3GPP TSG-RAN WG2 Meeting #127 R2-24xxxxx
Maastricht, Netherlands, Aug 19th – 23rd, 2024

Agenda Item: 9.1

Source: Vice Chairman (Samsung)

Title: Report from session on V2X/SL, R18/19 MOB, and R19 NES

Document for: Approval

Time Schedule
Please refer to the latest schedule in the RAN2 inbox on the public 3GPP servers.

## List and Status of Offline/Email Discussions

## Approved outgoing LSs

## 4.2 V2X and Sidelink corrections Rel-15 and earlier

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

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

Tdoc Limitation: 1 tdocs

## 5.2 NR V2X

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

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

Tdoc Limitation: 1 tdocs

R2-2407464 MAC correction on resource selection LG Electronics Inc. CR Rel-16 38.321 16.16.0 1915 - D 5G\_V2X\_NRSL-Core

R2-2407472 MAC correction on resource selection LG Electronics Inc. CR Rel-17 38.321 17.9.0 1916 - A 5G\_V2X\_NRSL-Core

R2-2407475 MAC correction on resource selection LG Electronics Inc. CR Rel-18 38.321 18.2.0 1917 - A 5G\_V2X\_NRSL-Core

* In cover page, typos of “reources pool” should be changed to typos of “resources pool”
* Other specs affected should be clicked for “N”
* Agreed in R2-2407588, R2-2407589, R2-2407590 with the changes above.

R2-2406699 Correction to MAC on cast type ZTE Corporation, Sanechips CR Rel-16 38.321 16.16.0 1888 - F 5G\_V2X\_NRSL-Core

* Agreed.

[Huawei]: We may consider to reflect it into NOTE2. Note we have similar note for HARQ enabled/disabled in Rel-16, which indicates is disabled for MAC CE. [Apple]: Prefer Huawei’s suggestion. [Session chair]: Note this change was agreed last meeting for Rel-17. It may be simpler to mimic same change for Rel-16.

## 6.6 NR Sidelink enhancements

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

Tdoc Limitation: 1 tdoc

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

R2-2406262 Correction on resource (re)selection for IUC OPPO CR Rel-17 38.321 17.9.0 1873 - F NR\_SL\_enh-Core

R2-2406263 Correction on resource (re)selection for IUC OPPO CR Rel-18 38.321 18.2.0 1874 - A NR\_SL\_enh-Core

For the first change:

[LG]: Consider the current text has no problem. [OPPO]: The removed condition can be also applicable to the three conditions. It is not exclusive condition. That’s why “the latency requirement of the Sidelink Inter-UE Coordination Information transmission (if applicable)” is added for each three cases with the removal of the exclusive condition. [LG]: Current MAC specifies two parts of resource selections. One is the resource selection for the data and another one is explicitly for IUC Information. If we remove the condition, it becomes less clear for the resource selection for IUC. [Apple]: Share the same view as LG. [OPPO]: Want to have more time to discuss with other companies. Would like to revisit it next meeting.

* Revisit it next meeting.

For the second change:

[LG]: Based on RAN1 agreement, random resource selection with *sl-interUECoordinationScheme2* is not supported, so if we really want to align with RAN1, we can simply remove “random selection” in the first paragraph. [OPPO]: Have somewhat different view on RAN1 status, however it can be one of possible solutions. [OPPO, LG]: It is better to ask RAN1 if configuration of both IUC scheme 2 and random resource selection is supported or not.

* LS is sent to RAN1 to ask if configuration of both IUC scheme 2 and random resource selection is supported or not.
* [AT127][107][V2X/SL] (OPPO)

 **Scope:** Ask RAN1 if configuration of both IUC scheme 2 and random resource selection is supported or not.

 **Intended outcome:** LS in R2-2407591

**Deadline:** Email approval (until end of 8/21 Wednesday)

R2-2406514 Correction on prioritization between SL transmission and MAC CE-triggered SR ASUSTeK CR Rel-17 38.321 17.9.0 1886 - F NR\_SL\_enh-Core

R2-2406515 Correction on prioritization between SL transmission and MAC CE-triggered SR ASUSTeK CR Rel-18 38.321 18.2.0 1887 - A NR\_SL\_enh-Core, NR\_SL\_enh2

* Noted.

[LG]: Based on RAN2 previous agreement on prioritization rule between UL MAC CE and SL, RAN2 agreed UL MAC CE is always considered as higher priority than UL threshold and it was agreed that SL is only compared to SL threshold, e.g. if SL has higher priority than SL threshold, SL is prioritized. Otherwise UL MAC CE is prioritized. The current MAC is ok. [Samsung]: Is it realistic scenario that NR-U (or IAB) and SL/V2X co-exist? If not, we may not need to consider LBT failure MAC CE and Pre-emptive BSR MAC CE. [Ericsson]: Share the view with Samsung. [CATT]: Prioritization rule was introduced in Rel-16 and we haven’t considered new MAC CEs introduced from Rel-17. It is better to have more time to think of. [OPPO]: Agree with LG, however it was for PUSCH with UL MAC CE. Cannot recall whether RAN2 discussed and made a specific decision for SR. [OPPO]: Remember SR prioritization actually inherited from URLLC. Need to double check. [CATT]: In Rel-16, we only considered BSR MAC CE then the priority of the corresponding LCH data was considered in prioritization rule. [Huawei]: Remember SR triggered by LCH data was only considered in Rel-16. We haven’t discussed other cases, e.g. SR triggered by UL MAC CE. It is good to discuss it in common session. [OPPO]: Based on companies inputs, it is not for correction. It is for new feature, which should be discussed for TEI. [Session chair]: Let’s have more time to think of and come back next meeting. It would be good to discuss in common session. Target agenda item should be discussed with RAN2 chair-lady.

R2-2407011 Correction on SL IUC and SL DRX configurations for SL enhancements Huawei, HiSilicon CR Rel-17 38.331 17.9.0 4913 - F NR\_SL\_enh-Core

R2-2407012 Correction on SL IUC and SL DRX configurations for SL enhancements Huawei, HiSilicon CR Rel-18 38.331 18.2.0 4914 - A NR\_SL\_enh-Core

* Agreed.

[Ericsson]: Support the proposal. [ZTE]: Many co-existence features are captured in stage 2. Prefer to capturing it into stage 2. [Huawei]: It is configuration aspect, so prefer RRC. [Vivo]: UE behaviour is clear in MAC so we may not need this CR. [Toyota]: It should be specified somewhere, in either stage 2 or stage 3.

R2-2407019 Correction to MAC on HARQ feedback indicator Ericsson CR Rel-17 38.321 17.9.0 1895 - F NR\_SL\_enh-Core

R2-2407246 Correction to MAC on HARQ feedback indicator Ericsson CR Rel-18 38.321 18.2.0 1906 - A NR\_SL\_enh-Core

* NOTE 2 will be updated to “NOTE 2: HARQ feedback enabled/disabled indicator is set to disabled for the transmission of a MAC PDU only carrying Sidelink MAC CE(s), e.g. Sidelink CSI reporting MAC CE, Sidelink DRX Command MAC CE, Sidelink Inter-UE Coordination Request MAC CE or Sidelink Inter-UE Coordination Information MAC CE.”
* With the NOTE 2 above, agreed in R2-2407592 and R2-2407593.

R2-2407020 Correction to MAC on cast type Ericsson CR Rel-18 38.321 18.2.0 1896 - A NR\_SL\_enh-Core Withdrawn

R2-2407405 Correction on resource selection for IUC LG Electronics Inc. CR Rel-17 38.321 17.9.0 1909 - F NR\_SL\_enh-Core Withdrawn

R2-2407412 Correction on resource selection for IUC LG Electronics Inc. CR Rel-18 38.321 18.2.0 1910 - A NR\_SL\_enh-Core Withdrawn

## 7.4 Further NR mobility enhancements

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

Time budget: 0 TU)

Tdoc Limitation: 2 tdocs.

### 7.4.1 Organizational

Including incoming LSs and rapporteur inputs.

R2-2406217 Reply LS on intra-SN SCPAC in MN format (R3-243775; contact: ZTE) RAN3 LS in Rel-18 NR\_Mob\_enh2-Core To:RAN2

* Noted.

R2-2406227 Reply LS on LTM L1 intra and inter-frequency measurements (R4-2410303; contact: Ericsson) RAN4 LS in Rel-18 NR\_Mob\_enh2-Core To:RAN2 Cc:RAN1

* Noted.

### 7.4.2 Control plane corrections

Including stage 2 and control plane (e.g. RRC) corrections (including [Post126][514][R18MobE]). A single CR with miscellaneous corrections is requested; minor and editorial issues should be coordinated with the CR rapporteur and merged into the miscellaneous CR. A contribution can include multiple TPs. Note RRC CR rapporteur’s summary and suggestion (based on the submitted contributions) may be provided.

**UE measured TA:**

P4, P5, P6 and P7 in R2-2406337 (MediaTek)

Proposal 4: In clause 5.3.5.18.6, correct the procedural text so that the UE stops the UE-based TA measurements for the LTM candidate which becomes the current SpCell.

* Noted. RRC CR rapporteur will see if anything is missed in CR preparation.

[LG]: Whether to start/stop UE-based TA measurement is up to UE implementation. [Session chair]: Based on the proposed TP, “else” includes “if the value of *ltm-UE-MeasuredTA-ID* is equal to the value of *ltm-ServingCellUE-MeasuredTA-ID* within *VarLTM-ServingCellUE-MeasuredTA-ID”,* then shouldn’t the UE continue UE-based TA (or the UE should be configured with UE-based TA)? [Qualcomm]: Nothing is broken even though the UE performs UE-based TA for SpCell. [Vivo]: Understand the motivation, however the TP seems not so accurate.

Proposal 5: In clause 5.3.5.18.6, correct the procedural text so that the UE does not start the UE-based TA measurements for the LTM candidate which becomes the current SpCell.

* Intention is agreed and we will add a note. Detailed wordings can be discussed as part of RRC CR preparation (taking Qualcomm’s suggestion into account).

[Qualcomm]: We can simply add a note, e.g. UE is not expected to perform UE-based TA measurement for SpCell (instead of updating many changes in the procedure).

Proposal 6: In clause 5.3.5.18.6, remove the unnecessary procedural text to stop the UE-based TA measurements when the LTM candidate which becomes the current SpCell does not have field ltm-UE-MeasuredTA-ID.

* Noted. RRC CR rapporteur will see if anything is missed in CR preparation.

Proposal 7: RAN2 to discuss if and how to capture handling of the UE-based TA measurements for the scenario where the SpCell changes by L3 mobility procedure (handover/PSCell change) while LTM is configured.

* Not pursued.

[Qualcomm]: Upon L3 HO execution, does the UE still keep LTM configuration? [MediaTek]: Yes. We can have similar texts at L3 HO. [CATT, OPPO, LG, Apple]: Understand the intention, however thinks nothing is needed. We can count on NW implementation. We have similar situation for SCPAC and we count on NW implementation. NW configuration should be reasonable/updated accordingly.

P1a, P2, P3 in R2-2407200 (Huawei)

Proposal 1a: Confirm the understanding that the information to lower layers that the UE is configured with UE-based TA measurements for a candidate remains valid after LTM cell switch, if there is no new explicit information.

* Agreed.

Proposal 2: Capture in the LTM candidate configuration addition/modification procedures that, when ltm-UE-MeasuredTA-ID is not present for a LTM candidate configuration, the UE informs lower layers that UE-based TA measurement is not configured. (See Annex TP)

* Agreed with intention. Detailed wordings and MediaTek’s concerned case will be further discussed as part of RRC CR preparation.

[MediaTek]: It is defined as optional, M, so if not removed earlier, the information should be continued even though it is absent. [Huawei]: We have a case it is removed and then added again. In the case, it should inform lower layers that the UE is not configured with UE-based TA measurements for this LTM-Candidate.

Proposal 3: Capture that when the network configures LTM candidates with ltm-UE-MeasuredTA-ID, the network ensures that the UE has a value stored in ltm-ServingCellUE-MeasuredTA-ID.

* Agreed. It can be included in the corresponding field description.

**LTM Configuration:**

P1 in R2-2406726 (Apple)

Proposal 1: RAN2 clarify whether the nested ltm-Config is supported or not.

* Nested ltm-Config (in both reference configuration and candidate configuration) is not supported.
* Add the clarification above into the corresponding field description.

[MediaTek]: Understand the nested LTM-config is not the intention in R18 LTM design, and it can not work in subsequent LTM. [Vivo]: Ok with the conclusion. Wonders what’s spec impact. Adding the corresponding clarification would be sufficient.

Proposal 2: If the nested ltm-Config is supported, RAN2 confirm the understanding in Observation 3 and Observation 4 on how to handle the nested ltm-Config.

Observation 3: According to current spec description, the nested ltm-Config in ltm-ReferenceConfiguration is useless.

Observation 4: According to current spec description, UE will update the ltm-Config by the nested ltm-Config in ltm-CandidateConfig at LTM cell switch execution.

Proposal 3: Confirm that that network may provide the ltm-Config without ltm-CSI-ResourceConfig.

* Agreed.

**SpCell reporting:**

P2 in R2-2406337 (MediaTek)

Proposal 2: In the field description of spcellInclusion, clarify that it cannot be set to True if SpCell resources are not included in LTM-CSI-ResourceConfig.

* Agreed.

[OPPO, Samsung]: Nothing is broken. The existing condition for spcellInclusion is when SpCell is included in candidate LTM configuration, which sounds already cover proposal 2. [MediaTek]: “SpCell is included in candidate LTM configuration” doesn’t mean SpCell resources are included in LTM-CSI-ResourceConfiguration. [Huawei, Vivo]: Support the proposal.

**Unified TCI state type:**

P3 in R2-2406337 (MediaTek)

Proposal 3: In the field description of unifiedTCI-StateType, specify that the UE applies value separate if unifiedTCI-StateType is absent in LTM-TCI-Info. In addition, change the need code of unifiedTCI-StateType to Need S.

* No change of need code.
* Add a clarification NW always signals this IE in the field description. Detailed wordings are up to RRC CR rapporteur.

[CATT]: Even with change of need code to S, consider it is NBC change. [LG]: Huawei proposed different solution, i.e. just network makes sure it is signalled. Prefer Huawei proposal. [Huawei]: In Rel17 MIMO, it was mandatory IE. NW always signalling is quite aligned with Rel17. [Qualcomm]: Share the view with Huawei. [Samsung]: LTM should be always operated based on unified TCI. In that point of view, Huawei’s option sounds better.

**Early decoding:**

P1 in R2-2406847 (Nokia)

Proposal 1: NW indicates which cells (e.g. by providing a list of cells) are subject to early ASN.1 decoding. This indication is included in the RRCReconfiguration message used to configure LTM.

* RAN2 understands NW indicating which cells (e.g. by providing a list of cells) for early ASN.1 decoding is not required in Rel-18.

[LG]: What was motivation to introduce this capability? In early phase, we assumed it is up to UE implementation. [Nokia]: It was RAN4 decision. [Huawei]: There is no definition regarding how fast. [Nokia]: There are numbers defined in RAN4 (either 10ms or 0ms). [Huawei]: Think NW knowledge of which candidate cell is configured for early decoding is not really useful. [Qualcomm, Samsung]: Share the view with Huawei. Sounds optimization that is not essential. [OPPO]: With Nokia proposal, which node will configure cells for early decoding, source cell or target cell? [Nokia]: Consider it should be the source cell. [LG]: UE implementation to decide which cell is enough. [Apple]: Think even NW configures for a candidate cell, cell switch may happen to the other candidate cell. Then how it works? [Nokia]: Think with RAN2 conclusion, it is good to inform RAN4. [Ericsson]: Don’t see the need to send LS to RAN4.

P5 in R2-2407200 (Huawei)

Proposal 5: The network does not indicate which LTM candidate configurations can be fast processed by the UE. Fast RRC processing for LTM candidate configurations is up to UE implementation.

**Configuration for UL early sync:**

R2-2407370 Discussion on PRACH occasion validation for LTM Qualcomm Incorporated discussion

Proposal 1: RAN2 to agree adding a new IE ltm-tdd-UL-DL-ConfigurationCommon-r18 in LTM-Candidate-r18.

* Noted. If we receive RAN1 LS this meeting, we can reflect new parameters in RRC CR (in short email discussion on RRC CR).

[Ericsson]: Technically agree with the proposal. However, it is under RAN1 discussion this meeting. And it seems more parameters are missed. It is better to wait for RAN1 inputs.

**L2 reset only in inter-DU only or allowed for intra-DU also?**

P5 in R2-2407050 (Samsung)

Proposal 5: RAN2 is kindly asked to confirm that L2 reset is also applicable for the intra-DU LTM case, and an LS can be sent to RAN3.

* L2 reset (RLC reestablishment and PDCP data recovery) is also applicable for the intra-DU LTM case.

[Ericsson, Huawei]: Proposal 5 is correct. Do we really need to send LS to RAN3? [Samsung]: RAN3 has already discussed it in the past. It would be good to inform our agreement officially. [Session chair]: Showing RAN2 agreement captured in the meeting reporting should be sufficient.

**Measurement gap for L1 and L3 measurements:**

P8 and P9 in R2-2407050 (Samsung)

Proposal 8: In NR-DC, MN considers the LTM configuration in SN (and MN) and the capabilities 39-2 and 39-3 while configuring measurement gaps.

Proposal 9: SN can inform the NR-ARFCN, physical cell-id (PCI) and SSB configuration of its LTM candidate cells to MN in CG-Config INM.

P1 in R2-2407176 (Ericsson)

Proposal 1: The existing measurement gaps framework is re-used for LTM without the need to introduce new signalling.

* Comeback in Thursday CB session.

[Ericsson]: Understand typically if MR gap is required for L3 measurement for a given frequency, it would be also required for L1 Measurement. [Qualcomm]: It is somewhat risky assumption since they defined separate capabilities for L1 and L3. We need to carefully check. [CATT, ZTE]: Share the view with Ericsson. [Qualcomm]: Would like to have some time for check until Thursday CB session.

**SRB5 handling during SCPAC:**

P11 in R2-2407050 (Samsung)

Proposal 11: Capture the handling of SRB5 during Subsequent CPAC execution (as in TP4).

* Agreed.

[Ericsson]: Ok with the proposal 11.

**discardOnPDCP and reestablishRLC in SCPAC:**

P1 in R2-2406531 (OPPO)

Proposal 1: Add the restriction that the NW does not include discardOnPDCP and reestablishRLC for SRB3 in case of SCPAC in MN format.

* Comeback in Thursday CB session.

[Ericsson, Nokia]: NW implementation can handle it. [OPPO]: We already have similar restrictions for others. [OPPO]: After real-time offline discussion with companies, they now understand the proposal better. Would like to comeback in Thursday CB session.

**UL Skipping and LTM cell switch:**

P2 in R2-2407176 (Ericsson)

Proposal 2: If UL skipping is configured, the UE ignore the UL skipping indication for the first transmission in the target cell during an LTM cell switch procedure, i.e. the UE always performs the first transmission.

* Not pursued.

[Apple]: Even w/o new UE behaviour, we can survive with RRC reconfiguration. [Huawei]: Remember it was already discussed and no UE behaviour was introduced. [Qualcomm, CATT]: It only happens for SN change w/o SRB3. Assume it is not often happened and we can count on NW implementation.

**PDCCH monitoring upon LTM Cell Switch Command:**

P3 in R2-2407176 (Ericsson)

Proposal 3: RAN2 to clarify at which point, after the reception of the LTM cell switch MAC CE, the UE starts to monitor the PDCCH.

* Not pursued.

[Xiaomi]: From UE point of view, the UE will monitor PDCCH immediately after reception of LTM Cell Switch Command. [MediaTek]: Understand UE can only monitor PDCCH after RRC processing time (upon end of region 3). [Huawei]: Understand the situation is quite similar to normal RRC reconfiguration w/o consideration of LTM switch. [Apple]: Agree with Huawei. [Nokia]: Agree with Huawei and don’t see a real need to capture anything.

**UE Capabilities:**

R2-2406476 Report of [Post126][514][R18MobE] UE capabilities Open Issues (Intel) Intel Corporation report Rel-18 NR\_Mob\_enh2-Core

Proposal #1 (modified): No dependency between LTM and L1 measurements is captured in RAN2 specs (306, 331, 300) for both FR1 and FR2. Inform RAN1/4 of RAN2 decisions.

Proposal #2: BC of the Intra and Inter-frequency measurements is “Option 1: The BC granularity is BC of serving cells”.

Proposal #4: Chose option 2+4 for LTM MCG and SCG capabilities. That is, define capabilities per band consistent across all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands. And introduce another capability bit (per UE) to indicate inter-frequency LTM (UE indicating this capability shall also support intra-freq, (MCG or SCG) LTM i.e, the default indicated by the per band bits).

Proposal #5: Send LS to RAN1 to get clarification on whether RAN1 capabilities 45-3a/4a, 45-5/5a/6 can also be different intra and inter-frequency.

* Proposal 1, 2, 4, 5 are agreed.

[ZTE]: For FR2, it would be good to have clear RAN2 agreement.

Proposal #3: Discuss whether to introduce another capability bit which indicates that UE supports inter-frequency L1 measurements only in bands of that BC

[Huawei]: One additional bit per UE would be ok and it distinguishes two cases, i) UE supports inter-F measurements only for candidate cells in the BC that inter-F measurement capability is reported and ii) UE supports inter-F measurements for any UE’s supported bands. [ZTE]: With one bit per UE capability, we need to discuss what is default meaning. Understand default should be ii) UE supports inter-F measurements for any supported bands. [Nokia]: W/o additional bit, what will happen?

* More time for discussion seems needed. We can revisit it either CB session or next meeting.

R2-2406477 Draft 331 CR on updates to UE FeMob LTM capabilities Intel Corporation draftCR Rel-18 38.331 18.2.0 NR\_Mob\_enh2-Core

R2-2406478 Draft 306 CR on updates to UE FeMob LTM capabilities Intel Corporation draftCR Rel-18 38.306 18.2.0 NR\_Mob\_enh2-Core

[Intel]: Propose short email discussion on the draft CRs.

* [AT127][110][MOB] (Intel)

 **Scope:** Update the draft CRs (if needed), discuss and finalize them.

 **Intended outcome:** Endorsed 38.331 CR in R2-2407599 and 38.306 CR in R2-2407600.

**Deadline:** Super short email discussion.

R2-2406852 Discussion on LTM fast processing capabilities Google Ireland Limited discussion Rel-18 38.306

Proposal 1: Clarify in the field description that maxNumberConfigs-r18 indicates the maximum number of LTMCandidateConfigs for which the UE can perform early ASN.1 decoding and validity check as specified clause 6.3 in TS 38.133.

* Agreed.

Proposal 2: Clarify the meaning of maxNumberConfigs-r18 in TS 38.306 using one of the following options:

Option 1: maxNumberConfigs-r18 represents the total number of LTMCandidateConfigs and ltm-ReferenceConfiguration for which the UE can perform early ASN.1 decoding and validity check.

Option 2 (modified): maxNumberConfigs-r18 represents the maximum number of LTM candidate configuration for which the UE can perform early ASN.1 decoding and validity check, as described in TS 38.133.

* Option 2 is agreed.

[Xiaomi]: Reference configuration can be included in candidate configuration. So reference configuration and candidate configuration may not be considered in separate. [MediaTek]: ASN.1 decoding and validity check for a candidate configuration already means option 2. [Apple]: What is validity check? [Google, MediaTek]: It is clear what ASN.1 decoding and validity check are according to RAN4 definition. [Intel]: Within RAN2 spec, normally when we talk about ASN.1 decoding, it already contains validity check. Question is if we need to specify validity check in RAN2 spec.

Proposal 3: maxNumberStoredConfigCells-r18 indicates the maximum number of serving cell(s) and candidate cell(s), including serving SpCell(s), serving SCell(s) in MCG and SCG, SpCell in LTMCandidateConfig(s) and ltm-ReferenceConfiguration(s), and Scell(s) in LTMCandidateConfig(s) and ltm-ReferenceConfiguration(s) for MCG and SCG, that UE can store the configurations.

* Not pursued.

[MediaTek]: With the similar reason discussed for option2, we may not need to consider option3.

Proposal 4: RAN2 should discuss and clarify whether UEs not supporting LTM fast processing should indicate maxNumberStoredConfigCells-r18.

* RAN2 understands only UE supporting LTM fast processing indicates maxNumberStoredConfigCells-r18.

[MediaTek]: This UE capability information is for fast processing of LTM candidate cell. So if LTM fast processing is not supported, there is no point to report it. [Xiaomi]: Is it related to 39-6 or 39-7? [Session chair]: Think it is 39-6 based on RAN4 capability excel.

R2-2406355 Leftover LTM UE capability issues MediaTek Inc. discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406418 Inter-node coordination on L1 measurement for LTM ZTE Corporation discussion Rel-18 NR\_Mob\_enh2-Core

* [AT127][104][MOB] (MediaTek, ZTE)

 **Scope:** Discuss proposals in R2-2406355 and R2-2406418. Make agreeable proposals based on companies’ understanding and inputs. F2F offline discussion is asked (i.e. need to decide date/time and reserve a room for f2f offline discussion -> Send an email to Juha)

 **Intended outcome:** Discussion summary (including TP if possible) in R2-2407584.

**Deadline:** Comeback in Thursday CB session.

**Others to be discussed as part of CR preparation:**

P1, P2, and P3 in R2-2406332 (CATT)

P3 in R2-2406337 (MediaTek)

P1, P2, P3, P6, and P7 in R2-2407050 (Samsung)

CR in R2-2407175 (Ericsson)

* [AT127][105][MOB] (Ericsson)

 **Scope:** Discuss P1, P2, and P3 in R2-2406332, P3 in R2-2406337, P1, P2, P3, P6, P7 in R2-2407050 and R2-2407175. Update the CR with merging all corrections (if agreeable).

 **Intended outcome:** Endorsed RRC CR/TP in R2-2407585. Discussion summary in R2-2407595 (if needed). If proposals are straight-forward, it is ok to directly discuss based on draft TP/CR (up to offline discussion rapporteur).

**Deadline:** Comeback in Thursday CB session.

**37.340 Correction:**

R2-2406417 Miscellaneous corrections for mobility enhancements ZTE Corporation CR Rel-18 37.340 18.2.0 0399 - F NR\_Mob\_enh2-Core

R2-2407091 Draft CR for subsequent CPAC corrections Ericsson draftCR Rel-18 37.340 18.2.0 F NR\_Mob\_enh2-Core

* [AT127][106][MOB] (ZTE)

 **Scope:** Discuss R2-2406417 and R2-2407091. Update the CR with merging all corrections (if agreeable).

 **Intended outcome:** Endorsed 37.340 CR/TP in R2-2407586. Discussion summary in R2-2407596 (if needed). If proposals are straight-forward, it is ok to directly discuss based on draft TP/CR (up to offline discussion rapporteur).

**Deadline:** Comeback in Thursday CB session.

**38.300 Correction:**

R2-2407449 TP for Stage 2 in coexistence case Lenovo discussion Rel-18 NR\_Mob\_enh2-Core

* Noted.

[Qualcomm]: Ok with “stop” case. However not sure of “resume” case. [Lenovo]: Nothing new is proposed. All principles were already agreed. [MediaTek]: No need to specify it. We can count on UE implementation. [Lenovo]: We already captured many coexistence cases. [Nokia]: Good to capture it if it was already agreed. [Apple]: Assume it may be not realistic configuration. [CATT]: It is similar to legacy PSCell change and CHO evaluation is not stopped in the case.

**Response to RAN3 LS:**

R2-2407562 Discussion on RAN3 LS on intra-SN SCPAC in MN format ZTE Corporation discussion Rel-18 NR\_Mob\_enh2-Core

**Others:**

S-Measure and L3 measurements on L1 LTM candidate cells (P1 in R2-2406438)

Proposal 1: UE should always perform L3 measurement for LTM candidate cells even if s-Measure criterion is satisfied.

* Not pursued.

[Samsung]: To remove this restriction, we may need to consult RAN4. [Vivo]: With S-measure, the UE may need to perform measurements on unknown cells, which is not allowed by RAN4. [Apple]: Better to discuss it in RAN4. [MediaTek]: If the UE is located in the cell centre, L3 measurements on neighbouring cells is not triggered, then L1 measurement is not required. Don’t see any issue with s-Measure. [LG]: In LTM cell switch w/o measurement report, there is no issue with s-Measure. [Nokia]: W/o s-Measure, more UE power consumption is concerned. Think the proposal is not required. [Vivo]: Without proposal, the consequence would be that the UE doesn’t perform L3 and L1 measurements if the current serving cell is better than s-Measure.

Security configuration for SCPAC and EMR reselection MR (R2-2407072)

R2-2406332 Miscellaneous Corrections for SCPAC CATT discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406337 Rel-18 LTM CP remaining issues MediaTek Inc. discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406355 Leftover LTM UE capability issues MediaTek Inc. discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406418 Inter-node coordination on L1 measurement for LTM ZTE Corporation discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406438 Discussion on the impact of s-Measure on L1 measurement vivo discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406476 Report of [Post126][514][R18MobE] UE capabilities Open Issues (Intel) Intel Corporation report Rel-18 NR\_Mob\_enh2-Core

R2-2406477 Draft 331 CR on updates to UE FeMob LTM capabilities Intel Corporation draftCR Rel-18 38.331 18.2.0 NR\_Mob\_enh2-Core

R2-2406478 Draft 306 CR on updates to UE FeMob LTM capabilities Intel Corporation draftCR Rel-18 38.306 18.2.0 NR\_Mob\_enh2-Core

R2-2406531 Discussion on remaining issues for SCPAC OPPO discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406552 Triggering LTM Cell Switch without L1 Measurement and Reports Google Ireland Limited discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406726 Clarification on LTM configuration Apple discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406847 Miscellaneous Rel-18 LTM Corrections (Early decoding, TA acquisition and estimation) Nokia discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406852 Discussion on LTM fast processing capabilities Google Ireland Limited discussion Rel-18 38.306

R2-2407050 RRC corrections for Mobility Enhancements Samsung discussion

R2-2407072 correction related to security configuration for SCPAC and corrections on EMR reselection measurement reporting Nokia discussion

R2-2407091 Draft CR for subsequent CPAC corrections Ericsson draftCR Rel-18 37.340 18.2.0 F NR\_Mob\_enh2-Core

R2-2407175 Misc RRC corrections for feMob Ericsson (Rapportuer) CR Rel-18 38.331 18.2.0 4930 - F NR\_Mob\_enh2-Core

R2-2407176 Remaining issues related to LTM Ericsson discussion Rel-18 NR\_Mob\_enh2-Core

R2-2407177 Summary of RRC proposals for feMob Ericsson discussion Rel-18 NR\_Mob\_enh2-Core Late

R2-2407200 RRC issues for LTM Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

R2-2407370 Discussion on PRACH occasion validation for LTM Qualcomm Incorporated discussion

R2-2407410 Correction on LTM related procedure for UE-based TA measurement Sharp CR Rel-18 38.331 18.2.0 4950 - F NR\_Mob\_enh2-Core

R2-2407449 TP for Stage 2 in coexistence case Lenovo discussion Rel-18 NR\_Mob\_enh2-Core

### 7.4.3 User plane corrections

Including user plane (e.g. MAC) corrections. A single CR with miscellaneous corrections is requested; minor and editorial issues should be coordinated with the CR rapporteur and merged into the miscellaneous CR. A contribution can include multiple TPs. Note MAC CR rapporteur’s summary and suggestion (based on the submitted contributions) may be provided.

**Carrier selection for RACH-less LTM:**

P1 in R2-2406530 (OPPO)

Proposal 1 For RACH-LESS LTM, RAN2 to discuss the way to determine UL carrier with the following three alternatives:

a. introduce a RSRP\_threshold for NUL/SUL selection;

b. indicate NUL/SUL in LTM cell switch MAC CE;

c. CG resource for RACH-LESS LTM execution is configured on NUL.

* Not pursued.

[ZTE]: In RACH-less LTM, CG is only configured either NUL or SUL. Not for both. Do not think we need any new. [Huawei]: Understand CG resource can be configured in both NUL and SUL. And the UE will use the first incoming CG resource. We can follow same principle. [CATT]: Share the view with ZTE. [Xiaomi]: Understands it can be configured for both, but not in the same occasion/slot.

**CG retransmission timer:**

P1 in R2-2406853 (NEC)

Proposal 1: The UE stops the cg-RRC-RetransmissionTimer when the uplink grant for a new transmission on the same HARQ process used for the first PUSCH transmission is received.

* Noted.

[Huawei]: Understand if LTM cell switch is considered completed in this case, the CG is no more valid so this timer is anyway stopped. [LG]: Understand it is only true when RRC reconfiguration complete is sent over RACH-less LTM switch.

**MR Gap and first PUSCH:**

P3 in R2-2406853 (NEC)

Proposal 3: During activated measurement gaps, the UE can transmit the first PUSCH transmission during RACH-less LTM cell switch or first PUSCH transmission during RACH-less handover.

* Noted.

[LG]: Consider it is too fancy after R18 was frozen. It is not needed. [Samsung]: Agree with LG. [LG]: Clarified it was discussed last meeting and it was agreed DRX and measurement gap is applied in LTM switch.

**RACH based LTM and 2 TAs:**

P1, P2, P3, and P4 in R2-2406439 (Vivo)

Proposal 1: Support the co-existence between RACH-based LTM and R18 MIMO two TA, i.e., the LTM candidate cell could be configured with R18 MIMO two TA.

Proposal 2: RAN2 to confirm the mismatch issue occurs when the TCI state ID indicated in the LTM Cell Switch MAC CE is associated to one TAG while the TA value in the RACH RAR is associated to another TAG, assuming the co-existence between RACH-based LTM and R18 MIMO two TA is supported.

Proposal 3: RAN2 selects from the following three options to address the mismatch issue that the TCI state ID indicated in the LTM Cell Switch Command MAC CE and TA value in the RAR within the RACH based LTM procedure are associated to different TAGs:

− Option 2: Target DU sends a new TCI state in RACH Msg 4.

− Option 3: If the mismatch issue occurs, UE follows the TCI state associate with the RACH based LTM procedure. Otherwise, UE follows the indicated TCI-state in the LTM cell switch command.

− Option 4: UE selects the SSB associated with the same TAG ID as the TAG ID associated with indicated TCI state in LTM Cell Switch Command MAC CE during the RACH based LTM procedure.

Proposal 4: If Option 3 in Proposal 2 is agreed, send an LS to RAN1 to inform the mismatch issue between the TCI state in LTM MAC CE and TA value in RAR and provide the corresponding solution.

[Huawei]: The rapporteur's understanding is that it is already clear that this co-existence is supported, the mismatch can occur but may not be so likely, and as explained in option 1, the network can solve the problem by sending a PDCCH order to trigger another RACH. [Apple]: What’s the use case? [Samsung]: Target cell can have two TAs in LTM. [LG]: NW can know this situation and it can be handled by NW implementation, e.g. by PDCCH order. [Ericsson]: Agree with LG. [Vivo]: If we count on NW implementation, the consequence would be no data transmission before TA is corrected by PDCCH order.

* RAN2 understand NW can handle this situation, e.g. by PDCCH order. No need of new option.

**Fall-back RACH from RACH-less LTM:**

P1, P2 in R2-2406517 (ASUSTek)

Proposal 1: For RACH-less LTM, the UE falls back to RACH-based LTM in the target Cell when the SS-RSRP of the SSB corresponding to the configured uplink grant that has the same SSB index as the SSB associated with the TCI state indicated by LTM Cell Switch Command MAC CE is lower than a threshold.

Proposal 2: Adopt text proposal below as baseline for fallback RACH for LTM.

* Not pursued.

[Huawei]: Fallback was discussed and it was not agreed. [Ericsson]: Agreed with Huawei. [ZTE]: Recall that we discussed fallback for CFRA, not for fallback for LACH-less.

**Other corrections:**

P2, P3, P4 in R2-2407433 (ZTE)

P1, P2, P3, P4 in R2-2407199 (Huawei)

**Others to be discussed as part of CR preparation:**

R2-2406331 (CATT)

R2-2406349 (Samsung)

P5, P6 in R2-2406439 (Vivo)

R2-2407197 (Huawei)

P1 in R2-2407433 (ZTE)

P2 in R2-2406853 (NEC)

* [AT127][108][MOB] (Huawei)

 **Scope:** Discuss R2-2406331, R2-2406349, P5, P6 in R2-2406439, R2-2407197, P1 in R2-2407433, and R2-2406853. Update the CR with merging all corrections (if agreeable).

 **Intended outcome:** Endorsed MAC CR/TP in R2-2407587. Discussion summary in R2-2407597 (if needed). If proposals are straight-forward, it is ok to directly discuss based on draft CR/TP (up to offline discussion rapporteur).

**Deadline:** Comeback in Thursday CB session.

R2-2406331 Corrections to TS 38.321 for LTM CATT discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406349 MAC corrections for LTM Samsung Electronics Co., Ltd discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406439 Discussion on MAC open issue for LTM vivo discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406517 Discussion on fallback RACH for LTM ASUSTeK discussion Rel-18 38.321 NR\_Mob\_enh2-Core

R2-2406530 Discussion on carrier selection for RACH-LESS LTM OPPO discussion Rel-18 NR\_Mob\_enh2-Core

R2-2406853 Corrections of MAC issues for RACH-less LTM NEC discussion Rel-18 NR\_Mob\_enh2-Core

R2-2407197 User plane corrections for LTM Huawei, HiSilicon CR Rel-18 38.321 18.2.0 1904 - F NR\_Mob\_enh2-Core

=> Revised in R2-2407563

R2-2407563 User plane corrections for LTM Huawei, HiSilicon CR Rel-18 38.321 18.2.0 1904 1 F NR\_Mob\_enh2-Core

R2-2407198 MAC CR rapporteur summary Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core Late

R2-2407199 Issues for RACH-less LTM cell switch Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

R2-2407433 Consideration on Remaining Issues on LTM UP Aspect ZTE Corporation discussion Rel-18 NR\_Mob\_enh2-Core

## 7.15 NR Sidelink evolution

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

Time budget: 0 TU

Tdoc Limitation: 1 tdocs

### 7.15.1 Organizational

Including incoming LSs and rapporteur inputs.

R2-2406209 Reply LS on Sidelink Feature Co-configuration (R1-2405530; contact: OPPO) RAN1 LS in Rel-18 NR\_SL\_enh2-Core To:RAN2

* Noted.
* MAC CR rapporteur will update the corresponding MAC changes (if needed).

### 7.15.2 Corrections

Including corrections to all specifications. A single CR with miscellaneous corrections is requested; minor and editorial issues should be coordinated with the CR rapporteur and merged into the miscellaneous CR. A contribution can include multiple TPs. Note RRC and MAC CR rapporteurs’ summary and suggestion (based on the submitted contributions) may be provided.

**TX carrier selection for SL MAC CE:**

P1 in R2-2406746 (LG)

Proposal 1. Carrier selection of SL IUC Request MAC CE, Condition based SL IUC Information MAC CE and SL DRX command MAC CE uses the same procedure as the carrier selection procedure of logical channel data.

P1 in R2-2407131 (Nokia)

Proposal 1: Enhancements to Tx carrier (re-)selection for SL IUC Request MAC CE, Condition based SL IUC Information MAC CE should not be considered.

[Session chair]: TX carrier is part of resource selection. How the UE performs TX carrier for MAC CE according to the current MAC? [Huawei]: MAC will wait until grant is created due to other data transmission. Should be ok since those MAC CEs are not delay sensitive. [LG]: In Rel-16 and Rel-17, MAC generates a new grant for MAC CE. It doesn’t make a sense that MAC should wait until a grant is made for LCH data transmission in Rel-18. [Ericsson, Apple, NEC]: Share the view with LG.

* P1 in R2-2406746 is agreed. Detailed wordings will be discussed in MAC CR preparation.

**Legacy carrier selection in TX carrier selection:**

R2-2406700 Correction on legacy carrier selection ZTE Corporation, Sanechips CR Rel-18 38.321 18.2.0 1889 - F NR\_SL\_enh2-Core

* Comeback in Thursday CB session.

[CATT]: if the upper layer indicates single carrier, is it natural to assume no need to perform TX carrier selection among multiple carriers? [Session chair]: Suggest offline discussion among interested companies, e.g. whether the current MAC works w/o change? Or with adding the new sentence (to make it clearer), any real issue or further spec impacts?

**TP on IUC/DRX in Co-Ex:**

R2-2406584 Discussion on MAC corrections when supporting IUC and DRX in Co-Ex LG Electronics France discussion Rel-18 38.321 NR\_SL\_enh2

[Apple, Ericsson]: Looks quite complicated. Can we consider another structure to capture it? [OPPO, Vivo, Huawei]: Thinks this change is clear and it is the best we can do. Support the change. [Vivo]: Would like to have more time to check more carefully (e.g. in short email discussion). [Huawei]: Ok to agree with it now. [Apple]: Will prepare simpler MAC change until Thursday CB session.

* Apple’s MAC correction is provided in R2-2407594
* Comeback in Thursday CB session. Will compare two versions and select one of two.

**Correction on MCSt:**

R2-2406316 Correction on selection of resources for MCSt CATT, CICTCI draftCR Rel-18 38.321 18.2.0 F NR\_SL\_enh2

* Intention (to specify selection of multi-shots resources for MCSt approach 2) is agreed.
* Detailed wordings can be further discussed in MAC CR preparation.

[LG]: Understand “one transmission opportunity” already covers multiple slots if a number of consecutive slots is provided by L1. [CATT]: One transmission opportunity has been an old term, which indicates single slot from Rel-16. [Qualcomm]: Understand the intention. With this change, do we need additional specification efforts to define a relationship between a grant and a number of consecutive slots, e.g. a number of consecutive slots will be considered as single grant or multiple grants? How does it impact HARQ processes and retransmissions? etc. [Vivo]: Support the proposal. On Qualcomm’s question, think no more specification effort is needed. Think a number of consecutive slots will be considered as single grant. [CATT]: Suggest to agree with intention. We can further discuss detailed wordings or other aspects during MAC CR preparation.

**Correction on prioritization:**

R2-2406518 Discussion on SR prioritization regarding SL transmission ASUSTeK discussion Rel-18 38.321 NR\_SL\_enh2

* Noted.

[Session chair]: For the first proposal that is related to SL-PRS, it would be better to discuss it in positioning session. [OPPO]: Current MAC specifies a collision with two channels and it is clear a collision with three channels would bring the problem as described. Then NW should avoid this collision by implementation. [LG]: Although understand the intention, also agree with OPPO. We can rely on NW implementation to avoid this issue. [ASUSTek]: Not clear NW can always avoid this issue. If cannot avoid the issue, we need to define UE behaviour.

**Correction on LCP restriction:**

R2-2406806 Correction to per-LCH carrier set restriction in LCP Ericsson draftCR Rel-18 38.321 18.2.0 NR\_SL\_enh2

* Agreed.

[Huawei]: RAN2 agreed this information is for LCP. We should keep it. [OPPO]: sl-AllowedCarriers is not the only one to be considered. It will be further filtered out based on other factors, e.g. UE capabilities, etc. [OPPO]: Allowed carriers is the term that the upper layer indicates to MAC after all filtering out. Note the allowed carriers are already considered in LCP.

**Others on MAC:**

R2-2406596 Miscellaneous corrections for SL evolution Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2-Core

R2-2407381 MAC corrections on Release-18 Sidelink evolution LG Electronics Inc. CR Rel-18 38.321 18.2.0 1907 - F NR\_SL\_enh2

* [AT127][101][V2X/SL] (LG)

 **Scope:** Capture all agreements made in RAN2#127.

 **Intended outcome:** MAC CR in R2-2407581.

**Deadline:** Comeback in Thursday CB session.

R2-2406265 Miscellaneous correction on R18 SL Evolution OPPO CR Rel-18 38.331 18.2.0 4863 - F NR\_SL\_enh2

R2-2407372 Correction on setuprelease type sidelink fields handling Google CR Rel-18 38.331 18.2.0 4821 1 F NR\_SL\_enh2 R2-2405322

* [AT127][102][V2X/SL] (OPPO)

 **Scope:** Discuss changes in R2-2406265 and R2-2407372, capture all agreements made in RAN2#127 and update RRC CR with merging all corrections (if agreeable).

 **Intended outcome:** RRC CR in R2-2407582.

**Deadline:** Comeback in Thursday CB session.

R2-2407388 Rapporteur Stage 2 Corrections for NR Sidelink Evolution InterDigital France R&D, SAS, NEC CR Rel-18 38.300 18.2.0 0893 - F NR\_SL\_enh2

R2-2406554 TP for SL CA in TS38300 NEC discussion NR\_SL\_enh2

* [AT127][103][V2X/SL] (IDC)

 **Scope:** Discuss changes in R2-2407388, R2-2406554 and update CR with merging all corrections (if agreeable)

 **Intended outcome:** 38.300 CR in R2-2407583.

**Deadline:** Comeback in Thursday CB session.

R2-2406264 Discussion on LS R1-2405530 OPPO discussion Rel-18 NR\_SL\_enh2

R2-2406746 Discussion on carrier selection for SL MAC CE(s) LG Electronics Inc. discussion Rel-18 38.321 NR\_SL\_enh2

R2-2407131 Carrier reselection for IUC Nokia discussion

## 8.5 Network Energy Saving Enh.

(Netw\_Energy\_NR\_enh-Core; leading WG: RAN1; REL-19; WID: [RP-241650](https://www.3gpp.org/ftp/meetings_3gpp_sync/ran/docs/RP-241650.zip) )

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.5.1 Organizational

Including incoming LSs and rapporteur inputs.

* **R19 NES CR rapporteurs:**

RRC: Ericsson

MAC: IDC

38.300: Huawei

38.304: Apple

38.306: Intel

### 8.5.2 On-demand SSB SCell operation

RAN2 spec impacts and high-level solutions.

**Scenarios on OD-SSB:**

P1 in R2-2406425 (Xiaomi)

Proposal 1: RAN2 start the discussion from Scenario 2/2A and wait for RAN1 conclusion on Scenario 3A/3B.

* Agreed.

**OD-SSB transmisson MAC CE:**

P4, P5 in R2-2406721 (Vivo)

Proposal 4: RRC based OD-SSB transmission indication is used to indicate the initial activation state of OD-SSB configuration for Scenarios #2 and #2A.

Proposal 5: MAC CE based OD-SSB transmission indication is used to activate the OD-SSB when the SCell is in deactivated (i.e., Scenarios 2) or indicate the activation state of OD-SSB when activating the SCell via MAC CE (i.e., Scenarios 2A).

P2, P3 in R2-2406669 (Apple)

Proposal 2: Following RAN1 agreement, configuration on OD-SSB transmission pattern (e.g. frequency, SSB position and transmission periodicity) doesn’t need to be included in MAC-CE, i.e., it is sufficient to only include 1bit indication of activation / deactivation of OD-SSB transmission on the corresponding SCell in MAC-CE.

 Proposal 3: RAN2 down select between the following two alternatives of new OD-SSB MAC-CE design:

 • Alt-1: The new MAC-CE is fixed size only to indicate OD-SSB transmission, and NW send both new MAC-CE and legacy SCell activation MAC-CE for Scenario 2A.

 o The Bi field is set to 1 to indicate that OD-SSB transmission in the SCell with SCellIndex i shall be activated. The Bi field is set to 0 to indicate that OD-SSB transmission in the SCell with SCellIndex i shall be deactivated.

 • Alt-2: The new MAC-CE is variable size to indicate either only OD-SSB transmission (scenario 2), or joint OD-SSB transmission and SCell activation / deactivation (scenario 2A).

 o The first Oct (i.e. Oct1) is mandatory present and the meaning of Bi field is same as Alt-1.

o The second Oct (i.e. Oct2) is optional present. The Ci field is set to 1 to indicate that the SCell with SCellIndex i shall be activated. The Ci field is set to 0 to indicate that the SCell with SCellIndex i shall be deactivated (i.e. same as legacy SCell activation / deactivation MAC-CE).

**Measurement on OD-SSB:**

P1 in R2-2406347 (Samsung)

 Proposal 1: RAN2 to discuss whether on-demand SSB measurements for L3 measurement (i.e. RRM) are used for

 • Option 1: Case #1 only

• Option 2: both Case #1 and Case #2

[Apple]: Support case 2. In case 2, would like to include/consider both OD-SSB and periodic SSB. For case1, extra spec impact will be introduced. [Huawei]: We first decide case1. Observe companies have different understanding on option2. 1) With OD-SSB, periodic SSB’s periodicity is changed. 2) Additional OD-SSB is signalled in addition to periodic SSB. We need to understand which interpretation is correct. [OPPO]: Share the view with Huawei. We need to first secure case 1. [Nokia]: Case 2 is more similar to what we already have. Should consider case 2.

* Measurement based on OD-SSB in case 1 and case 2 will be considered. (case 1 and case 2 defined in RAN1).

P2 in R2-2407414 (Sharp)

Proposal 2: For Case #1, the UE does not expect to measure SSB when on-demand SSB is deactivated. In other words, the UE expects to measure SSB when on-demand SSB is activated.

Proposal 3: RAN2 WG to discuss the issue of false measurement report triggering due to no SSB transmission when on-demand SSB is deactivated.

P8 in R2-2406669 (Apple)

Proposal 8: RAN2 study how the UE adapts L3 RRM configuration (e.g. SMTC and SSB\_ToMeasure) to perform L3 measurement based on OD-SSB which is indicated by the new OD-SSB MAC-CE.

R2-2406266 Discussion on On-Demand SSB OPPO discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406347 On-demand SSB SCell Operation Samsung Electronics Co., Ltd discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406425 Discussion on on-demand SSB Xiaomi discussion

R2-2406444 On-demand SSB SCell operation in connected mode ZTE Corporation, Sanechips discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406469 RAN2 impacts to enable on-demand SSB SCell Intel Corporation discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406620 On-demand SSB Scell operation discussion Sony discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406669 Discussion on RAN2 work of on-demand SSB for Scell Apple discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406721 Discussion on on-demand SSB SCell operation vivo discussion Rel-19

R2-2406749 Discussion on on-demand SSB Scell operation Spreadtrum Communications discussion Rel-19

R2-2406889 Issues on the procedure of on-demand SSB SCell operation Lenovo discussion Rel-19

R2-2406895 Discussion on on-demand SSB China Telecom discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406954 On demand SSB handling Nokia, Nokia Shanghai Bell discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406979 Discussion on on-demand SSB CMCC discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407002 Consideration on on-demand SSB SCell operation CATT discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407039 Discussion on on-demand SSB for NES Ericsson discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407123 Discussion on On-demand SSB for SCell NEC discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407158 On-demand SSB SCell operation LG Electronics Inc. discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407161 Discussion on On-demand SSB SCell Operation Qualcomm discussion

R2-2407185 On demand SSB transmission for SCell InterDigital discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407271 Discussion on on-demand SSB SCell operation Fujitsu discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407304 Discussion on on-demand SSB SCell operation for NES Huawei, HiSilicon discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407414 Discussion on on-demand SSB SCell operation Sharp discussion

### 8.5.3 On-demand SIB1

Leftover issues from RAN2#126 and remaining essential issues for study (e.g. need of WUS configuration acquisition from NES cell (if needed, what’s use cases and how it works)?, need of SIB1 validity (if needed, what’s use case and how it works), whether/how to support case 3 defined in RAN1 (e.g. reuse/enhance on-demand SIB request procedure)?, etc.). Note study of OD-SIB1 needs to be concluded

**Support of RAN1 case 3 (option 2 + B + Y):**

P2 in R2-2406955 (Nokia)

Proposal 2: RAN2 to consider Case 2, i.e. scenario 1a, only for normative work.

P8 in R2-2406980 (CMCC)

 Proposal 8: For the scenario of acquiring on-demand SIB1 with only Cell A involved, the following agreements made for Scenario 1a can be reused:

 1. Can use the PCI and frequency of a NES Cell to associate the UL WUS configuration with a NES Cell.

 2. For Message 1 based on-demand SIB1 request, the on-demand SI request configuration that currently included in SIB1 may be used as the design baseline.

3. Cell A’s SIB can be used to configure on-demand SIB1 related configuration for neighbour NES cells, e.g., via new SIB or the existing SIB.

[Huawei]: Understand the support of case 3 is not complicated. We can reuse the existing mechanism. Understand case 3 is better in energy saving point of view. Support case 3. [Vodafone]: Both case 2 and case 3 supports anchor scenario. It is not good to have multiple options to handle same scenario. [ZTE]: Share the same view as Nokia. Case2 was already decided in earlier time, so we don’t need to introduce another option for the same scenario. [LG, ITRI]: Think case 2 is the baseline, however case 3 can give maximum energy saving gain. Support to have case 3. We can reuse many of case 2 for case 3. Do not expect much specification efforts. [Rakuten]: In case 2, SIB1 is always acquired from a NES cell while in case 3, SIB1 is acquired from a NES cell and cell A. Prefer simple option (case 2). [Xiaomi]: Cell A may need to provide multiple SIB1s, which make case 3 more complicated. [Fujitsu]: Support Nokia proposal. [Session chair]: Let’s check companies views.

* Case 2 only: Vodafone, ZTE, Vivo, Rakuten, Fujitsu, CATT, Google, Ericsson, Xiaomi, IDC, Nokia, DT (12)
* Case 2 and case 3: Sony, Samsung, Huawei, ITRI, LG, Qualcomm, Lenovo, KDDI, DCM, CMCC (10)

[Apple]: We can make a conclusion that case 2 is baseline and case 3 is feasible, but final conclusion can be left to RAN1. [Nokia]: What’s RAN1 impact on RAN1. Case 3 needs more RAN2/3 works. [ZTE]: Based on our RAN1 colleagues, RAN1 waits for RAN2 decision for case3. Suggest to follow slight majority companies’ views. [Ericsson]: Concluding just feasible for case 3 is not sufficient for RAN discussion. Please note we have spent most of time for OD-SIB1. We still have many works for other scopes. [Vodafone]: Concern the information overhead of inter-node information exchange in case3. [Lenovo]: Expect SIB1 does not change often.

* No consensus for case 3 in RAN2.

**OD-SIB1 Validity:**

P5, P6 in R2-2406470 (Intel)

Proposal 5: To re-use validity time concept (which is currently defined for other SIBs) for OD-SIB1. I.e., when Rel-19 NES UE acquires OD-SIB1, this UE uses it as a valid stored version.

Proposal 6: Legacy notification of SI change can be reused for OD-SIB1. NOTE: network is excluded to trigger a notification of SI change due to changes of the H-SFN value.

P3, P4 in R2-2406955 (Nokia)

Proposal 3: We can rely on legacy UE behaviour to ensure UE has valid SIB1 for the cell (i.e. UE reacquire SIB1 whenever (re)selecting cell).

Proposal 4: Further UE keeps SIB1 updated while on cell via regular SI modification procedure (confirmation of earlier RAN2 agreement).

* P3 and P4 in R2-2406955 are agreed.

P2 in R2-2406670 (Apple)

Proposal 2: SIB1 validity mechanism is supported, i.e., the UE can know when the acquired OD-SIB1 is invalid. Its details can be discussed in normative phase.

[Samsung]: A new timer is not needed for optimization. Current 3 hours existing timer works with value tag and it is not applied to SIB1. [Session chair]: Ask if validity timer means 3 hours existing one or newly introduced timer for SIB1 validity? [LG]: Do we talk about 1) while the UE stays in cell A or 2) while the UE camps on NES cell. [Nokia]: Confirms current 3 hours timer does not work for SIB1. [Nokia]: Understand most companies think that existing mechanism is applied to SIB1.

**WUS configuration of NES cell from NES cell:**

P2 in R2-2407041 (Ericsson)

Proposal 2: Once Rel-19 NES UE camps on the NES cell, the UE expects to receive UL WUS configuration updates from the NES Cell, e.g., via legacy SI modification procedures.

P2, P3 in R2-2406780 (OPPO)

Proposal 2: RAN2 confirms that acquiring the UL WUS configuration from NES Cell is unnecessary.

Proposal 3: The outdated UL WUS configuration stored by the NES UE causes the failure of SIB1 acquisition and eventually requires the UE to go back to Cell A for the latest UL WUS configuration.

* P2 in R2-2407041 is agreed.

[OPPO]: Question is if NES cell only provides its own WUS configuration or if NES cell can provide neighbouring cells’ WUS configuration. [Rakuten]: If NES cell does not do that, the UE needs to back to cell A, which is too much for the UE. [Qualcomm]: W/o WUS configuration of neighbouring NES cells, the UE always need to back cell A whenever cell reselection happens to another NES cell. [Huawei]: Support Ericsson proposal and share the view with Qualcomm.

**MSG3 based on OD-SIB1 REQ:**

P5 in R2-2406659 (Fujitsu)

Proposal 5: Msg3 based SIB1 request is triggered if dedicated RA resources for SIB1 request is not configured. Details will be discussed in a normative phase.

P3 in R2-2406605 (Huawei)

Proposal 3: Msg 3 based OD-SI procedure is not supported for on-demand SIB1 request in case 2 (for requesting to the NES Cell).

* P3 in R2-2406605 is agreed.

[Apple]: Support Huawei’s proposal. We have only single SIB1, so there is no motivation to use MSG3 based OD-SIB1 procedure. If we allow MSG3 based OD-SIB1, it will increase WUS configuration overheads as well. [ZTE]: With MSG3 based OD-SIB1, NES cell needs to monitor MSG3 and send MSG4. MSG3 based OD-SIB1 is not needed. [LG]: Since case 3 seems ruled out, no motivation for MSG3 based OD-SIB1 REQ. [NEC]: WUS contains dedicated RA, so no need for MSG3-based OD-SIB1 REQ.

**Access restriction for legacy UEs:**

P11 in R2-2406346 (Samsung)

 Proposal 11: RAN2 to discuss how to handle Legacy UEs (i.e. UEs not supporting on-demand SIB1).

 • Option 1: Legacy UEs bar the on-demand SIB1 cell based on cellBarred bit set to barred in MIB.

 • Option 2: Legacy UEs bar the on-demand SIB1 cell based on no SIB1 indication via ssb-SubcarrierOffset in MIB.

 • Option 3: Network includes cells supporting on demand SIB1 to list of excluded cells

* Above example option can be considered in normative work. Details and further analysis need to be further discussed in normative work. Other existing options are not excluded.

[Nokia]: With option1, we need an additional barring bit for NES UE. [Google]: For Rel18 legacy UEs (e.g. RedCap UE), with option1, the UE still needs to check SIB1 to determine whether the cell is barred or not. [Lenovo]: When Kssb has a value indicating there is no SIB1, combined with SIB1-PDCCH CORESET and search space, the UE may try to other frequency. Operator needs to carefully set the configuration. [BT]: With option1, legacy UE may not get an emergency call. Want barring but allowing emergency call for legacy UE in NES cell. [KDDI]: Concern if the legacy UE in the market actually bars the cell according to option2 and option3. [Vodafone]: Legacy UE cannot have even emergency call if the UE cannot get SIB1 in NES cell.

**Impacts to RRC connected UEs:**

P4 in R2-2406670 (Apple)

Proposal 4: OD-SIB1 doesn’t impact both legacy and Rel-19 RRC\_CONNECTED UEs (e.g. NES cell with OD-SIB1 is measured by legacy RRC\_CONNECTED UE and can be configured as its PSCell/SCells/target cell).

P2 in R2-2406359 (Xiaomi)

Proposal 2 (modified): RAN2 understands the NW can avoid impact on legacy RRC connected UE and R19 RRC connected UE due to on-demand SIB1 (e.g. NES cell with OD-SIB1 is measured by legacy RRC\_CONNECTED UE and can be configured as its PSCell/SCells/target cell).

* P2 in R2-2406359 is agreed.

[Nokia]: With the original proposal 2, it sounds like always no impact to RRC connected UE. There may be some cases. Think this conclusion somewhat risky.

**SI conclusion:**

P6 in R2-2406670 (Apple)

Proposal 6 (modified): RAN2 conclude that on-demand SIB1 is feasible from RAN2 perspective and recommend normative work of case 2 for on-demand SIB1.

* Agreed.

R2-2406346 On-demand SIB1 Samsung Electronics Co., Ltd discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406359 Discussion on on-demand SIB1 Xiaomi discussion Rel-19

R2-2406445 Remaining issues of on-demand SIB1 in idle and inactive mode ZTE Corporation, Sanechips discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406470 Remaining details to enable on-demand SIB1 Intel Corporation discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406569 The procedure for the on-demand SIB1 transmission Google discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406605 Discussion on on-demand SIB1 operation for NES Huawei, HiSilicon discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406621 On-demand SIB1 for IDLE/INACTIVE UEs Sony discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406622 Further study on Case 3 in on-demand SIB1 Sony discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406653 Discussion on On-demand SIB1 for RAR KDDI Corporation discussion Rel-19

R2-2406659 Discussion on on-demand SIB1 transmission for network energy savings Fujitsu Limited discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406670 Finalize study of on-demand SIB1 Apple Inc, BT Plc discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406722 Discussion on on-demand SIB1 for RRC IDLE and INACTIVE UE vivo discussion Rel-19

R2-2406780 Consideration on on-demand SIB1 OPPO discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406804 Discussion on on-demand SIB1 Sharp discussion

R2-2406896 Discussion on left issues of on-demand SIB1 China Telecom discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406955 On demand SIB1 handling Nokia, Nokia Shanghai Bell discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406980 Discussion on on-demand SIB1 CMCC discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407003 Consideration on on-demand SIB1 issues CATT discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407041 Discussion on on-demand SIB1 for NES Ericsson discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407042 Discussion on on-demand SIB1 for NES Rakuten Mobile, Inc discussion Rel-19

R2-2407043 Discussion on On-demand SIB1 procedure and UL WUS configuration NEC discussion

R2-2407051 Detection and access of NES cells with OD-SIB1 Rakuten Mobile, Inc discussion Rel-19

R2-2407159 On-demand transmission of SIB1 LG Electronics Inc. discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407183 On-demand SIB1 request and reception InterDigital discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407351 Further discussion on on-demand SIB1 HONOR discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407438 Remaining essential issues for study Lenovo discussion Netw\_Energy\_NR-Core

R2-2407455 Discussion on on-demand SIB1 NTT DOCOMO INC.. discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407499 On-demand SIB1 for NES Fraunhofer IIS, Fraunhofer HHI discussion Rel-19

R2-2407540 On-demand SIB1 for Idle/Inactive mode UEs III discussion

R2-2407162 Discussion on On-demand SIB1 Qualcomm Incorporated discussion

### 8.5.4 Adaptation of common signal/channel transmissions

Further consideration of adapation of paging occasions in time domain, legacy UE impact (including barring aspect for paging adaptation), configuration aspect for paging adaptation, RAN2 spec impact and solutions for RACH adaptation and SSB (with consideration of RAN1 progress), etc.

**Paging adaptation:**

* [AT127][109][NES] (OPPO)

 **Scope:** For each direction (N extension vs PF bundling): 1) List proposed options, 2) Discuss to understand each option better, 3) Down select options, 4) Discuss pros and cons for each direction or down-selected options (with the consideration of UE impacts, system impacts and specification job). F2F offline discussion in Brk3 room.

 **Intended outcome:** Discussion summary in R2-2407598.

**Deadline:** Comeback in Thursday CB session.

R2-2406270 Discussion on PO confinement options OPPO, Samsung, ZTE, Huawei, HiSilicon, Qualcomm discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406348 Adaptation of common signal channel transmissions Samsung Electronics Co., Ltd discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406360 Discussion on common signal adaptation Xiaomi discussion Rel-19

R2-2406446 Further consideration on paging occasion adaptation ZTE Corporation, Sanechips discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406471 RAN2 impacts to enable adaptation of paging and RACH in time Intel Corporation discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406523 Discussion on paging adaptation ASUSTeK discussion Rel-19 Netw\_Energy\_NR\_enh-Core R2-2405428

R2-2406544 Adaptation of common signal or channel Fujitsu discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406671 Further discussion on common signal transmission adaptation Apple discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406723 Discussion on adaptation on common signal transmissions vivo discussion Rel-19

R2-2406750 Discussion on adaptation of common signal channel transmissions Spreadtrum Communications discussion Rel-19

R2-2406866 Discussion on the paging occasion adaptation for NES cell ITRI discussion Netw\_Energy\_NR\_enh-Core

R2-2406890 Paging statistics from field and PRACH adaptation Lenovo discussion Rel-19

R2-2406897 Discussion of adaption of paging occasions China Telecom discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406956 Common signal aspects of NES WI Nokia, Nokia Shanghai Bell discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2406981 Discussion on adaptation of common signal channel transmissions CMCC discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407004 Consideration on adaptation of common signalchannel transmissions CATT discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407048 PRACH and paging adaptation NEC discussion

R2-2407163 Discussion on Adaptation of Common Signal/Channel Transmissions Qualcomm Incorporated discussion

R2-2407184 Time domain adaptation of common signalling and channels InterDigital discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407245 Adaptation of common signal/channel transmissions for NES Ericsson discussion Rel-19 Netw\_Energy\_NR\_enh-Core R2-2405290

R2-2407305 Discussion on adaptation of common signals/channels transmissions Huawei, HiSilicon discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407352 Discussion on adaptation of common channel transmissions HONOR discussion Rel-19 Netw\_Energy\_NR\_enh-Core

R2-2407440 Discussion on RACH adaptation SHARP discussion Rel-19

R2-2407454 Discussion on Adaptation of paging occasions NTT DOCOMO INC.. discussion Rel-19 Netw\_Energy\_NR\_enh

R2-2407486 Adaptation of Common Signals and Channels for NES Fraunhofer IIS, Fraunhofer HHI discussion Rel-19

R2-2407520 Discussion on common signal and channel adaptation LG Electronics Inc. discussion Rel-19 Netw\_Energy\_NR\_enh

R2-2407531 Adaptation of common signal/channel transmissions III discussion

## 8.6 Mobility Enhancement Ph4

(NR\_Mob\_Ph4-Core; leading WG: RAN2; REL-19; WID: [RP-241515](https://www.3gpp.org/ftp/meetings_3gpp_sync/ran/docs/RP-241515.zip))

Time budget: 2 TU

Tdoc Limitation: 3 tdocs

### 8.6.1 Organizational

Including incoming LSs, WI rapporteur inputs, etc.

R2-2406244 Reply LS to RAN2 on security handling for inter-CU LTM in non-DC cases (S3-242400; contact: Apple) SA3 LS in Rel-19 NR\_Mob\_Ph4-Core To:RAN2 Cc:RAN3

R2-2406693 Important topics for resolution for Rel-19 Mob Enh WI (Rapporteur) Apple Inc, China Telecom discussion Rel-19 NR\_Mob\_Ph4-Core

* **R19 MOB CR rapporteurs:**

RRC on all of inter-CU and conditional LTM: Ericsson

RRC on L1 event-triggered MR: Huawei

MAC: Vivo

37.340: China Telecom

38.300: Apple

38.323 (if needed): ZTE

### 8.6.2 Inter-CU LTM

Remaining open issues and further details of LTM preparation phase (e.g. single or multiple reference configuration(s)?, details of RRC signaling structure, etc.), early sync phase, execution phase (e.g. support of mixture of intra-CU and inter-CU, etc.), and LTM cell switch completion phase. Initial discussion on inter-CU LTM with DC (high-level spec impacts and solutions).

**Single or multiple reference configuration(s)?**

P1 in R2-2406694 (Apple)

Proposal 1: Inter-CU LTM re-uses the reference configuration from Rel-18 LTM. No additional reference configurations are supported.

P1 in R2-2407269 (LG)

 Proposal 1. Multiple reference configurations are provided for inter-CU LTM, where each reference configuration is CU specific.

**CSI resource and report configuration:**

P3, P4 in R2-2406419 (ZTE)

Proposal 3: The Rel-18 signaling structure for LTM CSI resource and report configuration is reused for inter-CU LTM, i.e. a common CSI resource configuration and cell-specific CSI report configuration.

Proposal 4: The source CU is responsible to generate the common CSI resource configuration.

P5 in R2-2407269 (LG)

Proposal 5. As in Rel-18 LTM configuration, CSI resources for LTM L1 measurement for all LTM candidate cells are provided in the form of a single list.

**Inter-node RRC message for inter-CU LTM:**

P5 in R2-2407421 (Samsung)

Proposal 5: RAN2 is kindly asked to discuss the LTM candidate configuration (ltm-candidate IE) transfer from candidate gNB-CU to the source gNB-CU during the LTM cell preparation procedure by considering the following two options:

  Option 1: Define a new inter-node RRC message for LTM candidate configuration

 Option 2: Define new XnAP IEs to include other information in the LTM candidate configuration

**Early DL sync:**

P3 in R2-2406305 (CATT)

Proposal 3: For inter-CU LTM, the R18 candidate TCI State activation/deactivation design (including MAC CE and related UE handling) is reused.

**Who decides inter-CU LTM switch?**

P3 in R2-2406694 (Apple)

Proposal 3: For inter-CU LTM cell switch, it’s the source DU that triggers the MAC CE and informs the source CU about the target CU of the target LTM cell.

**Indication of inter-CU LTM (RLC and PDCP re-establishment)**

P4 in R2-2407201 (Huawei)

Proposal 4: Introduce a new Rel-19 ID: if the Rel-19 ID is different for the source cell and the target cell, the UE performs PDCP re-establishment, including security key update.

P7, P8 in R2-2406819 (Xiaomi)

Proposal 7: If the security key update is required, the UE shall perform MAC reset, RLC re-establishment and PDCP re-establishment. For the issue how to indicate that the security key update is required, we can wait for SA3’s progress on the security of inter-CU LTM.

Proposal 8: If the security key update is not required, reuse the Rel-18 L2 handling mechanism and the Rel-18 NoResetID is reused to determine whether to perform RLC re-establishment and PDCP data recovery when the UE performs the LTM cell switch procedure.

**Handling of candidate configuration after inter-CU LTM cell switch**

P4 in R2-2406919 (Ericsson)

Proposal 4: As in Rel-18 LTM, the UE keeps its LTM candidate cell configurations after an inter-CU LTM cell switch procedure, unless these are explicitly released by the network.

**Handling of DRBs in subsequent inter-CU LTM:**

P6 in R2-2407421 (Samsung)

Proposal 6: RAN2 is kindly asked to discuss whether different LTM candidate cells can have different admission results (i.e., different LTM candidate cells accept different PDU sessions).

  Option 1: After accessing to a LTM candidate cell, UE automatically releases the PDU session, which has been released before. This introduces specification impact (RAN2).

 Option 2: The inter-CU LTM candidate cell is prepared only if all LTM candidate cells have the same admission result. This seems to be the principle applied in intra-CU LTM.

**LTM and L3 HO:**

 Proposal 9: L3 mobility (including both the network triggered L3 HO and CHO) can be configured to UE, while the inter-CU LTM is configured, and the following items can be considered (follow Rel-18 intra-CU LTM):

  When performing the L3 mobility (HO or CHO), the UE does not autonomously release inter-CU LTM configurations.

  The RRCReconfiguration message to execute an L3 mobility (HO or CHO) procedure may reconfigure inter-CU LTM configurations.

 Before any CHO execution condition is satisfied, upon reception of inter-CU LTM cell switch command MAC CE, the UE executes the inter-CU LTM cell switch procedure.

**Inter-CU SCG LTM:**

P8, P9, P10, P11 in R2-2406305 (CATT)

Proposal 8: Inter-CU SCG LTM preparation can be initiated by source SN. FFS whether it can be initiated by source MN.

Proposal 9: The inter-CU SCG LTM configuration is provided to UE in MN format.

Proposal 10: For inter-CU SCG LTM, the LTM cell switch command MAC CE is sent by source SN.

Proposal 11: For the security key update of inter-CU SCG LTM, SCPAC security key update mechanism is taken as baseline.

P8 in R2-2406919 (Ericsson)

Proposal 8: Only SN-initiated inter-SN LTM (including LTM configuration, early DL/UL synch and LTM execution) is supported in Rel-19.

**Inter-CU MCG LTM:**

P9, P10, P11, P12 in R2-2406419 (ZTE)

Proposal 9: RAN2 to clarify that inter-CU MCG LTM with SCG unchanged just means that PSCell is not changed during inter-CU LTM execution, but the other change related to SCG is allowed, e.g. radio bearer type and termination change.

Proposal 10: Upon execution of inter-CU MCG LTM with SCG unchanged, the UE is required to perform refresh of security key, re-establishment of RLC and PDCP, and MAC reset at both MCG and SCG side.

Proposal 11: For the SN key update in inter-CU MCG LTM with SCG unchanged, one sk-counter is provided for each LTM candidate configuration, e.g. included in the RRCReconfiguration message contained in the ltm-CandidateConfig, as the legacy RRC configuration.

 Proposal 12: RAN2 to discuss how to handle the co-existence case of inter-CU MCG LTM with SCG unchanged and inter-CU MCG LTM with SCG release with the following options:

 • Option 1: The NW ensures that the UE does not switch to an LTM candidate cell with SCG configuration if the UE has released DC prior to the LTM cell switch. Additional Xn interaction is required.

 • Option 2: The UE does not apply the SCG configuration (if any) in the target LTM candidate configuration if the NW triggers the LTM cell switch to an LTM candidate cell with SCG configuration but the UE has released DC prior to the LTM cell switch.

• Option 3: The NW can trigger LTM cell switch to any configured LTM candidate cells, regardless of whether the target candidate cell has the SCG configuration and whether the UE is in NR-DC currently. I.e. inter-CU MCG LTM with SCG addition is supported, this may be considered as out of the current WI scope.

**Coexistence of MCG LTM and SCG LTM:**

P15 in R2-2406419 (ZTE)

 Proposal 15: RAN2 to discuss the following options for the coexistence on different types of LTM candidates:

 • Option 1: The coexistence of Intra-MN MCG LTM and Inter-SN SCG LTM, and the coexistence of Inter-MN MCG LTM and Inter-SN SCG LTM are not supported, i.e. not configured simultaneously.

• Option 2: The coexistence of Intra-MN MCG LTM and Inter-SN SCG LTM, and the coexistence of Inter-MN MCG LTM and Inter-SN SCG LTM are supported, i.e. can be configured simultaneously. But the execution of one type of LTM shall trigger the UE to release the other type of LTM candidate configurations autonomously.

P8 in R2-2406694 (Apple)

Proposal 8: If MN has inter-CU LTM candidates configured, then the UE can be configured with intra-CU LTM in SN, but if the LTM switch in MN is inter-CU, then the UE should not have SN configured after the LTM switch.

R2-2406305 Discussion on inter-CU LTM CATT discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406356 Further discussion on Inter-CU LTM MediaTek Inc. discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406386 Discussion on inter-CU LTM ETRI discussion Rel-19

R2-2406419 Discussion on inter-CU LTM ZTE Corporation discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406430 Discussion on inter-CU LTM vivo discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406532 Discussion on open issues for inter-CU LTM OPPO discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406623 LTM for Inter-CU Sony discussion Rel-19 NR\_Mob\_Ph4

R2-2406658 Discussion on Inter-CU LTM InterDigital, Inc. discussion Rel-19

R2-2406694 View on open issues in inter-CU LTM Apple discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406743 Discussion on inter-CU LTM KT Corp. discussion

R2-2406775 Discussion on Inter CU LTM Lekha Wireless Solutions discussion Rel-19

R2-2406819 Discussion on Inter-CU LTM Xiaomi discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406820 Initial considerations for inter-CU LTM Rakuten Mobile, Inc discussion Rel-19

R2-2406854 Discussion on inter-CU LTM NEC discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406863 Cell switch command for subsequent inter-CU LTM ITRI discussion NR\_Mob\_Ph4-Core

R2-2406867 Discussion on the reference configuration for inter-CU LTM ITRI discussion NR\_Mob\_Ph4-Core

R2-2406919 Important aspects regarding inter-CU LTM Ericsson discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406982 Discussion on Inter-CU LTM CMCC discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407023 Further detailed discussion on supporting inter-CU LTM cell switch Transsion Holdings discussion Rel-19

R2-2407033 Security impacts of Inter-CU LTM Rakuten Mobile, Inc discussion Rel-19

R2-2407073 On Inter-CU LTM Open Issues Nokia discussion

R2-2407107 Radio Resource aspects for intra-CU and inter-CU LTM Rakuten Mobile, Inc discussion Rel-19

R2-2407108 Discussion on Inter-CU LTM China Telecom discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407133 Fast LTM recovery in DC scenarios Rakuten Mobile, Inc discussion Rel-19

R2-2407155 RACH-less LTM completion in inter-CU LTM Rakuten Mobile, Inc discussion Rel-19

R2-2407201 Inter-CU LTM Huawei, HiSilicon discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407269 Discussion on inter-CU LTM LG Electronics discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407320 Discussion on subsequent inter-CU or inter-CU LTM Fujitsu discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407348 Further discussion on inter-CU LTM HONOR discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407374 Inter-gNB LTM with no change of RRC/PDCP anchor Qualcomm Incorporated, NTT DOCOMO, Vodafone, Bharti Airtel (India), Sony discussion

R2-2407407 Discussion on issues for supporting inter-CU LTM Sharp discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407421 Further Considerations to Support Inter-CU LTM Samsung discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407439 Discussion on inter-CU LTM Kyocera discussion Rel-19

R2-2407441 Discussion on inter-CU LTM DENSO CORPORATION discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407448 Discussion on Inter-CU LTM Lenovo discussion NR\_Mob\_Ph4-Core

R2-2407465 Discussion on inter-CU LTM ITL discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407478 RRC Modelling for Inter-CU LTM Nokia discussion Rel-19 NR\_Mob\_Ph4

R2-2407483 LTM enhancements for Inter-CU mobility CEWiT discussion Rel-19 NR\_Mob\_Ph4-Core

### 8.6.3 Measurement event evaluation

Remaining open issues and further details of measurement event evaluation (e.g. need of event LTM1 (if needed, what’s use case)? , what beam(s) of the serving cell and neighboring cell is used for event evaluation?, Need of cell level measurement result for event evaluation (if needed, what’s use case and how it works)? Further details on event configuration signaling design, e.g. how to associate with resource configuration,, etc.)

**Need of event LTM1:**

P1 in R2-2406286 (Huawei)

Proposal1: Support Event LTM1 (Beam of serving cell becomes better than absolute threshold).

P1 in R2-2406733 (Qualcomm)

Proposal 6: Event LTM1 is not defined.

**Serving cell’s beam for L1 MR event evaluation:**

P2 in R2-2406431 (Vivo)

Proposal 2: Current beam (i.e. a beam corresponding to the indicated TCI state) is used for event evaluation in L1 measurement reporting for serving cell.

P2 in R2-2406968 (CMCC)

Proposal 2: The best beam of the serving cell and neighboring cell measured by the UE should be used for event evaluation.

**Candidate cell’s beam for L1 MR event evaluation:**

P3 in R2-2406851 (Nokia)

Proposal 3: For the beam level event evaluation for LTM 3/4/5 the measurement resources listed in the R18 resource configuration are used for evaluating beam level events.

P4, P5 in R2-2406286 (Huawei)

Proposal4: For LTM events involving beam of the neighboring cell as the triggering quantity (e.g., Event LTM A3/5), only LTM candidate cells are applicable.

Proposal5: For LTM events with beam-level measurement of candidate cell as triggering quantity, the applicable beam of the candidate cell is the best beam of that cell.

**Need of applying cell level measurement for L1 MR event evaluation:**

P5 in R2-2406728 (Apple)

Proposal 5: Beam level measurement result, not cell level measurement result, is used LTM event evaluation.

P4 in R2-2407506 (LG)

Proposal 4: Evaluation of Event LTM based on consolidated result of multiple RSs of a serving cell and/or multiple RSs of a candidate cell is supported.

**LTM L1 event-triggered MR configuration:**

P10, P11 in R2-2406728 (Apple)

Proposal 10: R19 LTM event triggered measurement configuration in Figure-4 can be taken as baseline:

- LTM measurement resource configuration is provided in LTM-config;

- Event triggered report config is provided in serving cell config, which may include the event config, report content config, and the configuration for MR transmission.

Proposal 11: FFS on whether the event configuration can be shared across all candidate cells.

P12 in R2-2407506 (LG)

Proposal 12: Common RS pool introduced for Rel-18 LTM is extended to support configuring CSI RS.

**Layer to perform event evaluation:**

P7 in R2-2407446 (Kyocera)

Proposal 7: RAN2 should agree that MAC layer handles the event evaluation and measurement report triggering.

R2-2406287 Discussion on event triggered report Huawei, HiSilicon discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406306 Measurement Event Evaluation CATT discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406357 Discussion on measurement and signalling design MediaTek Inc. discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406420 Discussion on measurement event evaluation ZTE Corporation discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406431 Discussion on LTM measurement event evaluation vivo discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406524 Discussion on beam for evaluation of LTM event-triggered reporting ASUSTeK discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406533 Open issues for event triggered L1 measurement reporting OPPO discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406545 Open issues of measurement event evaluation for LTM Fujitsu discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406707 Discussion on the measurement event evaluation for LTM Xiaomi discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406728 LTM measurement event evaluation and configuration Apple discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406733 Measurement enhancements for LTM Qualcomm Incorporated discussion

R2-2406756 Discussion on measurement event evaluation for L1 measurement event Spreadtrum Communications discussion Rel-19

R2-2406851 Further View on Measurement-related Enhancements for Rel-19 LTM Nokia discussion Rel-19 NR\_Mob\_Ph4 R2-2405149

R2-2406886 L1 Measurement enhancements Lenovo discussion Rel-19

R2-2406908 Discussion on measurement event evaluation for LTM Lekha Wireless Solutions discussion Rel-19

R2-2406920 Important aspects regarding event triggered L1 measurements Ericsson discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406968 Discussion on measurement event evaluation CMCC discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407024 Discussion on event triggered L1 measurement configuration for LTM Transsion Holdings discussion Rel-19

R2-2407109 Discussion on measurement event evaluation for LTM China Telecom discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407124 Event evaluation of L1 measurement reporting NEC discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407141 Event triggered L1 measurement evaluation for LTM Interdigital, Inc. discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407160 Event based L1 measurements triggered LTM candidate cell addition/release Rakuten Mobile, Inc discussion Rel-19

R2-2407195 Reference resource configuration for L1 measurement event Panasonic discussion

R2-2407349 Discussion on measurement event evaluation HONOR discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407393 Discussion on measurement event evaluation KDDI Corporation discussion Rel-19

R2-2407408 Discussion issues on related to measurement event evaluation Sharp discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407422 Remaining Issues for Measurement Event Evaluation Samsung discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407446 Measurement event evaluation for LTM enhancement Kyocera discussion Rel-19

R2-2407470 Discussion on event triggered L1 measurement ITL discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407506 Event LTM - Event variant, new event, RS determination, configuration LG Electronics France discussion Rel-19 NR\_Mob\_Ph4-Core

### 8.6.4 Measurement reporting

Remaining open issues and further details of measurement reporting procedure (e.g. what information in the measurement report? MAC CE or UCI for measurement report?, need of measurement reporting once leaving condition is met, etc.)

**MAC or UCI for MR?**

P1 in R2-2406921 (Ericsson)

Proposal 1: Event-triggered L1-measurements are reported by the UE to the network via MAC CE.

P1 in R2-2407423 (Samsung)

Proposal 1: RAN2 confirm the RAN1 agreements using UCI L1 measurement reporting to align the event based L1 measurement reporting is used for LTM.

**Need of MR when leaving condition is met:**

P3 in R2-2406432 (Vivo)

Proposal 3: It is configurable by gNB whether a UE initiates L1 measurement reporting when leaving condition is satisfied (e.g. reportOnLeave-like parameter in event configuration).

**Need of event-triggered periodic MR:**

P4 in R2-2406432 (Vivo)

Proposal 4: It is configurable by gNB whether a UE performs L1 measurement reporting multiple times for one triggered report (e.g. reportAmount-like parameter in event configuration).

P5 in R2-2406358 (MediaTek)

Proposal 5: The event triggered L1 MR is a one-shot report. Multiple reporting for one trigger event is not introduced. (This does not preclude multiple report by multiple trigger events configuration).

**Information in MR:**

P1 in R2-2407285 (NTTDCM)

Proposal 1: Event-triggered L1 measurement includes below contents;

・Beam information (i.e., SSBRI or CRI)

・Beam quantity (up to RAN1)

・Triggered event information (e.g., ReportConfigID)

P2 in R2-2407423 (Samsung)

Proposal 2: Event triggered L1 measurement reporting for LTM includes following information:

- L1 RSRP of the current beam

- L1 RSRP of the N ≥ 1 beams for the neighbouring cell (at least one of N reported beam(s) should satisfy the condition)

- DL RS resource index (SSB or CSI-RS)

R2-2406286 Discussion on measurement event evaluation Huawei, HiSilicon discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406307 Measurement Reporting CATT discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406358 Discussion on measurement reporting of event triggered L1 MR MediaTek Inc. discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406421 Discussion on measurement reporting ZTE Corporation discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406432 Discussion on event-triggered L1 measurement reporting vivo discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406534 Discussion on the UL signalling for L1 reproting OPPO discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406546 Open issues of measurement reporting procedure for LTM Fujitsu discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406708 Event-based measurement reporting procedure for L1 measurement Xiaomi discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406729 LTM event triggered measurement reporting Apple discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406757 Discussion on measurement reporting for L1 measurement event Spreadtrum Communications discussion Rel-19

R2-2406921 Discussion on which layer reports the event triggered L1 measurements Ericsson, Honor, Huawei, InterDigital Inc., MediaTek Inc., NEC, Nokia, NTT DOCOMO, Oppo, T-Mobile USA, Vivo, ZTE corporation discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2406969 Discussion on measurement reporting CMCC discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407025 Discussion on L1 measurement reporting for LTM Transsion Holdings discussion Rel-19

R2-2407110 Discussion on measurement reporting for LTM China Telecom discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407125 Details of event triggered L1 measurement report NEC discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407142 Event triggered L1 measurement reporting for LTM Interdigital, Inc. discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407208 Event triggered reporting enhancements for LTM Panasonic discussion Rel-19

R2-2407285 Discussion on Event-triggered L1 measurement reporting NTT DOCOMO, INC. discussion Rel-19

R2-2407350 Discussion on measurement reporting HONOR discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407394 Discussion on event triggered L1 measurement reporting KDDI Corporation discussion

R2-2407409 Discussion issues on related to measurement reporting Sharp discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407423 Support of Event Triggered L1 Measurement Reporting Samsung discussion Rel-19 NR\_Mob\_Ph4-Core

R2-2407447 Measurement reporting procedures for LTM enhancements Kyocera discussion Rel-19

R2-2407507 Event LTM - Report triggering, report contents and transmission procedure LG Electronics France discussion Rel-19 NR\_Mob\_Ph4-Core