring, and separate band issues following WF in RP‑243266

### 8.4.3 RRM measurement relaxation and offloading in RRC\_IDLE/INACTIVE

RRM relaxation of UE MR for both serving and neighbor cell measurements, and UE serving cell RRM measurement offloaded from MR to LP-WUR, including the necessary conditions

### 8.4.4 Procedures for LP-WUS in RRC\_CONNECTED

Procedures to allow UE MR PDCCH monitoring triggered by LP-WUS including activation and deactivation procedure of LP-WUS monitoring.

## 8.5 Network Energy Saving Enh.

(Netw\_Energy\_NR\_enh-Core; leading WG: RAN1; REL-19; WID: [RP-242354](https://www.3gpp.org/ftp/meetings_3gpp_sync/ran/docs/RP-242354.zip))

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.5.1 Organizational

Including incoming LSs and rapporteur inputs.

### 8.5.2 On-demand SSB SCell operation

Remaining open issues on L3 measurement from RAN2#127b (including L3 measurement framework, whether always-on SSB and/or OD-SSB are measured in case 2, etc.), further details of OD-SSB MAC CE (dependent on RAN1 progress), etc.

### 8.5.3 On-demand SIB1

Handling of RRC connected UEs (w/ consideration of RAN#106 discussion and endorsement), remaining essential feature level issues, etc.

### 8.5.4 Adaptation of common signal/channel transmissions

L3 measurement aspects on SSB adaptation (w/ the consideration of L3 measurements on OD-SSB), remaining open issues on paging adaptation from RAN2#129 discussion, RAN2 spec impacts and discussion from SSB adaptation and RACH adaptation (w/ consideration of the corresponding RAN1 progress), etc.

## 8.6 Mobility Enhancement Ph4

(NR\_Mob\_Ph4-Core; leading WG: RAN2; REL-19; WID: [RP-242356](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_105/Docs/RP-242356.zip))

Time budget: 2 TU

Tdoc Limitation: 3 tdocs

### 8.6.1 Organizational

Including incoming LSs, WI rapporteur inputs, stage 2 running CR to be endorsed, etc.

### 8.6.2 Inter-CU LTM

Inter-CU LTM part of [POST128][107] and [POST128][109], remaining essential feature level issues, etc.

### 8.6.3 L1 event triggered measurement reporting

RAN2 impacts on supporting CSI-RS measurements and reporting, further details of MR MAC CE, [POST128][108], L1 event-driven MR part of [POST128][109], remaining essential feature level issues, etc.

###  8.6.4 Conditional intra-CU LTM

Beam(s) to be used for C-LTM event evaluation, beam selection in RACH-less C-LTM with CG, whether to support RACH-less C-LTM with DG (w/ analysis of additional spec impacts), whether LTM and C-LTM co-exist (w/ analysis of additional spec impacts), early TA MAC CE, UE behaviors to the new timer, C-LTM part of [POST128][107] and [POST128][109], etc.

## 8.7 XR Enhancements Ph3

(NR\_XR\_Ph3-Core; leading WG: RAN2; REL-19; WID: [RP-243318](https://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_106/Docs/RP-243318.zip))

Time budget: 2 TU

Tdoc Limitation: 5 tdocs

### 8.7.1 Organizational

LS, Rapporteur input, workplan, etc.

CR rapporteurs of 38.300, 38.321, 38.323 and 38.331 are requested to provide first drafts of the running CRs for this meeting.

### 8.7.2 Multi-modality support

**No contributions are expected for this AI for RAN2#129**

### 8.7.3 RRM measurement gaps/restrictions related enhancements

Focus on RAN2 impacts from solutions considered by RAN1/RAN4, discuss the need of semi-static solutions.

### 8.7.4 Scheduling enhancements

#### 8.7.4.1 LCP enhancements

Further details of handling of the additional priority for LCH, e.g. configuration details, impact on the existing LCP procedure (Bj, PBR etc.), impact on intra-UE prioritization.

#### 8.7.4.2 DSR enhancements

Including aspects such as MAC CE design, interworking with legacy DSR etc.

### 8.7.5 RLC enhancements

Including aspects such as:

* how to avoid unnecessary retransmissions, e.g. details of the combined approach
* how to ensure timely RLC retransmissions for XR, e.g. details of the solution covering both autonomous retransmission and polling enhancements

### 8.7.6 XR rate control

Including details of per QoS flow indication, bit rate values indication enhancements (considering the reply from SA4), indication/assistance from UE/CN to gNB, whether to support rate query MAC CE etc.

## 8.8 NTN for NR Ph3

(NR\_NTN\_Ph3-Core; leading WG: RAN2; REL-19; WID: RP-243300)

LTE\_TN\_NR\_NTN\_mob, leading WG: RAN2, Rel-19 WID: [RP-240924](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_104/Docs/RP-240924.zip))

Time budget: 2 TU

Tdoc Limitation: 3 tdocs

### 8.8.1 Organizational

LS, Rapporteur input, including workplan, etc.

For the LTE\_TN\_NR\_NTN\_mob WI, including endorsed draft CRs from the WI spec rapporteurs.

Rapporteur inputs do not count towards the tdoc limitation.

### 8.8.2 Downlink coverage enhancements

Contributions should focus on RAN2 aspects of DL coverage enhancements due to extended SIB periodicity (up to 160ms), including e.g. possible SMTC impacts (while no contributions are expected on cell level / beam level DTX/DRX mechanism).

### 8.8.3 Uplink Capacity/Throughput Enhancement

Contributions can be submitted on the possible RAN2 aspects of the agreements reached in RAN1.

### 8.8.4 Support of Broadcast service

Contributions should address the signaling of the intended service area of a broadcast service.

### 8.8.5 Support of regenerative payload

Contributions, if any, should focus on the needed updates for Stage 2 description and on whether any other existing essential features (not considered so far) would be affected - and potentially need any modifications - in a regenerative payload architecture.

### 8.8.6 LTE to NR NTN mobility

Contributions, if any, should focus on any possible missing aspects for the support of idle mode mobility between LTE and NR NTN.

## 8.9 IoT NTN Ph3

(IoT\_NTN\_Ph3-Core; leading WG: RAN2; REL-19; WID: RP-243278)

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.9.1 Organizational

LS, Rapporteur input, including workplan, etc.

Rapporteur inputs do not count towards the tdoc limitation.

### 8.9.2 Support of Store & Forward

Contributions should focus on possible impacts to the radio interface.

### 8.9.3 Uplink Capacity Enhancement

Contributions should focus on the possible enhancements to reduce the necessary uplink and downlink signaling to complete an EDT transaction (Msg3 transmission without msg1/RAR; efficient delivery of msg4 / RRCEarlyDataComplete).

### 8.9.4 Support of PWS

Contributions should focus on the introduction of support for broadcast of PWS messages for NB-IoT, re-using the LTE mechanisms.

## 8.10 SON/MDT Ph4

(NR\_ENDC\_SON\_MDT\_Ph4-Core; leading WG: RAN3; REL-19; WID: [RP-234038](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_102/Docs/RP-234038.zip))

Time budget: 0.5 TU

Tdoc Limitation: 4 tdocs

### 8.10.1 Organizational

LS, Rapporteur input, including workplan, etc.

### 8.10.2 MRO enhancements for Rel-18 mobility features

LTM has 1st priority. CHO with candidate SCGs has 2nd priority

Subsequent CPAC is paused until if/when we get a RAN3 LS on the subject

#### 8.10.2.1 LTM

### 8.10.2.2 CHO with candidate SCGs

### 8.10.2.3 Other

### 8.10.3 SON/MDT for Slicing

No contributions are expected and this AI will not be treated unless we get an LS from RAN3 on the subject

### 8.10.4 SON/MDT for NTN

### 8.10.5 Leftovers from Rel-18

RACH optimization for SDT focus on RSRP and data volume in SON reports, and existing failure causes.

MHI Enhancement for SCG Deactivation/Activation.

#### 8.10.5.1 SDT

#### 8.10.5.3 Other

## 8.11 Evolution of NR duplex operation: Sub-band full duplex (SBFD)

(NR\_duplex\_evo-Core; leading WG: RAN1; REL-19; WID: [RP‑241614](https://www.3gpp.org/ftp/meetings_3gpp_sync/ran/docs/RP-241614.zip))

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

### 8.11.1 Organizational

Incoming LS, Rapporteur input, including workplan, etc..

### 8.11.2 Random access in SBFD

RAN2 impacts to support SBFD operation to support random access in SBFD symbols by UEs in RRC \_CONNECTED mode and RRC\_IDLE/INACTIVE mode.

### 8.11.3 Other aspects

Other RAN2 impacts with SBFD if not covered by the previous agenda items.

## 8.12 NR MIMO Phase 5

(NR\_MIMO\_Ph5-Core; leading WG: RAN1; REL-19; WID: [RP-242394](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_105/Docs/RP-242394.zip))

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

### 8.12.1 Organizational

LSs and rapporteur input, including workplan, etc.

### 8.12.2 Asymmetric DL sTRP/UL mTRP

To identify RRC/MAC aspects that need to be discussed for asymmetric DL sTRP/UL mTRP

### 8.12.3Others

To identify R2 impact on other objectives

## 8.13 NR sidelink multi-hop relay

(NR\_SL\_relay\_multihop; leading WG: RAN2; REL-19; WID: [RP-242349](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_105/Docs/RP-242349.zip))

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.13.1 Organizational

LSs and rapporteur input, including workplan, etc.

### 8.13.2 Relay discovery and (re)selection

Enhancements to relay dscovery and (re)selection to support one additional hop relay (remote UE ⬄ first relay UE ⬄ last relay UE ⬄ gNB). Extensibility to a second additional hop in this WI is considered as a design criterion.

### 8.13.3 Control Plane Procedures and SRAP impact

Contributions should focus on control plane procedures and can include SRAP impact and QoS handling to support additional hops.

Including outcome of email discussion [Post128][401][Relay] Control plane baseline solution (InterDigital)

### 8.13.4 Service continuity

First priority scenarios: (A) intra-gNB multi-hop indirect to direct path switch, (B) intra-gNB multi-hpo indirect to single-hop indirect path switch. Second priority scenarios: (C) intra-gNB direct to multi-hop indirect path switch, (D) intra-gNB single-hop indirect to multi-hop indirect path switch.

## 8.14 Additional topological enhancements

(NR\_WAB\_5GFemto; leading WG: RAN3; REL-19; WID RP-243009)

Time budget: 0 TU

Tdoc Limitation: 0 tdocs

Work on this WI will only be triggered by LS from RAN3 so work on this WI is not expected to start RAN2#127bis or RAN2#128.

No contributions expected for this meeting

## 8.15 NavIC L1 SPS A-GNSS support

(LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core; leading WG: RAN2; REL-19; WID RP-243247)

Time budget: 0.5 TU

Tdoc Limitation: 1 tdoc

Including outcome of email discussion [Post128][403][POS] NavIC L1 stage 3 CR check (Reliance Jio)

## 8.16 BDS B2b in A-GNSS

LCS\_BDS\_B2b\_LTE\_NR; leading WG: RAN2; REL-19; WID RP-242459)

Time budget: 0.25 TU

Tdoc Limitation: 1 tdoc

Including outcome of email discussion [Post128][402][POS] BDS B2b stage 3 CR check (CATT)

## 8.17 IoT-NTN TDD mode

(IoT\_NTN\_TDD; leading WG: RAN1; REL-19; WID RP-243293)

Time budget: 0.5 TU

Tdoc Limitation: 1 tdoc

## 8.18 TEI19

Time budget: 1 TU

Tdoc Limitation: 1 tdoc for new proposals and 1 tdoc for old proposals.

1 additional tdoc for primary co-sourcing company on top of the limit is allowed for co-sourced contribution with 4 or more companies.

Companies are encouraged to submit co-sourced contributions, which will have priority for discussion in RAN2#129.

## 8.19 NR Others

Tdoc limit: 1

Contributions addressing LS from RAN4 R4-2420410 and any RAN4 LSs not related to any of the AIs above.

# 9 Breakout session reports

No documents shall be submitted to this AI or its sub-AIs. It is only for at-meeting-generated contents.

## 9.1 Session on V2X/SL, R19 NES and MOB

## 9.2 Session on R18 MIMOevo, R18 MUSIM, and R19 LP-WUS

## 9.3 Session on NR NTN and IoT NTN

## 9.4 Session on positioning and sidelink relay

## 9.5 Session on R18 MBS, R18 QoE and R19 XR

## 9.6 Session on maintenance and SON/MDT