3GPP TSG-RAN WG2 Meeting #131 R2-25xxxxx

Bengaluru, India, 25-29 August 2025

Source: Session Chair (MediaTek)

Title: Report from session on positioning and sidelink relay

# 4 EUTRA Rel-17 and earlier

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

## 4.3 Positioning corrections Rel-16 and earlier

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

Tdoc Limitation: 1 tdoc

# 5 NR Rel-15 and Rel-16

Essential corrections only.

Tdoc Limitation: 4 Tdocs in total for agenda item 5 (incl. its sub agenda items) and agenda item 6 (incl. its sub agenda items)

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

## 5.3 NR Positioning Support

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

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

(NR TEI16 Positioning)

Stage 2 corrections shall be discussed with the specification rapporteur (Sven Fischer sfischer@qti.qualcomm.com) before submission. Stage 2 CRs not discussed with the specification rapporteur will not be treated.

[R2-2505324](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505324%20Correction%20on%20delivery%20of%20posSIB%20segments%20by%20dedicated%20siganling%20in%20RRC_CONNECTED_r16.docx) Correction to delivery of posSIB segments by dedicated signalling in RRC\_CONNECTED Huawei, HiSilicon, Ericsson, Qualcomm CR Rel-16 38.331 16.20.0 5407 - F NR\_pos-Core

Discussion:

Lenovo think this behaviour would be mandatory for the UE. Huawei confirm that it is intended as a correction.

Nokia think the problem description is not crystal-clear, and they are not sure it is critical; it may be just a matter of efficiency. They also have some concern that the changed text is in sections that are general to SIBs and posSIBs and include the broadcast aspects, and they wonder if it would be an alternative to have multiple SI messages in the dedicated message. Huawei note that there is no ASN.1 change, and they think it is a genuine correction because there are cases where the posSIB needs to be delivered quickly.

vivo ask if there really is a restriction in the spec today. Chair understands that the SI message has the restriction and the OCTET STRING contains the message format.

Ericsson think the CR just clarifies what the network would be allowed to do and distinguishes dedicated from broadcast.

Nokia are bothered by the change of the mapping so that it would be different for broadcast and unicast. They also are concerned by the change to the section about SIBs and posSIBs. Ericsson think the latter change is not essential to have. Qualcomm disagree with Ericsson in this respect and think we need to fix the requirement for only one segment of a posSIB in the SI message, but they agree that it would be nicer if we had a clear separation between the broadcast and unicast cases.

Nokia would prefer not to change anything and think the efficiency issue raised in the coversheet is not critical.

Huawei understand that section 5.2.1 is not specific to broadcast but covers any form of the SI message.

Nokia can accept the change in principle but need to take a further look at the wording.

ZTE think we could address vivo’s question in the offline as well, and they think the change could also be applied to non-positioning SIBs. Chair thinks we should not change the other SIBs in this session; CATT agree and think the use case for non-positioning SIBs would need to be discussed.

Huawei understand the difference here is that the posSIBs are generated by the LMF, not the gNB, so for non-positioning SIBs the gNB can do something in implementation.

* [AT131][401][POS] CRs on posSIB segments in dedicated signalling (Huawei)

Scope: Check and update the CRs in R2-2505324 / R2-2505325 / R2-2505640, including confirming if there is a restriction in the spec today. Intention is to allow multiple segments of a posSIB when sent by dedicated signalling, without changing the broadcast behaviour or the non-positioning SIBs.

Intended outcome: Agreeable CRs in R2-2506301 / R2-2506302 / R2-2506303

Deadline: Wednesday 2025-08-27 1900 IST

[R2-2505325](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505325%20Correction%20on%20delivery%20of%20posSIB%20segments%20by%20dedicated%20siganling%20in%20RRC_CONNECTED_r17.docx) Correction to delivery of posSIB segments by dedicated signalling in RRC\_CONNECTED Huawei, HiSilicon, Ericsson, Qualcomm CR Rel-17 38.331 17.13.0 5408 - A NR\_pos-Core

[R2-2505326](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505326%20Correction%20on%20delivery%20of%20posSIB%20segments%20by%20dedicated%20siganling%20in%20RRC_CONNECTED_r18.docx) Correction on delivery of posSIB segments by dedicated siganling in RRC\_CONNECTED Huawei, HiSilicon, Ericsson, Qualcomm CR Rel-18 38.331 18.6.0 5409 - A NR\_pos-Core

* Revised in R2-2505640

[R2-2505640](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505640%20Correction%20on%20delivery%20of%20posSIB%20segments%20by%20dedicated%20siganling%20in%20RRC_CONNECTED_r18.docx) Correction to delivery of posSIB segments by dedicated signalling in RRC\_CONNECTED Huawei, HiSilicon, Ericsson, Qualcomm CR Rel-18 38.331 18.6.0 5409 1 A NR\_pos-Core R2-2505326

# 6 NR Rel-17

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

Tdoc Limitation: 4 Tdocs in total for agenda item 5 (incl. its sub agenda items) and agenda item 6 (incl. its sub agenda items)

## 6.3 NR positioning enhancements

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

# 7 Rel-18

## 7.0 Common

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

### 7.0.2 Rel-18 corrections

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

*Tdoc limitation: 5*

#### 7.0.2.19 Enhanced NR Sidelink Relay

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

[R2-2505356](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\38331_CR5413_(REL-18)_R2-2505356.docx) Correction on field description of sl-CapabilityInformationSidelink for U2U Relay OPPO CR Rel-18 38.331 18.6.0 5413 - F NR\_SL\_relay\_enh-Core

* Source to TSG to be added in coversheet
* ME to be ticked on coversheet
* Agreed with these changes as R2-2506309

Discussion:

Huawei note that the Source to TSG is missing on the coversheet.

Nokia note that the ME should be ticked on the coversheet.

[R2-2505543](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505543%20CR5422%20to%2038.331%20on%20SI%20reception%20for%20MP.docx) Correction to SI reception by remote UE for multi path LG Electronics Inc. CR Rel-18 38.331 18.6.0 5422 - F NR\_SL\_relay\_enh-Core

Discussion:

Ericsson assume we are not changing any of the behaviours for multi-path. Xiaomi agree with Ericsson. Apple also agree and think the new sentence is not needed.

* [AT131][404][Relay] SI reception for multi-path relay (LG)

Scope: Discuss the CR in R2-2505543 and determine if a change is needed.

Intended outcome: Agreeable CR if applicable in R2-2506310

Deadline: Wednesday 2025-08-27 1900 IST

[R2-2505760](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505760%20Corrections%20on%20N3C%20multi-path.doc) Corrections on N3C multi-path ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

* Noted

Discussion:

Xiaomi think on P1/P2, it is UE implementation and does not need to be specified.

Nokia think we previously discussed P7 and agreed option 1 (split is a prerequisite). Samsung have a different understanding and think we can have them independently; on P1/P2, they agree with Xiaomi.

OPPO agree that P1/P2 are not necessary; for P4/P5/P6 on the indication of the network capability, they think it is an optimisation.

Huawei think P3 to release the configuration during re-establishment is similar to other UAI configurations, so they have some sympathy, but they think the proposed change is NBC and nothing is broken without it.

Apple think P6 is not needed because N3C is handled by the UE implementation, but they think P4 is valid and some clarification of early detection would be useful. Xiaomi wonder if there can really be different understandings of P4. Huawei agree with Xiaomi and recall that we intended to leave the concept to UE implementation in the details.

Stage 2 CRs postponed from RAN2#130

[R2-2505183](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505183%20Correction%20to%20PDCP%20duplication%20description%20for%20L2%20MP%20using%20SL%20relay%20or%20N3C%20indirect%20path.docx) Correction to PDCP duplication description for L2 MP using SL relay or N3C indirect path Huawei, HiSilicon, Nokia (Rapporteur), CMCC CR Rel-18 38.300 18.6.0 0989 1 F NR\_SL\_relay\_enh-Core R2-2504002

Discussion:

LG think PDCP duplication for the multi-path split bearer is already described. Huawei agree that there is such a description, but in the PDCP duplication clause there is nothing on the multi-path scenario. Qualcomm think we could reference the existing clause instead of having more material here.

OPPO agree with LG and think it is already covered, and the stage 3 is also clear.

Xiaomi agree that it is already described and the CR is not necessary.

Ericsson do not have a strong concern but think the current description is in terms of DC rather than multi-path, so they see the CR as valid. Nokia agree with Ericsson and think the existing description is not clear in its applicability to multi-path.

Samsung support the CR.

Huawei indicate that a reader will know from the multi-path clause that PDCP duplication is supported, and the PDCP duplication clause does not by itself make this clear, but they could agree with Qualcomm’s suggestion to cross-reference. Ericsson think we should not just cross-reference, and we should exclude changing the stage 3.

* [AT131][405][Relay] PDCP duplication for multi-path (Huawei)

Scope: Check the CR in R2-2505183.

Intended outcome: Agreeable CR in R2-2506311

Deadline: Wednesday 2025-08-27 1900 IST

[R2-2505885](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505885%20-%2038.300_1020_Rel18_U2URelays_Bidirectional.docx) U2U Relays, Peer Remote UE Control Plane Procedures Ericsson CR Rel-18 38.300 18.6.0 1020 - F NR\_SL\_relay\_enh-Core

* Postponed

Discussion:

Xiaomi think these steps are not that specific and either UE can be in either role.

LG think bidirectionality is already included.

Qualcomm have a similar view to LG.

#### 7.0.2.21 Expanded and improved NR positioning

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

LS on startSFN and related contributions

[R2-2505014](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505014_R1-2504854.docx) Reply LS on startSFN for positioning SRS frequency hopping (R1-2504854; contact: ZTE) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2

* Noted

Discussion:

Lenovo have a related CR (R2-2505599), but it is aligned with the ZTE CR.

[R2-2506181](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506181%20Corrections%20on%20the%20startSFN%20of%20the%20UTW.docx) Corrections on the startSFN of the UTW ZTE Corporation, Ericsson, vivo, Qualcomm, Samsung, Nokia CR Rel-18 38.331 18.6.0 5464 - F NR\_pos\_enh2-Core

Discussion:

Lenovo think on the description of the UTW, it should refer to the starting slot rather than the current slot, and the description terminology should be consistent across different field descriptions.

CATT wonder if the formula is necessary (in RRC or anywhere else in RAN2 specs) once startSFN is removed.

Qualcomm note that we agreed to capture the formula, and they are not aware of it being captured in a RAN1 spec.

Ericsson think Lenovo’s concern can be checked, but they think the wording with the current slot is correct.

Huawei understand that the first slot is slot 0 plus the offset, and it repeats periodically; they see that the current description is just an easier way to capture this.

vivo support the current CR and think the UE calculates the correct frame based on the current formula.

Lenovo think there are other detailed issues that should be checked offline.

* [AT131][402][POS] CR on startSFN (ZTE)

Scope: Check the wording and details of the CR in R2-2506181 (can take into account also the related wordin gin R2-2505599).

Intended outcome: Agreed CR (without CB if possible) capturing the formula in accordance with previous agreements

Deadline: Wednesday 2025-08-27 1900 IST

SP SRS frequency hopping

[R2-2505323](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505323%20Discussion%20on%20SP-SRS%20frequency%20hopping_final.docx) Discussion on SP positioning SRS frequency hopping Huawei, HiSilicon, Ericsson discussion Rel-18 NR\_pos\_enh2-Core

[R2-2505266](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505266.docx) Correction to SP positioning SRS transmission with frequency hopping Ofinno CR Rel-18 38.321 18.6.0 2097 - F NR\_pos\_enh2-Core

Discussion (joint):

Ofinno clarify that they do not see a need to add a restriction on additional SP-SRS in the same BWP.

vivo support Huawei’s option and think there is no need to configure two SP-SRS in the same BWP.

Samsung note that there is no RAN1 agreement to have the restriction and think we should not decide this in RAN2 on our own; they prefer option 1 to introduce a new MAC CE, but they acknowledge that it would be a bigger spec impact.

ZTE agree that the restriction is not needed, and they note that a normal UE can be configured for legacy SRS and FH SP-SRS, so they think the Ofinno CR looks better; they do not think adding a new MAC CE would be desirable.

Ericsson think we should not bring in new MAC CEs that would require a capability. They note that RAN1 left it to RAN2 to capture the restriction, if any, and they support the Huawei CR.

Qualcomm wonder if the non-RedCap FH differences mean that this situation does not apply to non-RedCap UEs, and for RedCap UEs, multiple SP-SRS configurations may not be possible. So they do not see the need to avoid the restriction.

Lenovo think we should not open all the options that RAN1 discussed, and we should pick an option and inform RAN1.

Nokia think it is challenging to discuss in RAN2 a RAN1 feature where RAN1 could not decide, but they do not think RAN2 should introduce the restriction.

Xiaomi do not see a motivation to configure both SRS for the same BWP; they prefer Huawei’s solution but think the RRC impact is not needed.

Huawei understand that RAN1 delegated the choice to us and any option should be feasible from RAN1 perspective, so the question is how to support the feature with minimum spec impact.

Ofinno wonder why Huawei see their solution as having less impact; in both cases, the backward compatibility is similar, and option 2 does not touch the RRC.

Qualcomm think there are no backward compatibility issues because the dual-SRS feature does not exist; NRPPa cannot support it.

ZTE think from the gNB configuration perspective, the gNB can configure SRS via RRC and activate via the same MAC CE, but the FH can only be configured on a separate BWP, and the MAC CE can only activate one kind of SRS.

Ofinno have the same understanding as ZTE and think RAN1 did some work to handle the collision between FH SP-SRS and other SRS, so they think we would be surprising RAN1 if we took this decision.

vivo agree with Qualcomm’s interpretation and think if we limit to the bandwidth the UE can support, the network can only configure one SRS with FH to the UE and NRPPa cannot support the gNB configuring it with normal SRS.

Ericsson think it is a corner case for them to be configured together and RAN1 are not expecting that this would be done.

Qualcomm think the compatibility of the two SRS is a RAN2 issue, and they are not convinced there is a use case since the SRS are configured per positioning session and the request will never have two SRS configurations.

Lenovo think when we reply to RAN1 we should include RAN3.

Nokia understand that RAN1 have not actually sent us an LS and we are trying to adapt to their agreements without official guidance. Since the feature comes from RAN1 they would like to have an authoritative instruction from RAN1. Huawei think it is clear from the RAN1 summary that they mean to leave it to RAN2; vivo agree with Huawei and think it is totally in RAN2 scope.

Ofinno think companies agree that there is an issue, so we need to do something; they agree an LS would have been better, but we cannot leave the feature broken.

Nokia agree that RAN1 discussions left it to RAN2, but we have different understandings in the room about RAN1 status and whether two SRS configurations can coexist in this way.

vivo think we could use Qualcomm’s comment as a starting point and check whether the configuration exists.

Ofinno think option 2 does not break anything, even if the case that it leaves open is not used, while option 3 breaks something whose validity is contested. Qualcomm agree with this point but consider the spec impact to be less in option 3, and they would prefer to go with the simplest way.

Ericsson think even if the SRS can coexist, it is clear that the acceptable solution in the room is to have the restriction.

Qualcomm think this is clearly not a RAN1 issue; it is affecting the LMF.

Ofinno think we do not have a strong technical reason to go with option 3, but they can accept the majority view.

* [AT131][403][POS] SP-SRSp with frequency hopping (Huawei)

Scope: Draft agreeable CRs based on the TPs in R2-2505323.

Intended outcome: Agreeable CRs in R2-2506304 (MAC) / R2-2506305 (RRC).

Deadline: Wednesday 2025-08-27 1900 IST

Other stage 3 CRs

[R2-2505155](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505155_CR5398_38.331%20Correction%20on%20sidelink%20measurements%20based%20on%20SL-PRS.docx) Correction on NR Sidelink measurements based on SL-PRS vivo, Ericsson CR Rel-18 38.331 18.6.0 5398 - F NR\_pos\_enh2-Core

* Agreed

[R2-2505599](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505599%20Misc%20corrections%20NR%20positioning%20(Rel-18%2038331).docx) Miscellaneous corrections on NR positioning enhancements Lenovo CR Rel-18 38.331 18.6.0 5425 - F NR\_pos\_enh2-Core

* Changes 3, 4, and 5 on the coversheet are backed out
* Agreed with these changes are R2-2506306

[R2-2505600](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505600%20Misc%20corrections%20Aggregated%20positioning%20SRS%20MAC%20CE%20(Rel-18%2038321).docx) Miscellaneous corrections on Aggregated SP Positioning SRS Activation/Deactivation MAC CE Lenovo CR Rel-18 38.321 18.6.0 2107 - F NR\_pos\_enh2-Core

* Agreed

Discussion:

Huawei wonder if we could merge these changes into another CR. Lenovo think this is fine if we have another MAC CR. Huawei acknowledge that these changes are separate from other things we have discussed in the MAC.

[R2-2505896](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505896%20LPP%20timing.docx) Correction for timing Reporting Granularity Factor Ericsson CR Rel-18 37.355 18.5.0 0560 - F NR\_pos\_enh2-Core

* NOTE to be deleted
* Interoperability analysis to be corrected on the coversheet
* Agreed with these changes as R2-2506307

Discussion:

Xiaomi agree with the intention but think it could be handled with a NOTE.

ZTE also agree with the intention but think there is an internal contradiction between the NOTE and the field description text, and we should only keep one. Samsung have the same view and think the NOTE could be removed; they also note that the interoperability analysis is for the wrong CR.

Qualcomm think the existing spec is clear, but if some clarification is needed they would prefer to remove the NOTE, which is not idiomatic for LPP language. They think “configure” is the wrong verb.

Xiaomi can accept deleting the NOTE.

[R2-2506027](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506027%20Correction%20regarding%20SL-PRS%20Resource%20Request.docx) Correction regarding SL-PRS Resource Request ASUSTeK CR Rel-18 38.321 18.6.0 2112 - F NR\_pos\_enh2-Core

* Resource request cancellation to appear in both the Uu and PC5 reset lists
* Agreed with this change as R2-2506308

Discussion:

vivo agree with the second change but think the first change is not needed; they believe the spec is correct and the agreement may have a typo.

Samsung understand that the SL-PRS MAC CE is similar to the SL BSR, and they think both MAC resets should trigger the behaviour. vivo do not understand why it would be in the PC5 list; ASUSTeK understand this is because the SL-PRS is per destination, and when the MAC resets for a destination the corresponding SL-PRS is no longer needed.

Huawei are fine with the second change, and on the first, if the connection is released they see no need to keep the SL-PRS, so they are fine with ASUSTeK’s proposal; for the Uu MAC reset, they think you should cancel everything, so they think it belongs in both places.

vivo are OK with Samsung’s proposal.

ZTE think for the second change, the original wording is not wrong, just unnecessary. They note that the MAC wording follows the RRC signalling structure.

Stage 2 CRs

[R2-2505124](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505124%20Corrections%20on%20LPHAP,%20carrier%20phase,%20bandwidth%20aggregation%20and%20frequency%20hopping%20for%20positioning.docx) Corrections on LPHAP, carrier phase, bandwidth aggregation and frequency hopping for positioning CATT, Ericsson, Nokia, ZTE Corporation CR Rel-18 38.305 18.6.0 0187 2 F NR\_pos\_enh2-Core R2-2504883

[R2-2505848](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505848%20Removal%20of%20stage2%20description%20(Rel-17%2038305).docx) Removal of description for positioning in RRC\_INACTIVE state Lenovo CR Rel-17 38.305 17.8.0 0193 - F NR\_pos\_enh-Core

[R2-2505849](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505849%20Removal%20of%20stage2%20descriptions%20(Rel-18%2038305).docx) Removal of descriptions for positioning in RRC\_INACTIVE and RRC\_IDLE state Lenovo CR Rel-18 38.305 18.6.0 0194 - F NR\_pos\_enh2-Core

Withdrawn/Not available

[R2-2505589](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505589%20Corrections%20on%20the%20startSFN%20of%20the%20UTW.docx) Corrections on the startSFN of the UTW ZTE Corporation, Ericsson, vivo, Qualcomm, Samsung, Nokia CR Rel-18 38.331 18.6.0 5424 - F NR\_pos\_enh2-Core Withdrawn

* Withdrawn

# 8 Rel-19

## 8.0 General

### 8.0.0 In-principle agreed CRs

This AI is reserved for Rel-19 in-principle agreed CRs that need to be formally agreed

[R2-2505317](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505317%20Introudction%20of%20the%20control%20parameters%20for%20on-demand%20posSIB%20request_RRC%20%5bOdPosSIB-Req%5d.docx) Introduction of control parameters for on-demand posSIB request [OdPosSIB-Req] Huawei, HiSilicon, Ericsson, Samsung CR Rel-19 38.331 18.6.0 5406 - B TEI19

[R2-2505318](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505318%20Introudction%20of%20the%20control%20parameters%20for%20on-demand%20posSIB%20request_UEcapa%20%5bOdPosSIB-Req%5d.docx) Introduction of control parameters for on-demand posSIB request [OdPosSIB-Req] Huawei, HiSilicon, Ericsson, Samsung CR Rel-19 38.306 18.6.0 1323 - B TEI19

[R2-2505319](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505319%20Introudction%20of%20the%20control%20parameters%20for%20on-demand%20posSIB%20request_300%20%5bOdPosSIB-Req%5d.docx) Introduction of control parameters for on-demand posSIB request [OdPosSIB-Req] Huawei, HiSilicon, Ericsson, Samsung CR Rel-19 38.300 18.6.0 1009 - B TEI19

[R2-2505320](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505320%20Introudction%20of%20the%20control%20parameters%20for%20on-demand%20posSIB%20request_305%20%5bOdPosSIB-Req%5d.docx) Introduction of control parameters for on-demand posSIB request [OdPosSIB-Req] Huawei, HiSilicon, Ericsson, Samsung CR Rel-19 38.305 18.6.0 0191 - B TEI19

## 8.13 NR sidelink multi-hop relay

(NR\_SL\_relay\_multihop; leading WG: RAN2; REL-19; WID: [RP-250188](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_107/Docs/RP-250188.zip))

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.13.1 Organizational

LSs and rapporteur input, including workplan, etc.

Including outcomes of email discussions on running CRs

Running CRs and open issue lists

[R2-2505353](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\38351_CR0041_(REL-19)_R2-2505353%20-%20Introduction%20of%20NR%20sidelink%20multi-hop%20relay%20in%20TS%2038.351.docx) Introduction of NR sidelink multi-hop relay in TS 38.351 OPPO CR Rel-19 38.351 18.4.0 0041 - B NR\_SL\_relay\_multihop-Core

* Endorsed (for further changes this meeting)

[R2-2505354](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505354%20-%20SRAP%20open%20issues%20for%20NR%20sidelink%20multi-hop%20relay_V02_Rapp.docx) SRAP open issues for NR sidelink multi-hop relay OPPO other Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2505427](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\38.321_CR2101_Rel-19_R2-2505427_FeatureIntroduction.docx) Introduction of NR Sidelink Multi-hop Relay InterDigital France R&D, SAS CR Rel-19 38.321 18.6.0 2101 - B NR\_SL\_relay\_multihop-Core

* Endorsed (for further changes this meeting)

[R2-2505621](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505621%20Introduction%20of%20NR%20sidelink%20multi-hop%20U2N%20relay%20in%20TS%2038.300.docx) Introduction of NR sidelink multi-hop U2N relay in TS 38.300 LG Electronics Inc. draftCR Rel-19 38.300 18.6.0 NR\_SL\_relay\_multihop

* Endorsed (for further changes this meeting)

[R2-2505714](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505714%20RRC%20CR%20for%20R19%20Multihop_SL_Relay.docx) Introduction of NR sidelink multi-hop relay in TS 38.331 Huawei, HiSilicon CR Rel-19 38.331 18.6.0 5429 - B NR\_SL\_relay\_multihop-Core

* Endorsed (for further changes this meeting)

[R2-2505432](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505432%20Open%20issues%20for%20Multi%20hop%20Sidelink%20Relay%20in%20TS%2038.331.docx) Open issues for Multi hop Sidelink Relay in TS 38.331 Huawei, HiSilicon discussion Rel-19 38.331 NR\_SL\_relay\_multihop-Core

Proposal 1: Introduce sl-L2U2N-MH-Relay for indicating the support of NR sidelink Layer-2 U2N multi hop relay operation in SIB 12. Status: Closed.

Proposal 2: Introduce capabilities for R19 e.g. relayUE-MH-Operation-L2-r19 and remoteUE-MH-Operation-L2-r19 in SidelinkParameters IE. Status: Closed.

Proposal 3: Update TS 38.331, Section 3.1, to include the following clarification in the definitions of Intermediate U2N Relay UE and First Relay UE:

“An Intermediate U2N Relay UE first establishes a connection to the network as a U2N Remote UE, before beginning to relay traffic for connected U2N Remote UEs.”

Proposal 4: Confirm that the Remote UE can request the SFN-DFN offset from the connected parent Relay UE and that the SFN-DFN offset provided at the L2 U2N Relay UE or the L2 Last U2N Relay UE can be forwarded by intermediate U2N Relay UEs within the multihop relay chain, as proposed in the current running CR.

Proposal 5 – RAN 2 should discuss if there are any parameter not visible to AS layer that could change and would affect reselection and force the remote UE to be notified.

Proposal 6 – RAN2 to confirm that the Intermediate Relay UE sets the indication type to a specific value, relayUE-RelayReselection, to clearly signal that the notification is triggered by its own reselection action, which follows a notification of AS failure received from its parent relay UE.

Proposal 7 – RAN2 to discuss if we need to further fine tune the timers value calculation for the multihop scenario.

Proposal 8 – RAN2 should clarify in TS 38.300 or TS 38.331 that, for Scenario C and Scenario D, the Remote UE shall report only Relay UEs in RRC\_CONNECTED state for path switching, based on the Relay State indication received in the discovery message RRC container.

Proposal 9 – RAN2 confirms that the existing note, stating that the Remote UE may prioritize selecting/reselecting a suitable Relay UE that is in the RRC\_CONNECTED state based on RRC state information included in the Discovery Message container, is retained in the running CR.

[R2-2505796](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505796%20-%2038323%20CR%200150%20for%20R19%20SL%20Relay.docx) Introduction of multi-hop U2N relay in TS 38.323 Ericsson CR Rel-19 38.323 18.5.0 0150 - B NR\_SL\_relay\_multihop

* Endorsed (for further changes this meeting)

[R2-2506047](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506047.docx) Introduction of multi-hop U2N relay in TS 38.304 MediaTek Inc. CR Rel-19 38.304 18.4.0 0444 - B NR\_SL\_relay\_multihop-Core

* Endorsed (for further changes this meeting)

UE capabilities

[R2-2505771](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505771_%5bPost130%5d%5b401%5d%5bRelay%5d%20Rel-19%20relay%20capability(Samsung)_v8.docx) Summary on [Post130][401][Relay] Rel-19 relay capability Samsung discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 1: FFS on capability differentiation between last relay UE and intermediate relay UE. If the differentiation is needed, RAN2 is kindly asked to discuss how to define two capabilities based on the following two options:

 Option 1: define two new capabilities, LastRelayUE-MH-Operation-L2, and IntermediateRelayUE-MH-Operation-L2, where the remoteUE-MH-Operation-L2 is the prerequisite of IntermediateRelayUE-MH-Operation-L2;

 Option 2: keep relayUE-MH-Operation-L2 for both last relay UE and intermediate relay UE, while for intermediate relay UE, the remoteUE-MH-Operation-L2 also indicates.

Proposal 2: In Rel-19, the new band combination capability for multi-hop relay discovery is not needed.

Proposal 3: In Rel-19, the new path switch capability for multi-hop relay is not needed.

Proposal 4: In Rel-19, the L3 relay capability for multi-hop relay is not needed.

[R2-2505772](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505772_MHSLRelayCap_CR_v0_Rapp.docx) Introduction of multi-hop sidelink relay capability Samsung CR Rel-19 38.306 18.6.0 1334 - B NR\_SL\_relay\_multihop-Core

Withdrawn/Not available

R2-2505431 Introduction of NR sidelink multi-hop relay in TS 38.331 Huawei, HiSilicon draftCR Rel-19 38.331 18.6.0 F NR\_SL\_relay\_multihop-Core Withdrawn

* Withdrawn

### 8.13.2 Relay discovery and (re)selection

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

RRC-5/RRC-12: notification and cause code

[R2-2505085](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505085_(RRC-5%2011%2012)%20Notification%20message%20handling%20for%20intermediate%20relay%20UE.docx) (RRC-5/11/12) Notification message handling for intermediate relay UE vivo discussion Rel-19

Proposal 1: (RRC-5/12) When an intermediate relay UE receives a NotificationMessageSidelink message from the parent relay, it forward a copy of the original notification (with the same cause) to its child UEs.

Proposal 2: (RRC-5/12) When intermediate relay UE detects PC5 RLF, it should set the cause value to ‘relayUE-PC5-RLF’ to its child UE.

[R2-2505418](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505418%20(R19%20SL%20Relay%20WI_AI8132%20RelayDiscoverySelection).doc) Open Issues on Discovery and Relay (Re)Selection for Multi-hop U2N Relays InterDigital discussion Rel-19 NR\_SL\_relay\_multihop

Proposal 5: In case of notification message triggered by an error (e.g., RLF) the intermediate relay UE can send cell/relay reselection cause value to the remote UE in RRC\_IDLE/INACTIVE if it successfully performs a recovery action. Otherwise, it sends relayUE-PC5-RLF cause value if PC5 RLF is detected by itself or the same cause value received in the notification message from the parent node.

Proposal 6: In case of notification message triggered by an error (e.g., RLF), the intermediate relay UE sends relayUE-PC5-RLF cause value if PC5 RLF is detected by itself or the same cause value as received by the parent node in the notification message to an RRC\_CONNECTED remote UE.

RRC-11: notifications in idle/inactive

[R2-2505773](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505773_RelayDisc&Resel_v0.0.docx) Discussion on remaining issues of relay discovery and (re)selection Samsung discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 5: RAN2 is kindly asked agree that the intermediate relay UE in RRC\_IDLE/INACTIVE can omit the notification message transmission if the relay reselection does not cause the change of the hop count or serving cell.

RRC-6: model B without PC5 link

[R2-2505174](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505174%20Discussion%20on%20Multi-hop%20Discovery%20and%20(Re)selection.docx) Discussion on Multi-hop Discovery and (Re)selection CATT discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 2: (RRC-6) RAN2 confirms that the case for the last relay UE to check AS conditions before responding to intermediate relay UE’s discovery model B request is valid and the corresponding FFS can be deleted without further handling.

Proposal 3: In case the Last Relay UE needs to decide whether to send a discovery response message to the Intermediate Relay UE, RAN2 introduces a separate SD-RSRP threshold similar as the threshold used by the Intermediate Relay UE to determine whether to forward the solicitation message be applied.

WA on state information in discovery message

Discussed jointly

[R2-2505616](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505616-Discussion%20on%20discovery%20and%20relay%20reselection%20for%20multi-hop%20U2N%20relay.docx) Discussion on discovery and relay reselection for multi-hop U2N relay LG Electronics Inc. discussion Rel-19 NR\_SL\_relay\_multihop

Proposal 8: Including the RRC state in the discovery message looks like a useless enhancement for the following reasons:

- The RRC state of the intermediate Relay UEs can be changed at any time. In other words, it’s not a deterministic value.

- If the RRC state of only the first Relay UE is included in the discovery message, the Remote UE cannot differentiate which path has many RRC\_CONNECTED intermediate Relay UEs.

- It is up to Remote UE’s implementation whether the RRC state information of the intermediate Relay UEs used for the relay (re)selection (i.e., it’s not an essential element for fast relay (re)selection).

- Regardless of the RRC state of the intermediate Relay UEs, the Remote UE can try connection establishment.

Proposal 9: If there exist clear reasons that the RRC states of the intermediate Relay UEs should be included in the Discovery message, we support including the RRC state of the only first Relay UE in the announcement message in the Discovery model A and the response message in the Discovery model B.

Proposal 10: If there exist clear reasons that the RRC states of the intermediate Relay UEs should be included in the Discovery message, it will be an optional feature (it's not an essential one).

[R2-2505844](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505844_relay_reselection.docx) Relay reselection and discovery under multihop relay Kyocera discussion

Proposal 6 Confirm the working assumption that Relay UE includes an indication of whether it is RRC\_CONNECTED in the discovery message RRC container.

Potential SA2 interaction (both documents moved from AI 8.13.3)

[R2-2505932](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505932_U2NRRCContainer.docx) Feasibility of Including RRC State Information through RRC Container in Discovery Messages for L2 Multi-hop U2N Relay NIST discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal: RAN2 is kindly asked to discuss the three options for the intermediate relay to handle the RRC container in the discovery messages, taking into account the difference between Model A and Model B based solutions as pointed out in the Observation. Inform SA2 if needed

[R2-2506044](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506044.docx) Ensure L2 Multi-hop U2N relay operation conditions Qualcomm Incorporated discussion NR\_SL\_relay\_multihop-Core

Proposal 1 If the intermediate Relay UE has established PC5 connection for one RSC associated with one last Relay UE, the intermediate Relay UE does not transmit other RSC(s) in any discovery message.

Proposal 2 RAN2 discusses the two options for the case whether a UE has established connection via direct path can be act as an intermediate Relay UE.

Option 1: The intermediate Relay UE performs path switch from direct path to indirect path when receiving relay request from the Remote UE/child UE.

Option 2: The Relay UE does not forward discovery message received from a relay UE, that means the UE cannot be an intermediate Relay UE.

Proposal 3 Sends LS to SA2 to on the above two proposals.

Other contributions

[R2-2505100](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505100%20Discussion%20on%20Relay%20discovery%20and%20(re)selection.doc) Discussion on Relay discovery and (re)selection ZTE Corporation, Sanechips discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2505341](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505341%20-%20Discovery%20and%20relay%20(re)selection%20for%20multi-hop%20U2N%20relay.docx) Discovery and relay (re)selection for multi-hop U2N relay OPPO discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2505433](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505433%20Relay%20discovery%20and%20(re)selection%20for%20multi-hop%20Relay.docx) Relay discovery and (re)selection for multi-hop Relay Huawei, HiSilicon discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2505450](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505450%20Discussion%20on%20relay%20discovery%20and%20reselection.docx) Discusison on Remaining issue on relay discovery and reselection Apple discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2505662](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505662.docx) Multi-hop relay selection/re-selection Sony discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2505697](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505697%20Discussion%20on%20notification%20message%20v1.0.doc) Discussion on notification message Lenovo discussion Rel-19

[R2-2505732](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505732_Discovery%20(Model-B)%20forwarding%20thresholds%20for%20multi-hop%20U2N%20relay.docx) Discovery (Model-B) forwarding thresholds for multi-hop U2N relay Jio Platforms Limited CR Rel-19 38.331 18.6.0 5431 - B NR\_SL\_relay\_multihop

[R2-2505795](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505795%20-%20discussion%20on%20discovery%20and%20relay%20(re)selection.docx) Discussion on relay discovery and relay (re)selection Ericsson discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2506019](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506019-MH-reselection.docx) Remaining issues and solutions on Relay discovery and (re)selection for multi-hop relay Sharp discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2506036](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506036%20Discussion%20on%20remaining%20issues%20on%20notification%20message.docx) Discussion on remaining issues on notification message ASUSTeK discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2506043](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506043-Open%20issues%20on%20relay%20discovery%20and%20(re)selection.docx) Open issues on relay discovery and (re)selection Qualcomm Incorporated discussion NR\_SL\_relay\_multihop-Core

[R2-2506165](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Docs\R2-2506165.zip) Relay (re)selection in multi-hop Relay TOYOTA Info Technology Center discussion Rel-19

### 8.13.3 Control Plane Procedures and SRAP impact

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

RRC-10: SFN-DFN offset

[R2-2505698](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505698.doc) Passing the SFN-DFN offset in multi-hop scenario Lenovo discussion Rel-19

Proposal 1(RRC-10): support passing the SFN-DFN offset at the L2 U2N Relay UE or at the L2 Last U2N Relay UE in a multi-hop scenario.

Proposal 2(RRC-10): the intermediate relay UE sets sfn-DFN-OffsetSupported to supported once the intermediate relay UE obtains the SFN-DFN offset from the connected parent relay UE if the previous setting is absent.

[R2-2505127](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505127%20Remaining%20issues%20for%20Multi-hop%20Relay.docx) Remaining issues for Multi-hop Relay NEC discussion Rel-19 NR\_SL\_relay\_multihop

Proposal-1[RRC-10]: When the Remote UE requests the SFN-DFN offset from the connected parent Relay UE, the SFN-DFN offset provided at the L2 U2N Relay UE or the L2 Last U2N Relay UE should be compensated by the timing offset between the UEs when it is forwarded by intermediate U2N Relay UEs within the multi-hop relay chain.

RRC-13: timers

[R2-2505434](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505434%20Control%20plane%20procedures%20for%20multi-hop%20relay.docx) Control plane procedures for multi-hop relay Huawei, HiSilicon discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 5: Extend the T300, T301 and T319 timer for multi-hop U2N relay operation in accordance with the hop count for connection establishment/ re-establishment and resume procedure by either

• Multiplying the UE-TimersAndConstants with the hop count ( eg t300 \* hop count) that includes only the Uu hop count; or

• Introducing PC5-specific timers (t300-PC5/t301-PC5/t319-PC5) and calculating the timer value as t300 + t300-PC5\*n, where n is the number of PC5 hops and one Uu hop is included.

Paging issues

[R2-2505175](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505175%20Discussion%20on%20the%20Control%20Plane%20Procedures.docx) Discussion on the Control Plane Procedures CATT discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 1: Once the intermediate relay UE enters into RRC\_CONNECTED mode, it should release the paging-related information in the parent for its child UEs if there is any.

Proposal 2: When Last Relay UE in RRC CONNECTED and L2 Remote UE(s) or Intermediate Relay UE(s) in RRC\_IDLE/RRC\_INACTIVE, the Last Relay UE can monitor PO on behalf of each RRC\_IDLE/RRC\_INACTIVE intermediate relay UE or remote UE connected to it via multi-hop if the active DL BWP of Last Relay UE is configured with common CORESET and common search space.

Multi-hop QoS

[R2-2506020](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506020-MH-Cplane.docx) Remaining issues and solutions on C-plane procedure for multi-hop relay Sharp discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 6. QoS related optimization should be considered since very low E2E latency is required for some use cases.

Proposal 7. The principles of resource allocation follow the legacy mechanism, i.e., last relay can be configured with mode 1 resource allocation, and remote UE and other relay UEs are configured with mode 2 resource allocation.

Proposal 8. UE reports hop-by-hop link quality to gNB for path selection and split QoS configuration.

RLC channel configuration

[R2-2505451](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505451%20Discussion%20on%20remaining%20issues%20on%20UP%20and%20CP.docx) Discusison on Remaining UP and CP issues for multi-hop U2N relay Apple discussion Rel-19 NR\_SL\_relay\_multihop

Proposal 1 RAN2 discuss whether each SL-RLC Channel configuration in sl-ConfigDedicatedNR for Intermediate relay UE is to be established in all N+1 PC5-RRC connections (N child node, 1 parent node). If not, what would be the correct UE behaviour in Rel-19.

SRAP-1: reflective bearer mapping

[R2-2505102](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505102%20Discussion%20on%20Reflective%20Bearer%20mapping%20of%20SL%20relay.doc) Discussion on Reflective Bearer mapping of SL relay ZTE Corporation, Sanechips, Ericsson, Apple, Nokia discussion Rel-19 NR\_SL\_relay\_multihop

Proposal 1. (SRAP-1)Re-use legacy remote UE add/mod/release list to configure indirect remote UE’s SRAP configuration in intermediate relay UE.

Proposal 2. (SRAP-1)RAN2 to downselect the two options:

Option 1 - reflective bearer mapping is mandatory supported for indirectly connected child, no new field is needed to be included(TP in 4.2.1).

Option 2 - reflective bearer mapping is optional, we need to include a new field sl-DLNextHop-L2Identity-r19 in SRAP configuration, based on absence or presence of the field, it is indicated that the intermediate relay UE shall apply reflective bearer mapping or not(TP in 4.1 and 4.2.2).

* [AT131][406][Relay] TP on reflective bearer mapping (ZTE)

Scope: F2F offline to check the TP from R2-2505102 for correctness/completeness.

Intended outcome: Report to Wednesday relay session in R2-2506312

Schedule: Tuesday 1030-1100 In Brk3

Deadline: Tuesday 2025-08-27 1900 IST

Fast failover proposal

[R2-2505726](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505726_Fast%20failover%20via%20pre‑configured%20egress%20candidate%20list%20for%20multi‑hop%20L2%20U2N%20relay.docx) Fast failover via pre-configured egress candidate list for multi-hop L2 U2N relay Jio Platforms Limited CR Rel-19 38.331 18.6.0 5430 - B NR\_SL\_relay\_multihop

Other contributions

[R2-2505086](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505086_(SRAP-1%20RRC-13)%20Discussion%20on%20SRAP%20configuration%20and%20timer%20extension%20in%20multi-hop%20relay.docx) (SRAP-1/RRC-13) Discussion on SRAP configuration and timer extension in multi-hop relay vivo discussion Rel-19

[R2-2505101](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505101%20Discussion%20on%20paging%20for%20multi-hop%20relay.doc) Discussion on paging for multi-hop relay ZTE Corporation, Sanechips discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2505342](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505342%20-%20SRAP%20configuration%20for%20multi-hop%20U2N%20Relay.docx) SRAP configuration for multi-hop U2N Relay OPPO discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2505343](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505343%20-%20Control%20plane%20procedures%20of%20multi-hop%20U2N%20relay.docx) Control plane procedures of multi-hop U2N relay OPPO discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2505419](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505419%20(R19%20SL%20Relay%20WI_AI8133_CP).doc) Remaining Issues on Control Plane for Multi-Hop U2N Relays InterDigital discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2505617](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505617.doc) Remaining issues on control plane procedure for SL relay KT Corp. discussion

[R2-2505618](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505618-Discussion%20on%20the%20control%20plane%20procedure%20for%20multi-hop%20U2N%20relay.docx) Discussion on the control plane procedure for multi-hop U2N relay LG Electronics Inc. discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2505759](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505759%20Discussion%20on%20control%20plane%20procedures%20for%20multi-hop%20SL%20Relay.doc) Discussion on control plane procedures for multi-hop SL Relay ZTE Corporation, Sanechips discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2505774](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505774_CP_v0.0.docx) Discussion on remaining issues of MH SL relay control plane procedures Samsung discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2505775](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505775%20Outstanding%20issues%20related%20to%20MH%20SRAP%20design.docx) Outstanding issues related to MH SRAP design Samsung R&D Institute UK discussion

[R2-2505794](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505794%20-%20discussion%20on%20control%20plane%20procedure.docx) Discussion on control plane procedures Ericsson discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2505927](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505927%20On%20SFN%20DFN%20offset%20and%20time%20sensitive%20applications.docx) On SFN DFN offset and time sensitive applications Nokia discussion NR\_SL\_relay\_multihop

[R2-2506037](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506037%20Missing%20Intermediate%20U2N%20Relay%20UE%20behaviours%20upon%20sidelink%20radio%20link%20failure.docx) Missing Intermediate U2N Relay UE behaviours upon sidelink radio link failure ASUSTeK discussion Rel-19 38.331 NR\_SL\_relay\_multihop

* Revised in R2-2506199

[R2-2506199](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506199%20Missing%20Intermediate%20U2N%20Relay%20UE%20behaviours%20upon%20sidelink%20radio%20link%20failure.docx) Missing Intermediate U2N Relay UE behaviours upon sidelink radio link failure ASUSTeK discussion Rel-19 38.331 NR\_SL\_relay\_multihop

### 8.13.4 Service continuity

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

RRC-14: reporting of target relays

[R2-2505797](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505797%20-%20Intra%20gNB%20Service%20Continuity%20for%20Multihop%20Relays.docx) Service Continuity for Multi-Hop Relays Ericsson discussion Rel-19 NR\_SL\_relay\_multihop

Proposal 1 To discuss whether the agreements on RRC state of (first)intermediate/last Relay UE need to be captured in spec or can be up to gNB’s implementation to handle.

Multi-hop reporting and inter-gNB cases

[R2-2505435](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505435%20Discussion%20on%20service%20continuity%20for%20Multi-hop%20Relay.docx) Discussion on service continuity for Multi-hop Relay Huawei, HiSilicon discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 4: The remote UE can obtain the sidelink measurement quantity information between each adjacent relay UEs along the candidate multi-hop relaying path to help determining a better target path. This information can be provided by the first relay UE in the discovery message.

Proposal 5: Either the serving gNB shall only allow inter-gNB path switching from indirect (single-hop) to indirect (single-hop) paths for Rel-18 UEs, or RAN2 shall consider adding an indication in the measurement report to specify whether the candidate Relay UE is on a single-hop or multi-hop target path, or to provide the hop count information.

[R2-2506021](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506021-MH-ServiceContinuity.docx) Remaining issues and solutions on service continuity for multi-hop relay Sharp discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 5. The cellIdentity in sl-MeasResultRelay without enhancement can be used for decision whether the candidate first relay UE is connecting with the same gNB.

Path switch for relay UE

[R2-2506045](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2506045.docx) Service continuity discussion Qualcomm Incorporated discussion NR\_SL\_relay\_multihop-Core

Proposal 2 The intermediate Relay UE can report measurement report UE to gNB for path switching to direct path or indirect path acting as a Remote.

Proposal 3 When the intermediate Relay UE performs path switching to direct path or indirect path, the intermediate Relay UE informs the Remote UE via the child intermediate relay UE with release cause 'RRC connection failure'.

Proposal 4 When the Remote UE receives notification from the relay UE, the Remote UE should go back to IDLE.

Other contributions

[R2-2505087](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505087_(RRC-14)%20Reporting%20of%20Target%20Relay%20UEs%20for%20scenario%20C%20and%20D.docx) (RRC-14) Reporting of Target Relay UEs for scenario C and D vivo discussion Rel-19

[R2-2505176](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505176%20Intra-gNB%20Service%20Continuity%20for%20Multi-hop%20U2N%20Relay.docx) Intra-gNB Service Continuity for Multi-hop U2N Relay CATT discussion Rel-19 NR\_SL\_relay\_multihop-Core

## 8.15 NavIC L1 SPS A-GNSS support

(LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core; leading WG: RAN2; REL-19; WID [RP-251552](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_108/Docs/RP-251552.zip)

Time budget: 0 TU

Tdoc Limitation: 1 tdoc

[R2-2505776](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505776_(SSR%20Orbit-Clock%20Corrections%20Set%202).docx) Missing Capabilities for SSR Orbit/Clock Corrections Set2 Qualcomm Incorporated discussion

[R2-2505720](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505720%20NR.docx) Introduction of NavIC L1 SPS A-GNSS in NR Stage 2 specification Ericsson, Reliance Jio, ISRO, MediaTek Inc., CEWiT, Huawei CR Rel-19 38.305 18.6.0 0179 2 B LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core R2-2504298

[R2-2505721](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505721%20LTE.docx) Introduction of NavIC L1 SPS A-GNSS in LTE Stage 2 specification Ericsson, Reliance Jio, ISRO, MediaTek Inc., CEWiT, Huawei CR Rel-19 36.305 18.0.0 0120 2 B LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core R2-2504299

[R2-2505722](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505722%20LPPNaVIC.docx) Introduction of NavIC L1 SPS A-GNSS in LPP Ericsson, Reliance Jio, ISRO, MediaTek Inc., CEWiT, Huawei CR Rel-19 37.355 18.5.0 0532 5 B LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core R2-2504893

## 8.16 BDS B2b in A-GNSS

LCS\_BDS\_B2b\_LTE\_NR; leading WG: RAN2; REL-19; WID [RP-250767](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_107/Docs/RP-250767.zip))

Time budget: 0 TU

Tdoc Limitation: 1 tdoc

[R2-2505094](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505094%20Introduction%20of%20B2b%20signal%20in%20BDS%20system%20in%20A-GNSS_37355_CR0545r2_(Rel-19)_rev%20of%20R2-2501435.docx) Introduction of B2b signal in BDS system in A-GNSS CAICT, CATT, CMCC, China Telecome, China Unicom, Ericsson, Huawei, HiSilicon, Lenovo, OPPO, vivo, Xiaomi, ZTE, MediaTek Inc, Qualcomm Incorporated CR Rel-19 37.355 18.5.0 0545 2 B LCS\_BDS\_B2b\_LTE\_NR-Core R2-2501435

[R2-2505095](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505095%20Introduction%20of%20BDS%20B2b%20in%20A-GNSS_CR0121r1_(Rel-19)_rev%20of%20R2-2410158.docx) Introduction of BDS B2b in A-GNSS CAICT, CATT, CMCC, China Telecome, China Unicom, Ericsson, Huawei, HiSilicon, Lenovo, OPPO, vivo, Xiaomi, ZTE CR Rel-19 36.305 18.0.0 0121 1 B LCS\_BDS\_B2b\_LTE\_NR-Core R2-2410158

[R2-2505096](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505096%20Introduction%20of%20BDS%20B2b%20in%20A-GNSS_CR0180r1_(Rel-19)_rev%20of%20R2-2410159.docx) Introduction of BDS B2b in A-GNSS for TS 38305 CAICT, CATT, CMCC, China Telecome, China Unicom, Ericsson, Huawei, HiSilicon, Lenovo, OPPO, vivo, Xiaomi, ZTE CR Rel-19 38.305 18.6.0 0180 1 B LCS\_BDS\_B2b\_LTE\_NR-Core R2-2410159

## 8.19 TEI19

Time budget: 1 TU

Tdoc Limitation: 1 tdoc for new proposals and 1 tdoc for old proposals for RAN2-led.

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

Companies are encouraged to submit co-sourced contributions, which will have priority for discussion in RAN2#130

### 8.19.1 RAN2-led

Periodic assistance data for integrity service alert (new)

[R2-2505321](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505321%20Introduction%20of%20periodic%20delivery%20of%20NR%20integrity%20service%20alert%20%5bIntegrityPeriodicAD%5dlpp.docx) Introduction of periodic AD for NR integrity service alert [IntegrityPeriodicAD] Huawei, HiSilicon, Ericsson, Vivo CR Rel-19 37.355 18.5.0 0558 - B TEI19

[R2-2505322](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505322%20Introduction%20of%20periodic%20delivery%20of%20NR%20integrity%20service%20alert%20%5bIntegrityPeriodicAD%5dstage2.docx) Introduction of periodic delivery of NR integrity service alert [IntegrityPeriodicAD] Huawei, HiSilicon, Ericsson, VIVO CR Rel-19 38.305 18.6.0 0192 - B TEI19

* Revised in R2-2505676

[R2-2505676](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505676%20Introduction%20of%20periodic%20delivery%20of%20NR%20integrity%20service%20alert%20%5bIntegrityPeriodicAD%5dstage2.docx) Correction on the periodic AD of NR integrity service alert [IntegrityPeriodicAD] Huawei, HiSilicon, Ericsson, Vivo CR Rel-19 38.305 18.6.0 0192 1 B TEI19 R2-2505322

Equal integer ambiguity level assistance data (postponed from RAN2#130)

[R2-2505840](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505840%20TEI19_RTKequalIntegerAmbiguityLevel.docx) UE request for equalIntegerAmbiguityLevel assistance data [GNSS-EqualIntegerAmbiguity] AT&T, Ericsson, Huawei, CATT, Samsung, ZTE Corporation, Nokia, Deutsche Telekom CR Rel-19 37.355 18.5.0 0557 1 B TEI19 R2-2504306

### 8.19.2 Other WG-led

SRS frequency hopping ofr non-RedCap UE (CRs endorsed at RAN2#130)

[R2-2505032](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505032_R3-253749.docx) Reply LS on non-RedCap UE UL SRS frequency hopping for positioning (R3-253749; contact: ZTE) RAN3 LS in Rel-19 TEI19 To:RAN1, RAN2

[R2-2505594](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505594%20Introduction%20of%20UE%20capability%20for%20SRS%20frequency%20hopping%20for%20non-RedCap%20UE%20in%2037355%20%5bPos_SRSHop%5d.docx) Introduction of UE capability for SRS frequency hopping for non-RedCap UE in 37355 [Pos\_SRSHop] ZTE Corporation CR Rel-19 37.355 18.5.0 0553 1 B TEI19 R2-2503877

[R2-2505595](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202508%20-%20RAN2_131,%20Bengaluru\Extracts\R2-2505595%20Introduction%20on%20the%20SRS%20frequency%20hopping%20for%20non-RedCap%20UE%20in%2038331%20%5bPos_SRSHop%5d.docx) Introduction on the SRS frequency hopping for non-RedCap UE in 38331 [Pos\_SRSHop] ZTE Corporation, Ericsson CR Rel-19 38.331 18.6.0 5290 2 B TEI19 R2-2503878