3GPP TSG-RAN WG2 Meeting #124 DRAFT R2-2313565

Chicago, USA, Nov. 13th – 17th, 2023

Title: Report from breakout session on feMob, mIAB, LP-WUS

Agenda: 8.4

Source: Session Chair (Mediatek), Johan

Schedule: See Main meeting schedule on the server (pl check for updates)

Offline number range: 500-599

Revisions: [R2-2313661](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313661.zip) - R2-2313680

# Offline Discussions

feMobility

* [AT124][501][feMob] eEMR SCell setup delay (Nokia)

Scope: CR solution for “enahanced measurement”.

Intended outcome: Report, a reasonably agreeable draftCR, for CB in R2-2313662 and R2-2313663

Deadline: CB Friday

* [AT124][502][feMob] Subsequent CPAC RRC Open Issues (OPPO)

Scope: Take progress and input to this meeting into account, excluding security  
1) Identify remaining open issues / enhancements, addressing necessary functionality and stage-3 aspects (e.g. how to impl, clarity, simplicity, commonality etc). No new proposals for functionality or further enhanced performance. Take into account relevant Open issues in the RRC CR OI list, if any.

2) Converge on solutions/proposals, identify easy agreements and discussion points for CB.

3) Case by case, if it seems needed, TP can be discussed.

4) in particular, Produce a TP for the SCPAC configuration application procedure

Intended outcome: Report in R2-2313664

Deadline: CB acc to Meeting schedule

* [AT124][503][feMob] Stage-2 SCPAC (ZTE)

Scope: See R2-2312711 and related dsicussion

Intended outcome: Agreeable proposals if possible, options for decisions otherwise, evolved TP, Report in R2-2313666 Draft LS to R3 in R2-2313667

Deadline: CB acc to Meeting schedule

* [AT124][504][feMob] SCPAC Security (Nokia)

Scope: Converge on open issues

Intended outcome: Report in R2-2313665

Deadline: CB acc to Meeting schedule

* [AT124][508][feMob] LTM LS to RAN3 (HW)

Scope: Inform at least on Early RACH to R3

Intended outcome: Agreeable LS out

Deadline: CB acc to Meeting schedule

* [AT124][509][feMob] LTM L2 Centric (Huawei)

Scope: Based on R2-2313558 and other relevant input(s), converge on open issues as far as possible / reasonable, identify easy agreements, discussion points (can also identify open issues)

Intended outcome: Report with agreeable proposals

Deadline: CB acc to Meeting schedule (Thu if possible)

* [AT124][510][feMob] CHO with candidate SCGs (CATT)

Scope: Converge on signalling of execution cond (see disc for fR2-2312831), LS to RAN3

Intended outcome: Report with agreeable proposal, and agreeable LS to R3

Deadline: CB acc to Meeting schedule

mIAB

* [AT124][507][mIAB] LS to R3 and SA2 on mIAB or IAB operation (Samsung)

Scope: LS out

Intended outcome: Agreeable LS out

Deadline: CB Thu

LP-WUS

* [AT124][505][LPWUS] Update of TR 38.869 for LP-WUS WUR (vivo)

Scope: Capture agreements, address remaining editors notes, include a recommendaition.

Intended outcome: agreeable

Deadline: CB Thu

# Reference Documents

Note: Initial version of Agenda sections 7.0.1 and 7.0.3 are copied below into this document for reference, the document herein are treated in Main session.

### 7.0.1 UE Capabilites

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

[R2-2311717](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311717.zip) LS on Rel-18 RAN1 UE features list for NR after RAN1#114bis (R1-2310637; contact: NTT DOCOMO, AT&T) RAN1 LS in Rel-18 NR\_MIMO\_evo\_DL\_UL, NR\_pos\_enh2, Netw\_Energy\_NR, NR\_netcon\_repeater, NR\_NTN\_enh, NR\_Mob\_enh2, NR\_SL\_enh2, NR\_redcap\_enh, NR\_MC\_enh, NR\_XR\_enh, NR\_FR1\_lessthan\_5MHz\_BW, NR\_DSS\_enh, NR\_BWP\_wor, NR\_cov\_enh2, TEI18 To:RAN2 Cc:RAN4

[R2-2312126](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312126.zip) [DRAFT] Reply LS on Rel-18 RAN1 UE features list for NR after RAN1#114bis Lenovo LS out Rel-18 NR\_MIMO\_evo\_DL\_UL, NR\_pos\_enh2, Netw\_Energy\_NR, NR\_netcon\_repeater, NR\_NTN\_enh, NR\_Mob\_enh2, NR\_SL\_enh2, NR\_redcap\_enh, NR\_MC\_enh, NR\_XR\_enh, NR\_FR1\_lessthan\_5MHz\_BW, NR\_DSS\_enh, NR\_BWP\_wor, NR\_cov\_enh2, TEI18 To:RAN1 Cc:RAN4

[R2-2312144](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312144.zip) Running UE capability CR on 38.306 for Rel-18 R1 R4 feature lists Intel Corporation draftCR Rel-18 38.306 17.6.0 NR\_MIMO\_evo\_DL\_UL, NR\_netcon\_repeater, NR\_DSS\_enh, NR\_MC\_enh, NR\_FR1\_lessthan\_5MHz\_BW, NR\_BWP\_wor, NR\_redcap\_enh, NR\_XR\_enh, TEI18

[R2-2312145](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312145.zip) Running UE capability CR on 38.331 for Rel-18 R1 R4 feature lists Intel Corporation draftCR Rel-18 38.331 17.6.0 NR\_MIMO\_evo\_DL\_UL, NR\_netcon\_repeater, NR\_DSS\_enh, NR\_MC\_enh, NR\_FR1\_lessthan\_5MHz\_BW, NR\_BWP\_wor, NR\_redcap\_enh, NR\_XR\_enh, TEI18

[R2-2312150](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312150.zip) Rel-18 UE capability handling Intel Corporation discussion Rel-18 NR\_MIMO\_evo\_DL\_UL, NR\_netcon\_repeater, NR\_DSS\_enh, NR\_MC\_enh, NR\_FR1\_lessthan\_5MHz\_BW, NR\_BWP\_wor, NR\_redcap\_enh, NR\_XR\_enh, TEI18

=> Revised in [R2-2313581](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313581.zip)

[R2-2313581](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313581.zip) Rel-18 UE capability handling Intel Corporation discussion Rel-18 NR\_MIMO\_evo\_DL\_UL, NR\_netcon\_repeater, NR\_DSS\_enh, NR\_MC\_enh, NR\_FR1\_lessthan\_5MHz\_BW, NR\_BWP\_wor, NR\_redcap\_enh, NR\_XR\_enh, TEI18

[R2-2312972](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312972.zip) Interpretation of UE capability guidelines Ericsson discussion

### 7.0.3 Other

[R2-2311706](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311706.zip) LS on Rel-18 higher-layers parameter list (R1-2308674; contact: Ericsson) RAN1 LS in Rel-18 NR\_MC\_enh-Core, NR\_MIMO\_evo\_DL\_UL-Core, NR\_pos\_enh2-Core, Netw\_Energy\_NR, NR\_cov\_enh2, NR\_XR\_enh-Core, NR\_Mob\_enh2, NR\_BWP\_wor-Core, NR\_NTN\_enh, IoT\_NTN\_enh-Core, TEI18 To:RAN2, RAN3 Cc:RAN4

[R2-2311721](C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\RAN2\\Docs\\R2-2311721.zip" \o "C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311721.zip) LS on Rel-18 higher-layers parameter list (R1-2310694; contact: Ericsson) RAN1 LS in Rel-18 NR\_MC\_enh-Core, NR\_MIMO\_evo\_DL\_UL-Core, NR\_SL\_enh2-Core, NR\_pos\_enh2-Core, Netw\_Energy\_NR-Core, NR\_cov\_enh2-Core, NR\_XR\_enh-Core, NR\_Mob\_enh2-Core, NR\_NTN\_enh-Core, IoT\_NTN\_enh-Core To:RAN2, RAN3 Cc:RAN4

[R2-2313023](C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\RAN2\\Docs\\R2-2313023.zip" \o "C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313023.zip) Rel-18 ASN.1 review Ericsson discussion Rel-18 TEI18 Late

## 7.4 Further NR mobility enhancements

(NR\_Mob\_enh2-Core; leading WG: RAN2; REL-18; WID: [RP-223520](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_98e/Docs/RP-223520.zip))

Time budget: 2 TU

Tdoc Limitation: 6 tdocs .

Running CR rapporteurs are encouraged to actively drive CR progress (can e.g. suggest to chair how to treat).

### 7.4.1 Organizational Stage-2 and UE caps

Including LSs and any rapporteur inputs (e.g. work plan, Running CRs common for the sub-objectives). Including performance impacts, e.g. for LTM and potential elaboration on the components of the LTM latency time line, if needed. Including impacts to and expectations of other groups.

Including impacts to 38300 and 37340 and related stage-2 centric open issues.

Including outcome of [Post123bis][557][feMob] 37340 CR (ZTE)

Including RAN1, RAN2, and RAN4 features corresponding UE caps (impact to 38306 and corresponding signalling 38331) and related open issues.

Including outcome of [Post123bis][564][feMob] UE capabilites (Intel)

Including other issues, if any

Focus this meeting on closing open issues and getting the CRs in good shape.

LS in

[R2-2311742](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311742.zip) Reply LS on beam application time for LTM (R4-2317331; contact: Ericsson) RAN4 LS in Rel-18 NR\_Mob\_enh2-Core To:RAN1, RAN2 Cc:RAN3

* Noted

38300

[R2-2312720](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312720.zip) 38.300 running CR for introduction of NR further mobility enhancements MediaTek Inc., vivo draftCR Rel-18 38.300 17.6.0 B NR\_Mob\_enh2-Core

37340

[R2-2312236](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312236.zip) Stage-2 TP for SCG LTM procedure ZTE Corporation, Sanechips discussion Rel-18 NR\_Mob\_enh2-Core

* P1: RAN2 to introduce separate flow charts and procedural texts for SCG LTM procedure in TS 37.340, i.e. including both cases when SRB3 is used and when SRB3 is not used.
* P2: RAN2 to approve the TP for SCG LTM procedure in the Annex. (can be further enhanced in CR disc)

[R2-2312235](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312235.zip) 37.340 running CR for introduction of NR further mobility enhancements ZTE Corporation, Sanechips draftCR Rel-18 37.340 17.6.0 B NR\_Mob\_enh2-Core

* Endorsed (but need update to reflect agreements)

38331

[R2-2312986](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312986.zip) Open issues and resolution proposals on the RRC merging issues Ericsson discussion Rel-18 NR\_Mob\_enh2-Core

P2

- CATT think plural S need to be added. Ericsson think this violates ASN1 conventions.

P5

- CATT think this causes some issue. Ericsson think CATTs endorsed CR was based on the wrong TS version.

P6

- OPPO think this need further discussoion

* P2 P3 P4 P5 P6 discussed separately
* P1 P7 agreed

[R2-2312985](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312985.zip) Introduction of further NR mobility enhancements Ericsson, OPPO, CATT CR Rel-18 38.331 17.6.0 4458 - B NR\_Mob\_enh2-Core

* Endorsed (with the comments and status above) as starting point for this meeting.

[R2-2312987](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312987.zip) RRC open issues list Ericsson discussion Rel-18 NR\_Mob\_enh2-Core

- Session chair think we should address these to as great extent as possible this meeting.

* Can address remaining OI if any in CR email disc

UE capabilities

[R2-2312153](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312153.zip) Discussion and TP on L2/3 UE capabilities for NR further mobility enhancements Intel Corporation discussion Rel-18 NR\_Mob\_enh2-Core

=> revised in [R2-2313590](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313590.zip)

[R2-2313590](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313590.zip) Discussion and TP on L2/3 UE capabilities for NR further mobility enhancements Intel Corporation discussion Rel-18 NR\_Mob\_enh2-Core

- Intel: p7 already agreed

- Nokia: RACH less should be mandatory for LTM. Ericsson agrees. Apple disagrees.

- MTK has sympathy for Nokia, but think RAN1 Feature list indicate this as optional.

- FW: think we should have conclusion on UE based TA mgmt.

- QC: UE cap is also about testing etc, can keep this optional.

- Chair: no other comments.

* Assume support for RACH-less Is optional (follow R1 feature list)
* P7 already agreed, other parts seem agreeable (can discuss in email discussion)

[R2-2312504](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312504.zip) UE Capability for LTM MediaTek Inc. discussion Rel-18 NR\_Mob\_enh2

[R2-2313363](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313363.zip) On UE Capabilities for LTM Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312151](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312151.zip) 38.306 running draftCR for introduction of NR further mobility enhancements Intel Corporation draftCR Rel-18 38.306 17.6.0 NR\_Mob\_enh2-Core

[R2-2312152](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312152.zip) 38.331 running draftCR for introduction of NR further mobility enhancements Intel Corporation draftCR Rel-18 38.331 17.6.0 NR\_Mob\_enh2-Core

* Included in the long email discussion for further consideration, not for TSG RAN at this point in time.
* Long email discussion, UE caps (based on input to this meeting, and can include new input)

### 7.4.2 L1L2 Triggered Mobility

#### 7.4.2.1 Control Plane and RRC

(WID: Configuration and maintenance for multiple candidate cells to allow fast application of configurations for candidate cells [RAN2, RAN3]).   
General LTM discussions (incl all aspects), if needed. RRC impact and solutions, stage-3 oriented: companies are encouraged to illustrate proposals by Text Proposals. Including the RRC LTM running CR 38331 and related open issues.

Including   
1) R2 centric issues : LTM config and execution (candidate + ref, applying complete config) etc  
2) R1-centric issues: e.g. reflecting RRC parameters (CSI, TCI, TA) from RAN1, and decision on the two options on CSI report provided by RAN1.

Including the LTM RRC Running CR. Focus this meeting on closing open issues and getting the CRs in good shape.

* LTM completed from R2 perspective

Key Stream Reuse at recovery

[R2-2313310](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313310.zip) Keystream reuse issue caused by fast recovery after LTM cell switch Fujitsu, CATT discussion Rel-18 NR\_Mob\_enh2-Core

DISCUSSION

P1/P2

- NEC think this issue should be resolved think it need to be resolved both for DRB and SRB, think some data may be sent with the complete message.

- Xiaomi think this may not be a problem. Think that PDCP data recovery behaves like this and there is no issue. vivo think there is no technical issue, and this could be tolerated in this release.

- Intel think the PDCP transmissions in this case may have different contents, and thus will violate SA3 req and there is an issue.

- CATT agrees this is an issue, and should be resolved, cannot be addressed by the network. Prefers P3 alt2

- Apple think that if we assume that the source is a candidate then we have resolved this.

* Key Stream reuse at LTM recovery seems to be an issue (at least a principal issue from req point of view)
* Assume that we stick with the agreement to support Fast LTM recovery, and attempt to resolve this issue (or investigate whether it could be tolerated).

*Session Chair: Expect to discussion solutions next meeting (simplicity is important)*

General

UE release of LTM config at LTM fast Recovery and or Reestablishment (Eri and others ..)

s-Measure applicability (Eri)

Which messages may carry LTM config (Eri, CATT, LGE, . )

Basic Assumption UE based TA config (Eri, Samsung, CMCC ..)

Assumptions for EarlyUL-SyncConfig-r18 (Huawei, Eri, CATT ..)

T304 timer (Lenovo, Eri, QC, .. )

Delta legacy-based Reconfiguration at LTM swtch (Huawei)

L2 behaviout (Huwei)

Common range for candidate identifiers (samsung)

Support of Radio bearer release/add upon LTM cell switch (Fujitsu)

UE may receive mrdc-SecondaryCellGroupConfig set as release even when there is no SCG, for a subsequent LTM and it is not considered as an error. (samsung)

[R2-2312988](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312988.zip) Discussion of remaining RRC open issues for LTM Ericsson discussion Rel-18 NR\_Mob\_enh2-Core

DISCUSSION

P1

- CATT think that after LTM recovery LTM can still function. Nokia also think that recovery is not same as reestablishment and we can keep the configuration.

- Ericsson think there may be strange scenarios, e.g. the UE is LTM-switched to a cell that was just recently failed. Huawei think the CU is aware of all such situation and can take action if needed.

- Ericsson think that is we agree to not clear config at recovery then we should also keep the configuration at resume.

P2

- IDT wonder if we don’t allow relaxation at all

- HW think s-measure is not applied to L1 measurements today.

P3

- CATT think this impact RRC resume failure, esp for inter-node.

- Lenovo are not sure this is important, may be the most freq case is small data.

- MTK think that this can be made possible from signalling po view.

P4

- Apple think we should instead discuss when the UE triggers the measurement, which could be left for UE imlm.

- ZTE think TAT may be needed, and can expire during the switch

- CATT think we can simplify the wording.

- FW explains how it is intended to work ..

* UE keeps the LTM configuration as result of the LTM recovery
* s-Measure does not apply to L1 LTM related measurements (in this release)
* Assume that the RRCResume message does not need to setup LTM-related configurations (could be revisited during maintenance if justified)
* The UE performs TA measurements for candidate cell(s) after configured by RRC
* R2 assumes that the exact time the UE performs TA measurement is up to UE impl (no need to specify in R2 TS)

[R2-2312544](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312544.zip) Issues with Timer T304 handling (including TP) Lenovo discussion NR\_Mob\_enh2-Core

- HW think the annex is not completely clear but the procedure text is, so no need. Ericsson think indeed that the initial intention with the table is to not reflect all procedure details.

- On new code point: Ericsson think R4 requirements indicate 30ms as shortest requirement, so same code points as t304 should be ok. MTK concurs

* No change to current t304 assumptions (no CB in this release expected)

[R2-2313520](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313520.zip) RRC aspects for LTM Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

DISCUSSION

P3

- LGE wonder what is the impact to R3.

- CATT prefer Option 2. Ericsson agrees, think that we need to inform R3 something, but think this is already happening in R3. MTk support O2, ZTE as well .. vivo an OPPO as well.

P8

- ZTE think this is not needed

- Session Chair: seems we cannot agree (no support), maybe no-one preoperly considered.

* For each LTM candidate configuration, RRC provides a single early RACH configuration to the UE, as in the current RRC CR (inform R3, HW).
* [AT124][508][feMob] LTM LS to RAN3 (HW)

Scope: Inform at least on Early RACH to R3

Intended outcome: Agreeable LS out

Deadline: CB acc to Meeting schedule

R2-2313955

* LS out is approved (this is the final version)

[R2-2312916](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312916.zip) Discussion on RRC aspects of LTM Samsung discussion

P8, P14 only

- Ericsson think we go for b , otherwise we need to inform R1.

* Use common range for candidate identifiers across RRC/MAC CRs and in RAN1/RAN3 parameters, Specifically Update in MAC CR that UE applies candidate configuration with identifier as Target Configuration ID +1 during cell switch.
* Confirm that UE may receive mrdc-SecondaryCellGroupConfig set as release even when there is no SCG, for a subsequent LTM and it is not considered as an error.

[R2-2313311](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313311.zip) Radio bearer release/add upon LTM cell switch procedure Fujitsu discussion Rel-18 NR\_Mob\_enh2-Core

DISCUSSION

- Ericsson don’t agree to P1. Think we already agreed P2.

- Fujitsu think the issue is about adding a bearer. HW FW think there is no issue.

- CATT think that for src cell switchback we just consider the src cell as a cand.

- Session Chair: No support that there is an issue to resolve.

* Noted

[R2-2312042](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312042.zip) Discussion on RRC aspects for LTM CATT discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312420](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312420.zip) Discussion on RRC open issues LG Electronics discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312679](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312679.zip) Considerations on LTM open issues CMCC discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313167](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313167.zip) RRC open issues for LTM Xiaomi discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312214](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312214.zip) RRC-related LTM procedures Qualcomm Incorporated discussion

[R2-2312501](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312501.zip) Remaining issues for RRC Aspects of LTM Sharp discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313521](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313521.zip) LTM UE capabilities, LTM cross-WI combinations and EMR scope Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

TCI state

[R2-2312505](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312505.zip) TCI State Handling in LTM MediaTek Inc. discussion Rel-18 NR\_Mob\_enh2

RRC configuration of L2 reset

[R2-2312213](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312213.zip) RRC configuration aspects for LTM Qualcomm Incorporated discussion

[R2-2313384](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313384.zip) Remaining issues of RRC configured Layer-2 reset Xiaomi discussion Rel-18 NR\_Mob\_enh2-Core R2-2310579

UE-based TA

[R2-2312480](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312480.zip) Discussion on UE measured TA ID and No reset ID Lenovo discussion Rel-18

DISCUSSION

- Ericsson think that even if Ue based TA is used, the network can decide to provide TA anyway so not clear that there is R3 impact. ZTE agrees.

- Xiaomi think UE based TA can fail (e.g. it takes time), so even if UE is configured maybe not certain.

* Procedure assumptions: At LTM cell switch: UE uses TA from the network if it is provided (target TA or TA=0 or TA=same as src). If not provided and the UE is configured for UE based TA, then UE based TA is used. If the UE does not have/cannot derive the TA for target, the cell switch uses RACH. (FFS if more details need to be considered).
* Regardless if the UE is configured for UE based TA, the UE follows PDCCH-order, including requests to do RACH towards cand cells, for which the UE could derive the TA by itself.
* Regardless if the UE has performed RACH towards cand cell, the UE will follow configuration for UE based TA, if configured.

[R2-2312131](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312131.zip) Configuration of UE based TA determination for RACH-less LTM Futurewei discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312357](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312357.zip) RSTD based early TA acquisition Apple discussion Rel-18 NR\_Mob\_enh2-Core

NR-DC and SCG LTM

SCG LTM Completion (FFS in the absence of SRB3), MAC CE (RACH-less LTM completion?) or mandate SRB3

DISCUSSON

Options

1: Mandate the use of SRB3

2: Use C-RNTI MAC CE if not SRB3 is configured

3: Use any transmission from UE (controlled by network)

- Apple think SRB3 should be used. HW think this is not needed, and this can be done by any transmission.

- CATT agrees no need to mandate SRB3. ZTE agrees.

- qc agrees to no need to mandate SRB3.

- ZTE think 3 is ok. SS ok with O3, Nokia as well. NEC prefer O2 but think O3 is acceptable,

* For SCG LTM completion, when SRB3 is not configured, any transmission from the UE completes the procedure, and the network can ensure that such transmission takes place.

Scenario Clarifications:

- Do not support LTM for simultaneous PCell and PSCell change in Rel 18 (Nok)

* LTM for simultaneous PCell and PSCell change is not supported in Rel 18

- As baseline, the SCG LTM is supported unless any MN terminated SCG or split bearers are configured.Further discuss whether to support the intra-DU LTM without L2 reset, even if MN terminated SCG or split bearers are configured, as the special case of SCG LTM in Rel-18 (NEC)

DISCUSSION

- Ericsson think this is network impl. NEC think this is a conseq of assuming that SCG LTM is non-MN-involved.

* No support for further clarifications

Bearer Handlling for DC (vivo)

DISCUSSION

- Ericsson think we don’t n eed to optimize, HW think most of the cases doesn’t exist.

* No support for further enhancements

LTM Configuration Release: UE releases SCG LTM configs, when SCG is released (or/and at SCG failure?)

UE Stops measurement reporting immediately upon MCG failure / SCG Failure respectively (Samsung)

MN allocates measurement gaps for the L1 measurements configured for LTM, for MN and SN (samsung)

Info in SCG Failure info, LTM failure ind (Lenovo, NEC, ...)

MCG SCG ambiguity (Asus)

* Treat the above points in CR discussion

[R2-2311818](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311818.zip) Remaining issues for SCG LTM NEC discussion NR\_Mob\_enh2-Core

[R2-2312358](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312358.zip) LTM procedure completion at the UE in SCG Apple discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312481](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312481.zip) Analysis on SCG LTM Lenovo discussion Rel-18

[R2-2312491](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312491.zip) Discussion on SCG LTM OPPO discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313187](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313187.zip) Discussion on LTM candidate configuration for different CGs ASUSTeK discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313365](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313365.zip) RRC Aspects of LTM with Dual Connectivity Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2311899](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311899.zip) Discussion on RRC open issues for LTM vivo discussion Rel-18 NR\_Mob\_enh2-Core

Feature and procedure coexistence

LTM and Condiional reconfiguration (ZTE, Samsung)

LTM and CHO fast recovery race condition (e.g. Docomo)

LTM and SCPAC (e.g OPPO)

LTM and DAPS – anything needed (e.g. OPPO, Samsung)

L3 handover with LTM config (Fujitsu)

LTM and NR-U MIMO CovEnh MBS IAB UAV SL NTN (Fujitsu, CMCC, Samsung, HW, Xiaomi ..)

* Postponed (we usually handle coexist issues in maint)

[R2-2312237](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312237.zip) Remaining issues on LTM RRC ZTE Corporation, Sanechips discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312373](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312373.zip) Consideration on co-existence of LTM and CHO Samsung discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312223](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312223.zip) Discussion on co-existence of LTM and CHO fast recovery NTT DOCOMO, INC. discussion Rel-18

[R2-2312493](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312493.zip) Discussion on cross-feature issues for LTM OPPO discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313312](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313312.zip) L3 handover with LTM configuration Fujitsu discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312000](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312000.zip) Co-existence between LTM and other features Fujitsu discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312989](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312989.zip) Co-existence of LTM with other mobility features Ericsson discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312875](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312875.zip) Coexistence of LTM and L3M/CHO Interdigital, Inc. discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313048](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313048.zip) On RRC Aspects of LTM and L3 Mobility Interworking Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_Mob\_enh2-Core

Measurements R3 and R4 aspects

[R2-2312680](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312680.zip) Discussions on LTM related measurements CMCC discussion Rel-18 NR\_Mob\_enh2-Core

Fast Recovery Further Enhancements

[R2-2311819](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311819.zip) Failure Handling for LTM NEC discussion NR\_Mob\_enh2-Core

[R2-2311890](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311890.zip) Fast cell recovery aspects for LTM failures Panasonic discussion Rel-18

[R2-2312404](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312404.zip) Views on RACH-less fast recovery KDDI Corporation discussion NR\_Mob\_enh2-Core R2-2309713

[R2-2312876](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312876.zip) Fast RLF for LTM execution Interdigital, Inc. discussion Rel-18 NR\_Mob\_enh2-Core

Withdrawn

R2-2311935 Discussion on co-existence of LTM and CHO fast recovery NTT DOCOMO, INC. discussion Rel-18 Withdrawn

#### 7.4.2.2 L2 centric parts

General LTM discussions (incl all aspects) where the main issue/discussion point is L2 centric, if not better covered by previous . Including L2 and MAC impacts (Stage-3 oriented) and remaning issues for dynamic cell switch not addressed by subclause above.

Including the MAC Running CR. Focus this meeting on closing open issues and getting the CR in good shape.

MAC CR

[R2-2312410](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312410.zip) Introduction of NR further mobility enhancements in TS 38.321 Huawei, HiSilicon CR Rel-18 38.321 17.6.0 1705 - B NR\_Mob\_enh2-Core R2-2311595

- HW has addressed some minor issues in this version cmp to latest endorsed version

*Session chair: No comments, use this as baseline for further update*

General

[R2-2312411](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312411.zip) Rapporteur proposals to address open issues in MAC running CR Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

=> Revised in [R2-2313558](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313558.zip)

[R2-2313558](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313558.zip) Rapporteur proposals to address open issues in MAC running CR Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

* Go offline, incl DRX, incl TCI state
* [AT124][509][feMob] LTM L2 Centric (Huawei)

Scope: Based on R2-2313558 and other relevant input(s), converge on open issues as far as possible / reasonable, identify easy agreements, discussion points (can also identify open issues)

Intended outcome: Report with agreeable proposals

Deadline: CB acc to Meeting schedule (Thu if possible)

R2-2313906

**Easy proposals:**

DISCUSSION

10b

- Ericsson think R1 are still discussing. MTK agrees.

- Chair: We let R1 decide then, take into account after the meeting.

* In Candidate Cell TCI States Activation/Deactivation MAC CE, the TCI state IDs refer to the list outside candidate’s RRC container.
* IF R1 decide, follow R1 decision, IF R1 cannot decide, assume the following: In LTM Cell Switch Command MAC CE, the TCI state ID refers to the list outside candidate’s RRC container.
* For RACH-less LTM, RAN2 assume the source DU always informs the target DU about the beams indicated in the LTM cell switch MAC CE, which are UL/DL or joint TCI states that the source cell has indicated to the UE in the LTM cell switch MAC CE. Up to RAN3 how to capture this.
* As in the current MAC running CR, RAN2 confirms that UE prioritizes/first to select RA resource of CFRA indicated by LTM cell switch MAC CE if any. Otherwise, UE selects RA resource of CFRA indicated by RRC if any.
* RAN2 to confirm that MAC indicates to RRC the RACH-less case in SCG LTM (as in the endorsed running CR).

P8

- Ericsson think that if TCI state is mandatory then other beam ind is not needed.

- Apple think TCI state may refer to TRS rather than SSB and thus SSB should be provided for CFRA resource

- MTK think we can have both for the initial MAC CE design.

- LGE think indeed R1 has discussed beam both for RACH and for after RACH.

* RAN2 assumes for now to include both TCI state (for use for data transmission) and SSB index specifically for CFRA. If RAN1 decides that SSB index is not needed, can be removed later.
* RAN2 will design that the TCI state ID field is mandatory present.
* For UE considering CFRA indicated by LTM MAC CE; For now assume RSRP checking is not needed (i.e. to instead trigger CBRA as legacy HO with CFRA) – can revisit if justified.
* For RRC configured CFRA, UE selects from the RRC configured beams for CFRA (if above the RSRP threshold as in legacy); [No further spec impact]
* For CBRA, UE selects a beam based on RSRP and ignores indicated beam in CBRA. [No further spec impact]

DISCUSSION

- FW think O2 is more optimal, less overhead.

- FW think that serving cell need to transfer the serving cell TA instead of target TA.

- LGE think that we just transfer TA as a R1 parameter and unless R1 specifies such special values it is more clean to just have a presence bit.

* Assume that the TA value field is mandatory, using specific value “FFF” to indicate that no valid TA is provided (TA for the target)

*BWP of early TA acquisition*

**Proposal 1: To clarify BWP information to be used for early RACH to LTM candidate cell (not fully same as legacy active BWP), RAN2 to select either option:**

* **Option 1:** **In MAC, the operation of “perform the BWP operation as specified in clause 5.15” in RA procedure does NOT apply to PDCCH-order based PRACH for LTM candidate cell;**
* **Option 2: In MAC, the operation of “perform the BWP operation as specified in clause 5.15” in RA procedure also applies to PDCCH-order based PRACH for LTM candidate cell, but to also clarify in clause 5.15 that only the operation of “transmit on RACH on the BWP” is applied “during early RACH procedure”. FFS on the activation of this BWP.**

DISCUSSION

- LGE just want to clarify UE behaviour.

- ZTE think O2 brings complexity as current BWP operation is intended for serving cell.

* In MAC, the operation of “perform the BWP operation as specified in clause 5.15” in RA procedure does NOT apply to PDCCH-order based PRACH for LTM candidate cell;

*DRX/measurement gap*

**Proposal 11a:** **During on-going RACH-less LTM cell switch the UE monitors PDCCH, e.g. despite DRX configuration.**

**Proposal 11b: During activated measurement gaps, the UE monitors PDCCH when there is an on-going RACH-less LTM cell switch.**

* During on-going RACH-less LTM cell switch the UE monitors PDCCH, e.g. despite DRX configuration and/or measurement gap configuration.

**Others:**

**Proposal 9a:** **RAN2 does not support the 2-step RACH CFRA information in the LTM MAC CE.**

DISCUSSION

- Xiaomi think we then need to consider how to indicate dedicated resource. ZTE agrees, and think this brings more work;

* RAN2 does not support the 2-step RACH CFRA information in the LTM MAC CE.

**Proposal 10: As to the co-existence between LTM early RACH with NR-U, RAN2 to select either option:**

* **Option 1: Not to spend additional standard effort to support the co-existence between LTM early RACH with NR-U**
* **Option 2: UE transmits the preamble without the power ramping upon reception of PDCCH order with retransmission indication if prior preamble transmission encounters LBT failure.**

DISCUSSION

- Xiaomi think that CG timers start/stop need to modified also for NR-U.

- Apple agrees that there may be more things.

* NR-U might not work with LTM (no clear consensus what is are the issues or impact to fix – timers and counters are mentioned), no consensus to fix this right now.
* Postpone rest of coexist proposals

[R2-2312212](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312212.zip) MAC aspects of LTM Qualcomm Incorporated discussion

[R2-2311902](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311902.zip) Discussion on L2 centric open issue for LTM vivo discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2311826](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311826.zip) Cell Switching - CFRA,TA and RACH-less LTM completion Aspects Samsung Electronics Co., Ltd discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312990](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312990.zip) Remaining MAC issues Ericsson discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313188](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313188.zip) Discussion on fallback RACH for L1L2-triggered mobility ASUSTeK discussion Rel-18 NR\_Mob\_enh2-Core R2-2309881

[R2-2312782](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312782.zip) Further Discussion on L2 Centric Part of LTM ZTE Corporation, Sanechips discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313047](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313047.zip) Discussion on MAC open issues to support LTM LG Electronics Inc. discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2311937](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311937.zip) Discussion on L2 Centric Parts CATT discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312502](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312502.zip) Remaining issues for L2 centric parts of LTM Sharp discussion Rel-18 NR\_Mob\_enh2-Core

DRX and gaps

[R2-2312393](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312393.zip) DRX and measurement gap impact for PDCCH monitoring of RACH-less LTM NEC discussion Rel-18 NR\_Mob\_enh2-Core

TCI state

[R2-2312031](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312031.zip) Remaining issues on candidate cell TCI state activation Panasonic discussion

[R2-2312412](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312412.zip) TCI state in LTM cell switch MAC CE used in RACH Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312490](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312490.zip) Discussion on TCI state related issues OPPO discussion Rel-18 NR\_Mob\_enh2-Core

RACH less TA early synch

[R2-2311898](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311898.zip) Discussion on early TA acquisition vivo discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313489](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313489.zip) On Cell Switch and TA Acquisition Aspects Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313189](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313189.zip) Discussion on LTM Cell Switch Command MAC CE format ASUSTeK discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313522](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313522.zip) RACH-less LTM cell switch Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2311827](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311827.zip) Early Timing Advance Management – LBT Failure Handling Samsung Electronics Co., Ltd discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312492](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312492.zip) Discussion on early sync and RACH-less LTM OPPO discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312001](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312001.zip) RAN2 aspects of RACH-based early TA acquisition Fujitsu discussion Rel-18 NR\_Mob\_enh2-Core

UE based TA

[R2-2312877](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312877.zip) UE based TA determination configuration Interdigital, Inc. discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312629](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312629.zip) Discussion on UE based TA measurement Transsion Holdings discussion Rel-18

[R2-2312132](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312132.zip) Remaining MAC issues for UE based RACH-less LTM Futurewei discussion Rel-18 NR\_Mob\_enh2-Core

CG

[R2-2312628](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312628.zip) Handling of configured grant for LTM cell switch Transsion Holdings discussion Rel-18

[R2-2313385](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313385.zip) Remaining issues of RACH-less solution Xiaomi discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312002](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312002.zip) LTM cell switch execution and completion Fujitsu discussion Rel-18 NR\_Mob\_enh2-Core

MAC CE Security

[R2-2311900](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311900.zip) Security issues for LTM cell switch command vivo discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312421](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312421.zip) Discussion on SCG LTM and other LG Electronics discussion Rel-18 NR\_Mob\_enh2-Core

Withdrawn

[R2-2313364](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313364.zip) On Cell Switch and TA Acquisition Aspects Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_Mob\_enh2-Core Withdrawn

### 7.4.3 Subsequent CPAC

Formerly called “NR-DC with selective activation cell of groups”.

Focus this meeting on closing open issues and getting the CR in good shape.

* For S-CPAC, Consider this completed from Ran2 point of view (with the understanding that there are RRC details to be fixed)
* [AT124][502][feMob] Subsequent CPAC RRC Open Issues (OPPO)

Scope: Take progress and input to this meeting into account, excluding security  
1) Identify remaining open issues / enhancements, addressing necessary functionality and stage-3 aspects (e.g. how to impl, clarity, simplicity, commonality etc). No new proposals for functionality or further enhanced performance. Take into account relevant Open issues in the RRC CR OI list, if any.

2) Converge on solutions/proposals, identify easy agreements and discussion points for CB.

3) Case by case, if it seems needed, TP can be discussed.

4) in particular, Produce a TP for the SCPAC configuration application procedure

Intended outcome: Report in R2-2313664

Deadline: CB acc to Meeting schedule

R2-2313664

**Proposal 10: The need code of *servingSecurityCellSetId-r18* should be:**

* **option1: Need N**
* **option2: Need M**

DISCUSSION

- OPPO reports that the procedure TP didn’t receive much comments yet.

P6

- Ericsson think that the issue is that CPA configuration can be reused for CPC but doesn’t have to be reused.

- HW think that what ericsson want hasn’t been discussed and suggest not to go this way.

- Nokia also understand that we should have the same config for CPA and CPC.

- QC think that for the execution cond we already agreed, so the discussion is about the target config, think it should be the same for CPA and CPC.

- CATT agrees to use the same for both.

P10

* Proposal 1: For the handling of the used sk\_Counter:

UE removes the selected sk-Counter upon security update and UE select the first sk-counter;

* Proposal 2: Remove the following EN in the RRC CR:

*Editor’s Note: FFS on how to start conditional reconfiguration evaluation for subsequent CPAC for the following cases: after SCG is release; upon PSCell change/addition completion; upon PCell change completion.*

* Proposal 3: It is up to the NW to guarantee a valid SCPAC configuration after SCG release/PCell change/PSCell change.
* Proposal 4: Complete configuration flag for complete subsequent CPAC candidate configuration is supported. Assume the full configuration procedure is not used for SCAPC.
* Proposal 5: The subsequent execution condition is provided as an additional list for each candidate of execution condition to evaluate other candidate as captured in current CR.
* Proposal 7: The maximum number of maxSecurityCellSet-r18 is 9 (i.e. maxNrofCondCells+1).
* Proposal 8: The maximum sk-Counter number that can be configured for each cell set is 8.
* Proposal 9: Inter-node RRC message is used for reference configuration transfer (as captured in running CR).
* In this release, Assume to use the same target configuration for CPA and CPC (always)
* The legacy signalling *CondReconfigToAddModList-r16* and *CondReconfigToRemoveList-r16* can be used to update the candidate configuration for subsequent CPAC (similar to the legacy CPAC).
* P10: Need code revisited during ASN1 review
* [AT124][504][feMob] SCPAC Security (Nokia)

Scope: Converge on open issues

Intended outcome: Report in R2-2313665

Deadline: CB acc to Meeting schedule

R2-2313665

* P1: The SK-counter list parameter introduced in RRC-Reconfiguration can support the required signalling procedure with UE for the security life cycle management indicated in SA3.
* P2: From RAN2 perspective the proposed solution from SA3 for key-mismatch is sufficient.
* P3 : For the SA3 proposed NW behaviour related to Master-key update impact to SK-counters, The GNB implementation need to ensure that SK-counter-list is also replaced at UE whenever Master-Key-Update is triggered towards UE. No specification changes needed.

LS in

[R2-2313596](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313596.zip) Reply LS on Security Solution for Selective SCG (S3-235051; contact: Nokia)

- Nokia think RRC reconfig is sufficient for key mgmt.

* Noted

37.340 open issues

[R2-2312711](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312711.zip) Discussion on open issues for subsequent CPAC procedure ZTE Corporation, Sanechips discussion Rel-18 NR\_Mob\_enh2-Core

DISCUSSION

General

P1

- OPPO wonder whether we really need to differentiate cell type (prepared or not)

P2

- QC wonder how this work, does it depend on certain sequence, so the SN can be aware .. Are there cases when SN is not aware of MN situation.

- vivo agrees w QC

P3

- Think there are other alternative and think it can be up to R3.

- Vivo this should be discussed in R2.

* Offline discussion
* [AT124][503][feMob] Stage-2 SCPAC (ZTE)

Scope: See R2-2312711 and related dsicussion

Intended outcome: Agreeable proposals if possible, options for decisions otherwise, evolved TP, Report in R2-2313666 Draft LS to R3 in R2-2313667

Deadline: CB acc to Meeting schedule

R2-2313666

DISCUSSION

P1

- Samsung think P1 differs from current agreement, Think the MN can blindly forward SN generated info, ZTE clarifies that the intention is not to have the MN change the list by SN.

* P1: [11/13] It can be up to the NW implementation on whether and how to include the candidate PSCell(s) that have been prepared by other candidate SN(s) in the SN Addition Request message if the MN has received the response from other candidate SN(s), e.g. for other candidate SN(s), the MN can include only the prepared PSCell(s) in the associated recommend cell list(s). No change to the existing recommend cell list is expected.
* Proposal 4: [9/13] For intra-SN subsequent CPAC in MN format, the source SN informs the MN to generate the MN RRCReconfiguration message for intra-SN subsequent CPAC configuration. The detailed indicator is up to RAN3 decision, e.g. implicit or explicit indicator.
* Proposal 5: [10/13] For intra-SN subsequent CPAC in MN format, the source SN sends the prepared PSCell ID(s), the candidate SCG configuration(s) and associated execution condition(s) to the MN, to let the MN generate the final MN RRCReconfiguration message for intra-SN subsequent CPAC configuration. The detailed inter-node RRC signalling is up to the RRC CR discussion.
* Proposal 1a: [5/14] No need to capture a NOTE in the 37.340 specification. Just remove the following EN from the 37.340 CR.

|  |
| --- |
| *Editor’s note: FFS whether and how to include the candidate PSCell(s) that have been prepared by other candidate SN(s) into the SN Addition Request message.* |

* RAN2 confirms that both MN format and SN format can be used for intra-SN subsequent CPAC. And It’s up to the source SN to decide which format to be used.
* Proposal 3: [9/14] It’s up to RAN3 to discuss and decide the procedure for intra-SN subsequent CPAC in MN format.
* Proposal 6: It’s up to RAN3 to decide whether to introduce a separate flow chart and procedural text for intra-SN subsequent CPAC with MN involvement procedure. (related to proposal 3)

R2-2313667

* LS out to RAN3 by email.

RRC open issues

[R2-2312494](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312494.zip) Discussion on the open issues for subsequent CPAC OPPO discussion Rel-18 NR\_Mob\_enh2-Core

P8

- OPPO clarifies that the intention is to clarify that this is a complete configuration, handled similarly as at LTM cell switch.

- HW wonder if this is a new procedure

- Ericsson think a separate procedure similar to LTM would be the best ..

- LGE are ok with this proposal.

- CATT think P8 P9 need to be postponed for more thinking.

- Nokia indeed think a separate procedure is n eeded as there are differences to the case handled by LTM currently.

* The granularity to update the sk-counter configuration is per sk-counter list that is associated with a cell set ID.
* Rely on NW to guarantee the validity of servingSecurityCellSetID after normal PSCell change, i.e. NW update the sourceSecurityCellSetID if the SecurityCellSetID of target PScell is different.
* UE releases the stored sk-counter configuration and the entries within VarServingSecurityCellSetID if all SCPAC configurations are released.
* UE stops evaluating the subsequent CPC execution conditions upon MCG failure and SCG failure.
* UE maintains the subsequent CPAC configurations upon MCG failure and SCG failure and relies on explicit signalling to release.
* Follow LTM on SCPAC candidate cell configuration application.
* Assume that Common procedure is used for SCPAC execution for the candidate provided as MN format and SN format

[R2-2313523](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313523.zip) Subsequent CPAC Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

- Alternative to OPPO-P8: HW think LTM procedure is not ready, and think we should conclude now. Suggest we use the legacy reconfiguration procedure, and not use a reference configuration at all.

*- Session Chair: Id agree with HW on complexity etc, but there is not much support.*

* Noted

[R2-2313168](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313168.zip) Remaining issues for subsequent CPAC Xiaomi discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312238](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312238.zip) Discussion on RRC centric open issues for subsequent CPAC ZTE Corporation, Sanechips discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312830](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312830.zip) Discussion on subsequent CPAC Ericsson discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2311901](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311901.zip) Remaining issues for subsequent CPAC vivo discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2311938](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311938.zip) Discussion on subsequent CPAC CATT discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312202](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312202.zip) Subsequent CPAC in NR-DC Qualcomm Incorporated discussion Rel-18

[R2-2311932](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311932.zip) Discussion on remaining issues of subsequent CPAC Samsung R&D Institute UK discussion

[R2-2312170](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312170.zip) Further details of subsequent CPAC configurations NEC discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312859](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312859.zip) On remaining issues for SCPAC Nokia, Nokia Shanghai Bell discussion

[R2-2313066](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313066.zip) Stage 3 issues for Subsequent CPAC LG Electronics discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312483](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312483.zip) Left issues on subsequent CPAC Lenovo discussion Rel-18

[R2-2312777](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312777.zip) Remaining issues on subsequent CPAC InterDigital Inc. discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312513](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312513.zip) Discussion on NR-DC with subsequent CPAC. DENSO CORPORATION discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312548](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312548.zip) Discussion on SCG failure handling with subsequent CPAC ITRI discussion NR\_Mob\_enh2-Core R2-2307890

[R2-2312171](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312171.zip) Remaining issues on security handling in SCPAC NEC discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312394](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312394.zip) Remaining issue of subsequent CPAC NEC discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312398](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312398.zip) Remaining Issues for Subsequent CPAC FGI discussion

[R2-2312630](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312630.zip) Discussion on Selective Activation of Cell Groups in NR-DC Transsion Holdings discussion Rel-18

[R2-2312274](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312274.zip) discussion on subsequent CPAC Sharp discussion NR\_Mob\_enh2-Core

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

Focus this meeting on closing open issues and getting the CR in good shape.

[R2-2311939](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311939.zip) Rapporteur proposals to open issues on CHO with candidate SCGs CATT, Huawei, HiSilicon, MediaTek, OPPO, ZTE Corporation, Sanechips, Fujitsu, vivo, Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_Mob\_enh2-Core

DISCUSSION

P1

- Samsung wonder why we cannot have more, as this would be a UE capability.

P2

- QC think it is better to put this in the RRC internode msg. Samsung agrees and think this will simplify maintenance. Ericsson agrees. Intel agrees.

- CATT think in any case the node will need to translate, there are not many params, and R3 already put them in the R3 message .. QC think there is an FFS in R3 as well.

- HW think we may need to check, and if there are issues we change back.

* The maximum number of conditional reconfigurations maxNrofCondCells is 8 in Rel-18. i.e., assume that additional UE capability for higher number is not supported in this release.
* RRC inter-node message is used to transfer the execution condition parameters of candidate PSCells from candidate MN to source MN
* Send LS to RAN3, offline (CATT)

[R2-2312831](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312831.zip) CHO with associated CPC or CPA Ericsson discussion Rel-18 NR\_Mob\_enh2-Core

DISCUSSION

- CATT think meas object is not needed.

- HW think we should be clear which parameter is necessary. Otherwise interop issues.

* Discuss offline, Send execution conditions, including meas object IE (FFS) and report config IE (parent IE) in HO command (inter-node), or cherry pick the parameters needed for this case.
* [AT124][510][feMob] CHO with candidate SCGs (CATT)

Scope: Converge on signalling of execution cond (see disc for fR2-2312831), LS to RAN3

Intended outcome: Report with agreeable proposal, and agreeable LS to R3

Deadline: CB acc to Meeting schedule

R2-2313916

* The target MN provides an reportConfigNR instance to the source MN with only the condEventA4 related parameters (a4-Threshold, hysteresis, timeToTrigger and rsType),add clarification in the filed description.
* meas object IE is not sent from T-MN to S-MN.

R2-2313917

* LS out is approved in R2-2313670

[R2-2311988](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311988.zip) Draft LS on RAN2 progress on CHO with candidate SCGs CATT LS out Rel-18 NR\_Mob\_enh2-Core To:RAN3

[R2-2313169](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313169.zip) Remaining issues for CHO with candidate SCG(s) Xiaomi discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312201](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312201.zip) CHO with multiple candidate SCGs Qualcomm Incorporated discussion Rel-18

[R2-2312239](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312239.zip) Remaining issues on CHO with candidate SCG(s) ZTE Corporation, Sanechips discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312736](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312736.zip) Considerations on CHO with CPA/CPC Samsung discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312413](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312413.zip) Discussion on CHO with candidate SCG(s) Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312482](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312482.zip) Discussion on CHO with candidate SCG Lenovo discussion Rel-18

[R2-2313049](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313049.zip) On how to address open issues for CHO with CPAC in Rel-18 Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312681](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312681.zip) Discussion on CHO with candidate SCGs CMCC discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2311986](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311986.zip) Discussions on CHO with candidate SCGs KDDI Corporation discussion

[R2-2313067](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313067.zip) CHO with candidate SCG LG Electronics discussion Rel-18 NR\_Mob\_enh2-Core R2-2311097

[R2-2312931](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312931.zip) Remaining issues on CHO with candidate SCG InterDigital Inc. discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312399](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312399.zip) Remaining Issues for CHO including target MCG and candidate SCGs FGI discussion

* This objective finished from R2 perspective

### 7.4.5 Others

Including contributions on improvement to SCell/SCG setup delay

Including outcome of [Post123bis][551][feMob] eEMR SCell setup delay (Nokia)

* [AT124][501][feMob] eEMR SCell setup delay (Nokia)

Scope: CR solution for “enahanced measurement”.

Intended outcome: Report, a reasonably agreeable draftCR, for CB in R2-2313662 and R2-2313663

Deadline: CB Friday

R2-2313883

R4-2321347

- LS saying that R16 EMR and R18 feature are independent, but R16 signalling can be reused

* LS is noted

[R2-2313662](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313662.zip)

**Summary 1**: Although there seems to be some desire to simplify this by only configuring in SIB11 it seems there is also strong desire to align to existing EMR. Rapporteur would like to point that this way we can also ensure that there is no timeperiods when Ue has no timer (if configured).

**Proposal 1**: Similarly as for R16 EMR configure the new parameter in the SIB11 and RRCRelease and thus UE stores the parameter and updates whenever SIB11 is received.

**Summary 2**: CATT update seems good. Regarding UE only sending results of valid measurements – It might be good idea to capture that ast least in a NOTE as it might be that Ran4 changes ensures only valid measurements are provided.

**Proposal 2**: Take into account CATT update and mention that UE only reports valid measurements

**Summary 3**: No comments but we need to get answers following questions in order to finalize the CR:

1. If timer X is not configured does UE fallback to R16 EMR? If so then at least then we need R18 container with timer value

- Chair: it seems that X is mandatory for R18 behaviour, in discussions early in the week the feature was described as R16 EMR + validation.

- Nokia think this is not the case, think that R18 has two parts a) validation with X and b) continuing the measuremements longer.

- HW think X is mandatory for R18 behaviour. Apple agrees.

- Chair: It seems RAN2 cannot converge on the main character on the feature also for the “enhanced measurements”, Ericsson still think we can have a CR discussion. Can anyway attempt progess

* If timer X is not configured the validation is not applied

1. Does UE continue measurements after T331 expiry? if so then we would need something on that as currently if T331 expires Ue removes the configuration.

- Nokia think that RAN4 has decided to not apply T331, i.e. UE would do measurements only based on dedicated config and not stop doing these.

- MTK think RAN4 never discuss T331, we should apply this as for R16 EMR. QC agrees with MTK. Apple agrees.

- Chair: also for this aspect, difference of opinions in RAN2

1. Then we would need to know if Network needs to control R18 EMR so that R16 NW does not receive R18 EMR Ue reports?
2. Then what LG brought up it seems RAN4 is also considering that R18 EMR is independent of R16 EMR – so we would need to be able to configure R18 EMR without R16 EMR as R18 EMR seems to have more measurements than R16 EMR.
3. Something else??

.

**Proposal 3**: Seek for answer for above questions in order to progress the CR

* Conclusion: RAN2 cannot conclude the eEMR “enhanced measurements” either at current meeting, too many open points, (and late info from RAN4)

- Nokia proposes an email discussion to formulate questions to RAN4 on “enhanced measurements”, and the action on the LS would be conditional to plenary decision to extend.

- Ericsson agree to have email discussion.

- LGE think we should not have email discussion now but are ok to start one if TSG RAN agrees.

* Long email discussion starting after plenary conditional on extension, LS out to RAN4 on eEMR “enhanced measurements”

R2-2313663

LS in

[R2-2311749](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311749.zip) LS on improvement on FR2 SCell/SCG setup delay (R4-2317428; contact: Nokia) RAN4 LS in Rel-18 NR\_Mob\_enh2 To:RAN2y

- To be taken into account for the “enhanced measurements”.

* Noted

E-Mail discussion

[R2-2313494](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313494.zip) Email Discussion report on [Post123bis][551][feMob] eEMR SCell setup delay (Nokia) Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_Mob\_enh2-Core

* noted

“Enhanced measurements”.

- Nokia assumes these are the same as R16 EMR with added verification, i.e. we see these are enhancement on top of R16.

- LG think measurement reporting is one feature, and additional measurement is another feature.

- MTK Think that the two features are R16 EMR with added verification and then the “additional measurements”

- Ericsson think the terminology is confusing that the “additional measurements” should be called “measurements at setup”. Nokia think the measurement can continue beyond setup. QC agrees.

- vivo think the X value, this kind of enhancement is only for the Enhanced R16 EMR.

- Session Chair proposes to agree: “Enhanced measurements” = R16 EMR + verification acc to R4 LS. LGE has a different opinion.

* R2 understanding, from functionality point of view: “Enhanced measurements” = R16 EMR + verification acc to R4 LS.
* We attempt to make a CR with solution (offline).

Additional measurements

P1-P13

- Ericsson think the timer is used for EMR to decide if the UE uses dedicated or common configuration.

- Nokia think the measurements doesn’t start until connection setup so not useful with a timer.

- HW think R4 hasn’t agreed on the additional measurements. Think this will take some time to converge.

P5

- HW think the word should be “simultaneously”. CATT agrees

- ZTE think this was not discussed in R4 and R4 are still discussing multipe solutions.

P7

- CATT think It is not reasonable to assume reporting in the XXcomplete msg.

P11

- QC wonder if the threshold is for reporting or for performing measurements, if for performing measurements not clear how this works.

*Session Chair: given the comments, conclude that even if R4 decides to include this at current meeting, then R2 anyway need at least 1Q to work on the detailed solution.*

* R2 will not attempt to make CR now for the “additional measurements”.
* CB check R4 status later this week, to determine way forward.

General

[R2-2313495](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313495.zip) eEMR SCell setup delay Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313407](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313407.zip) Discussion on eEMR SCell setup delay vivo discussion NR\_Mob\_enh2-Core

[R2-2313307](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313307.zip) Early measurement report enhancement LG Electronics discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312832](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312832.zip) Discussion on early measurements enhancements Ericsson, CMCC discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313410](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313410.zip) Discussion on SCell/SCG setup delay MediaTek Inc. discussion NR\_Mob\_enh2-Core R2-2311113

[R2-2312495](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312495.zip) Discussion on improvement to SCell/SCG setup delay OPPO discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2311940](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311940.zip) Discussion on improvement on Scell SCG setup delay CATT discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2313170](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313170.zip) Discussion on improvement to SCell/SCG setup delay Xiaomi discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312682](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312682.zip) Discussion on fast SCell/SCG setup CMCC, Ericsson, ZTE, Huawei, vivo discussion Rel-18 NR\_Mob\_enh2-Core

[R2-2312874](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312874.zip) Improvement on Scell/SCG setup/resume delay using LTM Interdigital, Inc. discussion Rel-18 NR\_Mob\_enh2-Core

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

( NR\_mobile\_IAB -Core; leading WG: RAN3; REL-18; WID: RP-232642)

Time budget: 0.5 TU

Tdoc Limitation: 4 tdocs

* Wi complete from R2 perspective

### 7.12.1 Organizational Stage-2 and high-level open issues

Ls in Rapporteur input, CRs etc. Connected mode mobility enhancements: On new (not-yet-agreed) proposals, there has previously been some interest for time-based CHO (which can be discussed one more round). Other new (not-yet-agreed) proposals, are not expected to be treated.

Note that on PCI collision, RAN2 agreed that further work on this matter would be based on LS by RAN3. Note that on RACH interference and collisions RAN2 agreed that this better be handled between RAN3 and RAN1.

Includes TS impacts 38300 and Stage-2 Centric Open issues (can also cover secondary impacts to other TSes)

LS in

[R2-2311732](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311732.zip) LS on awareness of gNB ID of RRC terminating donor for mobile IAB (R3-235919; contact: Huawei) RAN3 LS in Rel-18 NR\_mobile\_IAB-Core To:RAN2

- HW think the impact is that an otherwise optional capability now becomes mandatory for mIAB node (cond mandatory).

* Noted
* R2 intend to support R3 request, by making this cond mandatory for a mIAB capable device.

[R2-2312369](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312369.zip) Confirmation on the gNB-ID-Length broadcasting from RAN3 incoming LS Huawei, HiSilicon discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2313393](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313393.zip) Discussion on supporting the gNB-ID-Length for mIAB-MT Xiaomi discussion Rel-18 NR\_mobile\_IAB-Core

Work Plan

[R2-2312165](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312165.zip) Updated workplan for Rel-18 mobile IAB Qualcomm Inc. (Rapporteur) Work Plan Rel-18 NR\_mobile\_IAB

CRs

38300

[R2-2312166](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312166.zip) CR to TS 38.300 on introduction of mobile IAB Qualcomm Inc. CR Rel-18 38.300 17.6.0 0727 - B NR\_mobile\_IAB

=> Revised in [R2-2313551](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313551.zip)

[R2-2313551](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313551.zip) CR to TS 38.300 on introduction of mobile IAB Qualcomm Inc. CR Rel-18 38.300 17.6.0 0727 1 B NR\_mobile\_IAB

38331

[R2-2312979](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312979.zip) Introduction of mobile IAB Ericsson CR Rel-18 38.331 17.6.0 4457 - B NR\_mobile\_IAB-Core

[R2-2312980](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312980.zip) Rapporteur resolution proposals for mIAB RRC open issues Ericsson discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312981](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312981.zip) RRC open issues list for mobile IAB Ericsson discussion Rel-18 NR\_mobile\_IAB-Core

38304

[R2-2313037](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313037.zip) mobile IAB open issues of TS 38.304 Intel Corporation discussion Rel-18 NR\_mobile\_IAB

38321 – Submitted in AI 7.7.1, shown here for information.

[R2-2313014](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313014.zip) Introduction of RACH-less handover to TS 38.321 InterDigital, Samsung CR Rel-18 38.321 17.6.0 1716 - B NR\_NTN\_enh-Core, NR\_mobile\_IAB-Core R2-2309345 Late

mIAB or IAB operation

[R2-2313661](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313661.zip) Summary on concurrent support of mobile IAB and Rel-16/17 IAB Qualcomm Inc (WI Rapporteur)

DISCUSSION

P1

- Samsung think mIAB-node can always work as a Rel-16/17 node.

* A parent node indicates support of mobile IAB but not Rel-16/17 IAB by broadcasting the “mobile IABsupported” indicator but not the “IABsupported” indicator in SIB1.
* A parent node indicates support of both, mobile IAB and Rel-16/17 IAB, by broadcasting “mobile IABsupported” and “IABsupported” in SIB1.
* From AS / R2 point of view, an IAB-node indicates capabilities to the network and the use of these are configured by the network.
* R2 assumes that the device can know whether it is intended to operate as R18 mIAB or R16/17-IAB node, (how the device knows is outside R2 scope, e.g. subscription, device internal param etc), the MSG5 indication is an indication of this intended mode of operation. This agreement is not intended to mandate that a mIAB node must support R16/17 operation (FFS pending cap discussion)
* R2 assumes that the IAB-node only indicates either mobile IAB or Rel-16/17 IAB for MSG5, not both.
* We send LS to R3 and SA2 on this, offline (Samsung)
* [AT124][507][mIAB] LS to R3 and SA2 on mIAB or IAB operation (Samsung)

Scope: LS out

Intended outcome: Agreeable LS out

Deadline: CB Thu

[R2-2313892](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313892.zip)

* LS out is approved, this is the final version

[R2-2312368](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312368.zip) Overview on mobile IAB-node and legacy IAB-node: (m)IAB-support indication, Msg5 and UE capability Huawei, HiSilicon discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312810](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312810.zip) Mobile IAB node vs IAB node: remaining issues Samsung R&D Institute UK discussion

[R2-2312812](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312812.zip) Draft LS to SA2 on MBSR and IAB Samsung R&D Institute UK LS out To:SA2 Cc:RAN3

[R2-2313256](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313256.zip) On general issues about mobile IAB-node CATT discussion Rel-18 NR\_mobile\_IAB

[R2-2312855](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312855.zip) Remaining issues on IAB-MT access procedure Kyocera discussion Rel-18 R2-2311067

Dual Connectivity

[R2-2312167](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312167.zip) Remaining Stage-2 issues for mIAB Qualcomm Inc. discussion Rel-18 NR\_mobile\_IAB

* mIAB features are not intended to work with DC, i.e. not supported together.

CHO with CondT1

[R2-2313284](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313284.zip) Time-based CHO enhancement for Mobile IAB AT&T discussion

[R2-2312422](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312422.zip) Discussion on CHO for mobile IAB ZTE, Sanechips discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312321](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312321.zip) Remaining issues on CHO in mobile IAB Apple discussion Rel-18 NR\_mobile\_IAB-Core

Measurement Config further enhancement

[R2-2313198](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313198.zip) Remaining connected mode issues for mobile IAB Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_mobile\_IAB-Core

OnBoard Status indication further enhancement

[R2-2312467](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312467.zip) Remaining issues for mobility enhancements of mobile IAB-node Lenovo discussion Rel-18

[R2-2312983](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312983.zip) Support of UE on-board indication to the network Ericsson discussion Rel-18 NR\_mobile\_IAB-Core

### 7.12.2 Stage-3

Note that reuse of NR NTN RACH-less handover is assumed. Modifications of or difference in procedure specifically for mIAB to be determined/elaborated, with mIAB-specifics only when/if there is a need.

For multi-TS input, it is allowed to input also here.

#### 7.12.2.1 BAP

TS impacts 38340 and BAP Centric Open issues (can also cover secondary impacts to other TSes if applicable)

[R2-2312365](C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\RAN2\\Docs\\R2-2312365.zip" \o "C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312365.zip) Rapporteur proposal for BAP open issue in mobile IAB Huawei, HiSilicon, LG Electronics Inc, Nokia, Nokia Shanghai Bell, Intel Corporation, Lenovo, ZTE Corporation, Sanechips, Fujitsu, Ericsson, NEC, Kyocera, vivo discussion Rel-18 NR\_mobile\_IAB-Core

* Noted

[R2-2312364](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312364.zip) Introduction of mobile IAB in TS 38.340 Huawei, HiSilicon CR Rel-18 38.340 17.5.0 0033 - B NR\_mobile\_IAB-Core

* endorsed

#### 7.12.2.2 RRC

Except UE caps

TS impacts 38331 and RRC Centric Open issues (can also cover secondary impacts to other TSes if applicable)

RACH less RRC

[R2-2312512](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312512.zip) Remaining issues of mobility enhancements for mobile IAB NEC Corporation discussion Rel-18 NR\_mobile\_IAB-Core

#### 7.12.2.3 MAC

TS impacts 38321 and MAC Centric Open issues (can also cover secondary impacts to other TSes if applicable). NOTE that MAC impact is assumed only for RACH-less handover. Including outcome of [Post123bis][559][mIAB] MAC CR (Samsung)

[R2-2312809](C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\RAN2\\Docs\\R2-2312809.zip" \o "C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312809.zip) Report from [Post123bis][559][mIAB] MAC CR (Samsung) Samsung R&D Institute UK report

P4

- HW think that mIAB UE shall always monitor PDCCH

P3

- LGE think that from R1 for IAB we on support single beam indication for DG. IDT clarifies that R1 has already invalidated this discussion point, as multiple beams will not be indicated. No need. Samsung think that a threshold for DG may b e needed for NTN for validation due to very low SNR

* Editor’s Note referring to Unchanged PCI (labelled Change #1 in the referenced version of the running NTN MAC CR in the Appendix below) is not applicable to mIAB, and can further be left to NTN to resolve.
* Changes corresponding to timeAlignmentTimer and HO confirmation (labelled Changes #2, #3 and #4 in the referenced version of the running NTN MAC CR in the Appendix below) are agreeable to mIAB as-is.
* Restriction that NTA = 0 does not apply to mIAB shall be captured in RRC spec only (i.e. not in MAC).
* For submission to the Plenary, we will have both mIAB and NTN WI codes for the joint MAC CR for RACH less.
* If a threshold for DG, e.g. for validation, is agreed (for NTN) the usage of the threshold is configurable and whether to support it is a UE cap. (it is assumed that for mIAB this is not needed).

[R2-2312367](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312367.zip) Differences between the RACH-less solution for mobile IAB and NTN Huawei, HiSilicon discussion Rel-18 NR\_mobile\_IAB-Core

* 1: CG RACH less and DG RACH less are separate UE caps
* 2: CG RACH less is not assumed to be important for IAB and need not to be optimized for the IAB scenario (but also no strict need to prohibit).
* Remove “NTN” from the threshold name as it is assumed to be general

How to indicate the beam (for the DG case):

- Ericsson think that mIAB is applicable for both FR1 and FR2 and TCI state is better.

- Samsung think we can stick to the agreement of TCi state for mIAB, and if NTN requires a different indication then the RACH less mechanism would need to support both.

- LGE think that it was discussed that TCi state need to be activated before used.

- Nokia think R3 has not agreed signalling of beam, so there is a disconnect.

- Session chair: leave as it is for now, assume TCI-state, address later if issues

R2-2313950

Discussion

P2

- HW think there is no TS impact.

* Confirmed: If rach-lessHO is configured for mIAB-MT, in cases where a pending SR cannot be sent, Random Access shall not be initiated.

With the understanding that CG is not optimized for mIAB case: Confirm also the following for the joint CR:

* When CG is configured for the initial uplink transmission for an mIAB-MT configured with rach-lessHO, the initial uplink transmission shall be performed in the first available CG occasion for RACH-less handover.
* The CG-LTM-retransmission timer for the initial UL transmission using CG is introduced for mIAB. Range of values can be discussed during the CR check phase.

*Session Chair: Expect further alignment (e.g. with LTM RACH less) in the next Q, and e.g. parameter renaming*

[R2-2313306](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313306.zip) RACH-less HO and Time-based CHO LG Electronics discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312468](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312468.zip) Discussion on RACH-less handover for mobile IAB Lenovo discussion Rel-18

[R2-2312168](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312168.zip) Remaining issues for RACH-less handover for mobile IAB Qualcomm Inc. discussion Rel-18 NR\_mobile\_IAB

[R2-2312322](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312322.zip) Remaining issues on RACH-less HO in mobile IAB Apple discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312424](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312424.zip) Discussion on remaining issues of RACH-less HO ZTE, Sanechips discussion Rel-18 NR\_mobile\_IAB-Core

#### 7.12.2.4 Idle Inactive mode

TS impacts to 38304 and Idle/Inactive mode centric open issues (can also cover secondary impacts to other TSes if applicable).

mIAB or IAB operation

[R2-2312148](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312148.zip) Mobile IAB general aspects and cell barring Intel Corporation discussion Rel-18 NR\_mobile\_IAB

P4

- QC think it would be barred based on either and this is not needed.

- Samsung think this proposal isn’t needed at this point.

- Nokia and QC think is can still be mobile as a UE and we don’t need the barring statement.

- Huawei think we need to consider this from MT point of view. If a UE is a IAB-MT then it need to consider this.

- Chair: not clear what is needed, if anything. Con continue in maintenance phase based on company contribution.

* Noted

SIB4 info (and SIB1)

[R2-2313036](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313036.zip) UE cell (re)selection and TP to TS38.304 Intel Corporation, Huawei, HiSilicon, Ericsson, AT&T discussion Rel-18 NR\_mobile\_IAB

[R2-2313255](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313255.zip) Cell reselection and assistance information on mobile IAB cells CATT, Nokia, Nokia Shanghai Bell, Apple, Canon other Rel-18 NR\_mobile\_IAB

* Both noted

**For mIAB frequencies in SIB4:**

* If PCI-list, PCI-range is provided, for a frequency, then the UE is expected to consider only cells withing this list/range for this frequency for cell reselection evaluation for mIAB.
* If PCI-list, PCI-range is not provided, for a frequency, then the UE is expected to consider all cells for this frequency for cell reselection evaluation for mIAB.
* Assume no change to SIB1 reading at cell reselection, i.e. a UE implementation where the UE reads SIB1 only from the highest ranked cell right before cell reselection is a valid impl.

R2-2313956

- LG and ZTE wonder about the last part.

- ZTE think assistance info is optional.

- Intel prefers to also keep the last one.

* The following TP is agreed: “A UE on a vehicle with a mobile IAB-cell may consider the frequency for which a mobile IAB cell is the best cell to be the highest priority. The UE identifies a mobile IAB cell by the mIAB-cell type indicator [ref 38.331] in SIB1. The UE may narrow its search scope for mobile IAB cell(s) by assistance information (frequency and PCI list) if broadcasted in SIB4. A non-mIAB cell may be excluded from mobile IAB frequency prioritization for up to 300 seconds.”

[R2-2312191](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312191.zip) UE cell (re)selection in mobile IAB Samsung R&D Institute UK discussion

[R2-2312169](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312169.zip) Remaining issues for inter-frequency cell reselection of mIAB Qualcomm Inc. discussion Rel-18 NR\_mobile\_IAB

[R2-2312366](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312366.zip) Views on the usage of SIB4 (frequency/cell list) assistance information for cell reselection Huawei, HiSilicon discussion Rel-18 NR\_mobile\_IAB-Cor

[R2-2312469](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312469.zip) Remaining issues for mobility enhancement of idle and inactive UE Lenovo discussion Rel-18

[R2-2312845](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312845.zip) Further details on mIAB PCI list Sony discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312854](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312854.zip) Remaining issues on IDLE/INACTIVE mode UE mobility for mobile IAB Kyocera discussion Rel-18

[R2-2313268](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313268.zip) Remaining issues for mobile IAB PCI list SHARP Corporation discussion Rel-18

[R2-2313392](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313392.zip) Clarification on the IDLE or INACTIVE mobility with mIAB Xiaomi discussion Rel-18 NR\_mobile\_IAB-Core

CAG related potential impact

[R2-2313305](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313305.zip) Resolving open issues for cell reselection LG Electronics discussion Rel-18 NR\_mobile\_IAB-Core

* The following note is agreed NOTE 0y: mIAB Frequency prioritization is applicable for a mobile IAB cell irrespective of whether the cell is a CAG cell or not. (can polish the wording)

[R2-2313199](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313199.zip) Cell reselection issues for UEs in mobile IAB scenarios Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312323](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312323.zip) Remaining issues on Cell reselection in mobile IAB Apple discussion Rel-18 NR\_mobile\_IAB-Core

IRAT

[R2-2313013](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313013.zip) On support of inter-RAT mIAB cell reselection Samsung, AT&T discussion Rel-18 NR\_mobile\_IAB-Core

- LGE think the risk is high, impact may be more than indicated.

- Ericsson think it is quite late.

- QC point out this is not in the WID

- Samsung think EUTRA will be in deployments for long time.

- Session Chair: Recommend endorsement from TSG RAN.

* noted

Reduce RNAU

[R2-2312982](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312982.zip) Indication of DU-migration to UEs in IDLE and INACTIVE Ericsson discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312423](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312423.zip) Discussion on mobility enhancement for UE in idle or inactive mode ZTE, Sanechips discussion Rel-18 NR\_mobile\_IAB-Core

#### 7.12.2.5 UE capabilites

TS impacts to 38306, related impacts on 38331 and UE-caps-centric open issues.

UE Caps

[R2-2313196](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313196.zip) Introduction of mobile IAB capabilities to TS 38.306 Nokia, Nokia Shanghai Bell CR Rel-18 38.306 17.6.0 1001 - B NR\_mobile\_IAB-Core

[R2-2313197](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313197.zip) Introduction of mobile IAB capabilities to TS 38.331 Nokia, Nokia Shanghai Bell CR Rel-18 38.331 17.6.0 4476 - B NR\_mobile\_IAB-Core

- Still Editor notes and remaining aspects still from RAN4

- intel think the CRs need to be updated for the reporting of gNB ID, think this can be a non-signalled based cap, and Idle mode behaviour. Would prefer to have this for plenary.

* Short email disc, update with this meetings agreements, for TSG RAN, for endorsement for merge with mega CRs.

General

[R2-2313200](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313200.zip) Open issues on mobile IAB capabilities Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_mobile\_IAB-Core

DISCUSSION

P3

- HW think we have ne new IABMT Cap, think we agreed already that the Idle mode parts would be a UE cap without signalling.

- Xiaomi wonder about the gNB-ID reading?

P4

- Samsung think that for P4 we may consider differently.

- Chair wonder if RACH-less is a common feature or not.

- Intel think we have two different features at least ..

- QC think we cannot decide this right now.

- ZTE think we can have separate CG and DG indications but for the general feature same indication.

- HW think NTN RACH-less has dependency to other NTN Cap.

* Noted

[R2-2312149](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312149.zip) Discussion on mobile IAB-MT UE capability Intel Corporation discussion Rel-18 NR\_mobile\_IAB

[R2-2312324](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312324.zip) Remaining issues on UE capability in mobile IAB Apple discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312425](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312425.zip) Discussion on UE capability ZTE, Sanechips discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2312984](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312984.zip) Need of UE capability for mIAB UEs Ericsson discussion Rel-18 NR\_mobile\_IAB-Core

[R2-2313257](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313257.zip) On capabilities of mobile IAB-node CATT discussion Rel-18 NR\_mobile\_IAB

[R2-2313285](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313285.zip) Mobile IAB UE Capabilities AT&T discussion

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

(FS\_NR\_LPWUS; leading WG: RAN1; REL-18; WID: [RP-232672](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_101/Docs/RP-232672.zip))

Time budget: 0.5 TU

Tdoc Limitation: 2 tdoc

General

- Session Chair suggests to base meeting discussion mainly on Rapporteur tdocs, and encourage delegates to indicate their necessary points by commenting. Suggest further to consider all tdocs under 7.22 as Noted (Treated).

* SI is complete from R2 perspective
* RAN2 think during the SI, no blockers have been found for the continued work, the main / most obvious potential technical solution / consequences / alternatives are described in the TR, but as necessary L1 assumptions has not yet need established, and the Time allocation has been limited, the RAN2 study had little possibility to make detailed solution choices or exhaustively include all aspects. RAN2 understands that such remaining aspects are on such level that they can be handled during normal execution of a WI.

### 7.22.1 Organizational

Incoming LSs, Rapporteur input etc. Including outcome of [Post123bis][563][LP-WUS] R2 Text Proposal (vivo)

[R2-2311914](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311914.zip) Update of TR 38.869 for LP-WUS WUR vivo (Rapporteur) discussion Rel-18 FS\_NR\_LPWUS

- vivo point out that this only captures agreements from prev meeting.

* Endorsed (but need update for progress of current meeting)
* [AT124][505][LPWUS] Update of TR 38.869 for LP-WUS WUR (vivo)

Scope: Capture agreements, address remaining editors notes, include a recommendaition.

Intended outcome: agreeable

Deadline: CB Thu

*Session Chair: for CB At least agree on potential controversial aspect. Can if needed continue in a post email discussion*

R2-2313939

|  |
| --- |
| **For RRC\_IDLE/INACTIVE mode:**   * **RAN2 has studied the procedure where network configures LR for LP-WUS monitoring and concluded that LP-WUS to control paging/PEI monitoring with no UE reporting of WUS coverage status or change is feasible. Details are to be decided in WI phase.**   + **RAN2 has studied and concluded to support subgrouping for LP-WUS, detailed design depends on the payload of LP-WUS.**   + **RAN2 has studied the entry and exit condition of using LP-WUS, and concluded the condition(s) could be at least based on the measurement on at least serving cell quality using LR and/or MR.**   + **RAN2 has studied LP-WUS configuration, at least via system information broadcast. Further wording during TR draft.**   + **RAN2 has studied and concluded the feasibility for RRM measurement relaxation (including no measurement) for serving cell by MR and neighboring cell by MR at least if RRM measurement on LR for serving cell is feasible/supported. Details are to be decided in WI.**   **For RRC\_CONNECTED mode**   * **RAN2 has studied the procedure where network control/configure/activate LR for LP-WUS monitoring, and concluded the feasibility for LP-WUS to control PDCCH monitoring by MR with / without C-DRX. Detailed design is to be decided in WI.**   **Note: Both duty cycled and/or continuous monitoring for LP-WUS could be further discussed in WI phase for RRC\_IDLE/INACTIVE and RRC\_CONNECTED mode.** |

**Proposal 1: RAN2 agree the above TR conclusion for the high layer study on LP-WUS/WUR, and possible wording polish, if any, during post-meeting email discussion.**

**Proposal 2: Update the TR based on the above offline decision.**

DISCUSSION

- Nokia want to make the text more specific e.g. refer to LP-SS and MR SSB. No support, this is RAN1 discussion

* TP above is agreed.

R2-2313940

- vivo report that TP above is included, and editors notes removed, but there may still be a need to update for meeting agreements.

* endorsed
* Short Post email discussion, to cover non-covered agreements, word-smithing if needed (no major change expected)

[R2-2311915](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311915.zip) Summary of discussions on open issues for LP-WUS vivo discussion Rel-18 FS\_NR\_LPWUS

P1

- CATT has additional aspect that should be captured. The drawbacks are not sufficiently clear.

P2

- QC think “maintaining valid SI” is not good wording.

- ZTE think we can skip P2 and just go for P3

P3

- Nokia think that if important the network can just wake up UEs by WUS and then use normal mechanisms for SI update. QC agrees with Nokia. Nokia wonders what is the benefit of Alt2.

P4

- Ericsson think that alt1 means that LPWUS need to carry more information.

- Nokia think the network can use WUS without DCP. Vivo clarifies that this is covered already in the TR.

- Sony think solution 2 will bring delays that are non-practical and also consume power.

P5

- Session Chair; Not agreeable, not enough support (and no time in the SI to develop a solution to sufficient detail to determine e.g. whether such existing timer shall eb reused).

P6

- LGE think there is no clear relation. Chair think this related to turn on/off MR.

- Nokia think in Connected there may be some impact, but can discuss in the WI phase. Xiaomi agrees this may need discussion.

* The network Need not to be aware of whether the UE is monitoring LP-WUS or not in IDLE/INACTIVE.
* Regarding how to receive SI change notification and/or ETWS/CMAS when UE is using LP-WUS, Alt 1 is the basline, other alternatives needs further justification and may dep on the payload capacity of LP-WUS is

Alt 1: based on legacy indication in short message/paging, i.e. waking UE up by LP-WUS, and receiving the notification of SI change or ETWS/CMAS as in legacy.

* Capture all the below solution(s) on LP-WUS in Connected mode, configured/used together with Rel-16 DCP in the TR, and continue to discuss the details in WI.

Solution 1: Both LP-WUS and DCP can be configured for a UE. However, UE may use only one of them at any time, e.g. depend on network configuration or link quality, etc.

Solution 2: LP-WUS is used in conjunction with DCP, e.g. LP-WUS first wakes up MR, which then monitors DCP.

* The impact on configured resources in connected mode with LP-WUS if any can be discussed in WI (e.g. SPS CG)

[R2-2312571](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312571.zip) TP for TR conclusion on high layer aspects vivo (Rapporteur) discussion Rel-18 FS\_NR\_LPWUS

* Include in offline

### 7.22.2 Idle Inactive Mode

[R2-2311774](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311774.zip) Use of low-power receiver in RRC Idle/Inactive Qualcomm Incorporated discussion Rel-18 FS\_NR\_LPWUS

[R2-2311896](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311896.zip) LP-WUS in RRC Idle/ Inactive Mode Lenovo discussion FS\_NR\_LPWUS#

[R2-2311916](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311916.zip) Discussion on LP-WUS WUR in RRC\_IDLE INACTIVE vivo discussion Rel-18 FS\_NR\_LPWUS R2-2309735

[R2-2311969](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311969.zip) Discussion on LP-WUS in RRC\_IDLE/INACTIVE OPPO discussion Rel-18 FS\_NR\_LPWUS

[R2-2311981](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311981.zip) General considerations on the procedure for RRC\_IDLE\_INACTIVE Xiaomi Communications discussion

[R2-2312074](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312074.zip) Discussion on LPWUS in RRC\_IDLE INACTIVE NEC discussion FS\_NR\_LPWUS

[R2-2312298](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312298.zip) RAN2 impact of LP-WUS in RRC\_IDLE/INACTIVE state Apple discussion Rel-18 FS\_NR\_LPWUS

[R2-2312387](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312387.zip) Remaining issues of LP-WUS in idle or inactive mode ZTE Corporation, Sanechips discussion FS\_NR\_LPWUS

[R2-2312450](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312450.zip) Open issues in IDLE/INACTIVE Procedures to support LP-WUR Samsung R&D Institute India discussion Rel-18

[R2-2312640](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312640.zip) Remaining issues on LP-WUS in RRC\_IDLE/INACTIVE state Huawei, HiSilicon discussion Rel-18 FS\_NR\_LPWUS

[R2-2312737](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312737.zip) LP-WUS in RRC IDLE and INACTIVE Nokia, Nokia Shanghai Bell discussion Rel-18 FS\_NR\_LPWUS

[R2-2312848](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312848.zip) RAN2 aspects on LP-WUS/WUR in RRC Idle/Inactive mode Sony discussion Rel-18 FS\_NR\_LPWUS

[R2-2313103](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313103.zip) LP-WUS in IDLE or INACTIVE LG Electronics Inc. discussion Rel-18 FS\_NR\_LPWUS

[R2-2313230](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313230.zip) LP-WUS/WUR for RRC Idle and Inactive Ericsson discussion Rel-18 FS\_NR\_LPWUS

[R2-2313274](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313274.zip) Further considerations on LP-WUS in RRC\_IDLE&INACTIVE state CATT discussion Rel-18 FS\_NR\_LPWUS

* All 15 tdocs are Noted

### 7.22.3 Connected Mode

[R2-2311917](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311917.zip) Discussion on LP-WUS WUR in RRC\_Connected vivo discussion Rel-18 FS\_NR\_LPWUS

[R2-2311926](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311926.zip) LP-WUS in RRC Connected Mode Lenovo discussion FS\_NR\_LPWUS

[R2-2311961](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311961.zip) Discussion on LP-WUS in RRC Connected OPPO discussion Rel-18 FS\_NR\_LPWUS

[R2-2311982](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2311982.zip) Discussing on LP-WUS monitoring for RRC\_Connected Xiaomi Communications discussion

[R2-2312075](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312075.zip) Discussion on LPWUS in RRC\_CONNECTED NEC discussion FS\_NR\_LPWUS

[R2-2312388](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312388.zip) Remaining issues of LP-WUS in connected mode ZTE Corporation, Sanechips discussion FS\_NR\_LPWUS

[R2-2312449](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312449.zip) Discussion on LP-WUS in connected mode Samsung R&D Institute India discussion Rel-18

[R2-2312641](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312641.zip) Further considerations on LP-WUS in RRC\_CONNECTED Huawei, HiSilicon discussion Rel-18 FS\_NR\_LPWUS

[R2-2312847](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2312847.zip) Considerations on LP-WUS/WUR in RRC connected mode Sony discussion FS\_NR\_LPWUS

[R2-2313127](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313127.zip) On LP-WUS in RRC\_CONNECTED Nokia, Nokia Shanghai Bell discussion FS\_NR\_LPWUS

[R2-2313231](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2313231.zip) LP-WUS/WUR for RRC Connected Ericsson discussion Rel-18 FS\_NR\_LPWUS

* All 11 tdocs are Noted