3GPP TSG-RAN WG2 Meeting #121bis-e R2-23xxxxxx

Online, 17-26 April 2023

Source: Session Chair (MediaTek)

Title: Report from session on positioning and sidelink relay

# Status of At-Meeting Email Discussions

This subclause is not an Agenda Item. It contains a running summary of the email discussions assigned to take place during the meeting weeks. This section will be moved to an appendix in the final version of the report.

* [AT121bis-e][400][POS][Relay] Organisational Nathan – Positioning/Relay (MediaTek)

Scope: Organisational discussions and announcements, as needed throughout the meeting weeks

Intended outcome: Well-informed participants

Deadline: Wednesday 2023-04-26 1000 UTC

* [AT121bis-e][407][POS] LTE positioning corrections (CATT)

Scope: Check the CRs in agenda item 4.4: R2-2302625 / R2-2302626 / R2-2302627 / R2-2302628 / R2-2302629 / R2-2302630 / R2-2302631 / R2-2302632 / R2-2302633 / R2-2302634 / R2-2302635 / R2-2302636.

Intended outcome: Report and agreed CRs (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

* [AT121bis-e][408][POS] Yaw and APC (Swift)

Scope: Check the proposals in R2-2303030 and R2-2303658, merge if necessary, and conclude on the needed changes. Also progress the related discussion from the TEI18 proposal in R2-2303033 and attempt to converge to agreeable CRs

Intended outcome: Report, agreed Rel-16/17 CRs (without CB if possible), agreeable Rel-18 CRs

Deadline: Monday 2023-04-24 2359 UTC

* [AT121bis-e][409][POS] LS to RTCM (Ericsson)

Scope: Review the draft LS in R2-2304044 in light of the email discussion report in R2-2304045 and develop an approvable version.

Intended outcome: Report and approved LS (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

* [AT121bis-e][410][POS] Rel-15/16 positioning stage 3 CRs (ZTE)

Scope: Check the CRs from agenda items 5.3.2, 5.3.3, and 5.3.4: R2-2302985 / R2-2302986 / R2-2302989 / R2-2302990 / R2-2304046 / R2-2304047 / R2-2304048 / R2-2303501 / R2-2303502.

Intended outcome: Report and agreed CRs (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

* [AT121bis-e][411][POS] Rel-17 positioning stage 2 CRs (Nokia)

Scope: Check the CRs from agenda item 6.7.1: R2-2302637 / R2-2302744 / R2-2302993 / R2-2304052 / R2-2304053 / R2-2304054.

Intended outcome: Report and agreed CRs (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

* [AT121bis-e][412][POS] GNSS LOS/NLOS information (Vodafone)

Scope: Discuss documents R2-2303163 / R2-2303196 / R2-2303200 / R2-2303206 and attempt to bring the CRs to an agreeable condition.

Intended outcome: Report and agreeable CRs

Deadline: Friday 2023-04-21 1000 UTC

* [AT121bis-e][413][POS] Positioning for remote UEs (CATT)

Scope: Discuss the proposals/TPs in R2-2303559 and R2-2303702 and attempt to converge to agreeable CRs.

Intended outcome: Report and agreeable CRs

Deadline: Friday 2023-04-21 1000 UTC

* [AT121bis-e][414][POS] Local cartesian coordinates (Qualcomm)

Scope: Discuss the proposals/TP in R2-2303698 and attempt to converge to an agreeable CR.

Intended outcome: Report and agreeable CR

Deadline: Friday 2023-04-21 1000 UTC

* [AT121bis-e][415][Relay] Emergency service for relays (OPPO)

Scope: Discuss the proposals in R2-2302648 and attempt to develop a CR if the proposals are agreeable in principle. Also check if there is a need to align with SA2 on relay setting of the cause code for emergency service.

Intended outcome: Report and agreeable CR

Deadline: Monday 2023-04-24 2359 UTC

* [AT121bis-e][416][Relay] Paging monitoring by L2 relay (OPPO)

Scope: Discuss R2-2302576 and conclude on the proposals.

Intended outcome: Report to CB session

Deadline: Monday 2023-04-24 2359 UTC

* [AT121bis-e][417][POS] LS on GNSS integrity parameters (Huawei)

Scope: Consider the LS in R2-2302404 and draft a reply.

Intended outcome: Report and approvable LS

Deadline: Friday 2023-04-21 1000 UTC

# 4 EUTRA Rel-17 and earlier

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

## 4.4 Positioning corrections Rel-16 and earlier

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

This Agenda Item will be handled by email.

* [AT121bis-e][407][POS] LTE positioning corrections (CATT)

Scope: Check the CRs in agenda item 4.4: R2-2302625 / R2-2302626 / R2-2302627 / R2-2302628 / R2-2302629 / R2-2302630 / R2-2302631 / R2-2302632 / R2-2302633 / R2-2302634 / R2-2302635 / R2-2302636.

Intended outcome: Report and agreed CRs (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

[R2-2302625](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302625_37355_CR0419_(Rel-15).docx) Miscellaneous Corrections on Section 4 Functionality of Protocol in TS 37.355 CATT CR Rel-15 37.355 15.3.0 0419 - F LCS\_LTE\_acc\_enh

[R2-2302626](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302626_37355_CR0420_(Rel-16).docx) Miscellaneous Corrections on Section 4 Functionality of Protocol in TS 37.355 CATT CR Rel-16 37.355 16.10.0 0420 - A LCS\_LTE\_acc\_enh

[R2-2302627](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302627_37355_CR0421_(Rel-17).docx) Miscellaneous Corrections on Section 4 Functionality of Protocol in TS 37.355 CATT CR Rel-17 37.355 17.4.0 0421 - A LCS\_LTE\_acc\_enh

[R2-2302628](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302628_37355_CR0422_(Rel-15).docx) Miscellaneous Corrections on Section 5 LPP Procedures in TS 37.355 CATT CR Rel-15 37.355 15.3.0 0422 - F LCS\_LTE\_acc\_enh

[R2-2302629](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302629_37355_CR0423_(Rel-16).docx) Miscellaneous Corrections on Section 5 LPP Procedures in TS 37.355 CATT CR Rel-16 37.355 16.10.0 0423 - A LCS\_LTE\_acc\_enh

[R2-2302630](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302630_37355_CR0424_(Rel-17).docx) Miscellaneous Corrections on Section 5 LPP Procedures in TS 37.355 CATT CR Rel-17 37.355 17.4.0 0424 - A LCS\_LTE\_acc\_enh

[R2-2302631](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302631_37355_CR0425_(Rel-15).docx) Corrections on the descriptions in Positioning methods IEs CATT CR Rel-15 37.355 15.3.0 0425 - F LCS\_LTE\_acc\_enh

[R2-2302632](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302632_37355_CR0426_(Rel-16).docx) Corrections on the descriptions in Positioning methods IEs CATT CR Rel-16 37.355 16.10.0 0426 - A LCS\_LTE\_acc\_enh

[R2-2302633](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302633_37355_CR0427_(Rel-17).docx) Corrections on the descriptions in Positioning methods IEs CATT CR Rel-17 37.355 17.4.0 0427 - A LCS\_LTE\_acc\_enh

[R2-2302634](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302634_37355_CR0428_(Rel-15).docx) Corrections on positioning assistance data transfer CATT CR Rel-15 37.355 15.3.0 0428 - F LCS\_LTE\_acc\_enh

[R2-2302635](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302635_37355_CR0429_(Rel-16).docx) Corrections on positioning assistance data transfer CATT CR Rel-16 37.355 16.10.0 0429 - A LCS\_LTE\_acc\_enh

[R2-2302636](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302636_37355_CR0430_(Rel-17).docx) Corrections on positioning assistance data transfer CATT CR Rel-17 37.355 17.4.0 0430 - A LCS\_LTE\_acc\_enh

# 5 NR Rel-15 and Rel-16

Essential corrections only.

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

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

## 5.3 NR Positioning Support

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

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

(NR TEI16 Positioning)

This agenda item will be handled by email.

### 5.3.1 General and Stage 2 corrections

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

Yaw and APC (handled by email)

[R2-2303030](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303030%20-%20Yaw%20and%20APC%20clarifications.docx) Yaw and APC clarifications for SSR positioning Swift Navigation, Ericsson discussion Rel-16 NR\_pos-Core

[R2-2303658](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303658_GNSS_PCOandPCVerrorAnalysis.docx) GNSS PCO and PCV error analysis u-blox AG discussion Rel-16 38.305

* [AT121bis-e][408][POS] Yaw and APC (Swift)

Scope: Check the proposals in R2-2303030 and R2-2303658, merge if necessary, and conclude on the needed changes. Also progress the related discussion from the TEI18 proposal in R2-2303033 and attempt to converge to agreeable CRs

Intended outcome: Report, agreed Rel-16/17 CRs (without CB if possible), agreeable Rel-18 CRs

Deadline: Monday 2023-04-24 2359 UTC

RTCM LS (handled by email)

[R2-2304044](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304044%20LSTtoRTCM.docx) LS on SSR orbit and clock correction reference for BDS in 3GPP LPP Ericsson LS out Rel-16 To:RTCM SC 104

[R2-2304045](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304045%20ReportRTCM.docx) Report from [Post121][401][POS] LS to RTCM on SSR orbit and clock correction reference for BDS (Ericsson) Ericsson report Rel-16

* [AT121bis-e][409][POS] LS to RTCM (Ericsson)

Scope: Review the draft LS in R2-2304044 in light of the email discussion report in R2-2304045 and develop an approvable version.

Intended outcome: Report and approved LS (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

Not available/withdrawn

R2-2303032 Zero Yaw and APC clarifications for SSR positioning Swift Navigation draftCR Rel-16 38.305 16.8.0 F NR\_pos-Core Withdrawn

### 5.3.2 RRC corrections

Including impact to 36.331, 38.331, and 38.306.

* [AT121bis-e][410][POS] Rel-15/16 positioning stage 3 CRs (ZTE)

Scope: Check the CRs from agenda items 5.3.2, 5.3.3, and 5.3.4: R2-2302985 / R2-2302986 / R2-2302989 / R2-2302990 / R2-2304046 / R2-2304047 / R2-2304048 / R2-2303501 / R2-2303502.

Intended outcome: Report and agreed CRs (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

Handled by email

[R2-2302985](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302985%20Correction%20on%20SI%20update%20for%20posSIB-r16.docx) Correction on SI update for posSIB-r16 Huawei, HiSilicon CR Rel-16 38.331 16.12.0 3974 - F NR\_pos-Core

[R2-2302986](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302986%20Correction%20on%20SI%20update%20for%20posSIB-r17.docx) Correction on SI update for posSIB-r17 Huawei, HiSilicon CR Rel-17 38.331 17.4.0 3975 - F NR\_pos-Core, NR\_redcap\_enh-Core

### 5.3.3 LPP corrections

Handled by email

[R2-2302989](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302989%20Correction%20to%20nr-DL-TDOA-AdditionalMeasurements-r16.docx) Correction to nr-DL-TDOA-AdditionalMeasurements-r16 Huawei, HiSilicon CR Rel-16 37.355 16.10.0 0434 - F NR\_pos-Core

[R2-2302990](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302990%20Correction%20to%20nr-DL-TDOA-AdditionalMeasurements-r17.docx) Correction to nr-DL-TDOA-AdditionalMeasurements-r17 Huawei, HiSilicon CR Rel-17 37.355 17.4.0 0435 - A NR\_pos-Core

[R2-2304046](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304046%20LSbehavRel15.docx) Correction of Location Server behaviour Ericsson CR Rel-15 37.355 15.3.0 0438 - F NR\_newRAT-Core

[R2-2304047](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304047%20LSbehavRel16.docx) Correction of Location Server behaviour Ericsson CR Rel-16 37.355 16.10.0 0439 - A NR\_newRAT-Core

[R2-2304048](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304048%20LSbehavRel17.docx) Correction of Location Server behaviour Ericsson CR Rel-17 37.355 17.4.0 0440 - A NR\_newRAT-Core

### 5.3.4 MAC corrections

Handled by email

[R2-2303501](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303501%20Correction%20on%20DL%20MAC%20CE%20for%20SP%20Positioning%20SRS.docx) Correction on DL MAC CE for SP Positioning SRS ZTE Corporation CR Rel-16 38.321 16.11.0 1590 - F NR\_pos-Core

[R2-2303502](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303502%20Correction%20on%20DL%20MAC%20CE%20for%20SP%20Positioning%20SRS.docx) Correction on DL MAC CE for SP Positioning SRS ZTE Corporation CR Rel-17 38.321 17.4.0 1591 - A NR\_pos-Core

# 6 NR Rel-17

## 6.5 NR Sidelink relay

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

Tdoc Limitation: 3 tdocs

### 6.5.1 General and stage 2 corrections

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

[R2-2303154](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\38300_CR0652_(Rel-17)_R2-2303154-Correction%20on%20direct%20to%20indirect%20path%20switching.docx) Correction on Direct to Indirect Path Switching CATT CR Rel-17 38.300 17.4.0 0652 - F NR\_SL\_relay-Core

[R2-2303155](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\38300_CR0653_(Rel-17)_R2-2303155-Correction%20on%20the%20PC5%20unicast%20link%20release%20in%20case%20of%20indirect%20to%20direct%20path%20switching.docx) Correction on the PC5 unicast link release in case of indirect to direct path switching CATT CR Rel-17 38.300 17.4.0 0653 - F NR\_SL\_relay-Core

[R2-2303384](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303384%2038300_Correction_for_NR_sidelink_relay.docx) Miscellaneous corrections for Stage 2 NR sidelink relay Apple CR Rel-17 38.300 17.4.0 0656 - F NR\_SL\_relay-Core

[R2-2303858](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303858%20Corrections%20on%20relay%20(re)selection.docx) Corrections on relay (re)selection ZTE, Sanechips CR Rel-17 38.300 17.4.0 0661 - F NR\_SL\_relay-Core

### 6.5.2 Control plane corrections

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

Late addition to AI (handle by email)

[R2-2302576](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302576%20-%20Discussion%20on%20paging%20monitoring%20by%20SL%20L2%20U2N%20Relay_V2.docx) Discussion on paging monitoring by SL L2 U2N Relay OPPO discussion Rel-17 NR\_SL\_relay-Core, NR\_redcap-Core, TEI17

* [AT121bis-e][416][Relay] Paging monitoring by L2 relay (OPPO)

Scope: Discuss R2-2302576 and conclude on the proposals.

Intended outcome: Report to CB session

Deadline: Monday 2023-04-24 2359 UTC

Rapporteur summary

[R2-2304189](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304189%20%5bPre121bis-e%5d%5b401%5d%5bRelay%5d%20Summary%20of%20agenda%20item%206.5.2.docx) Summary of agenda item 6.5.2 on control plane corrections (Huawei) Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

Proposal 1: RAN2 confirm that forwarding paging cause by L2 U2N Relay UE is not supported in Rel-17.

Proposal 2: R2-2303115 is not pursued.

Proposal 3: The changes in R2-2303156 are agreeable, and can be merged into RRC miscellaneous CR.

Proposal 4: The changes in R2-2303175 are agreeable, and can be merged into RRC miscellaneous CR.

Proposal 5: Then change in R2-2303176 is agreeable, and can be merged into RRC miscellaneous CR.

Proposal 6: The change in R2-2303337 is agreeable, and can be merged into RRC miscellaneous CR.

Proposal 7: R2-2303338 is not pursued.

Proposal 8: Change #1, Change #4 and the first two sentence of change #3 in R2-2303385 are agreeable, and can be merged into RRC miscellaneous CR.

Proposal 9: RAN2 agree that “the SRAP configuration used for the SRB1” is to be removed from the field description of SL-L2RemoteUE-Config of RRCReestablishment message.

Proposal 10: The 38.304 CR in R2-2303489 is agreeable.

Proposal 11: The first change of adding separations between conditional “or”s in R2-2303656 is agreeable and can be merged into RRC miscellaneous CR.

Proposal 12: The changes in R2-2303739 are agreeable, and can be merged into RRC miscellaneous CR.

Proposal 13: RAN2 agree that “is” is to be replaced by “was” in the sentence “the UE is acting as L2 U2N Remote UE for the destination” in clause 5.8.9.3.

Proposal 14: The intention of R2-2303983 is agreeable. RAN2 to discuss whether to add a NOTE in 5.2.2.4.2, to clarify upon reception of the SIB1, a L2 U2N Remote UE can disregard the Uu L1 UL/DL configurations of the serving cell.

Proposal 15: R2-2304066 is not pursued.

* [AT121bis-e][425][Relay] Rel-17 relay CP CRs (Huawei)

Scope: Check the proposals from R2-2304189 and conclude on the CRs. Can produce a merged CR for minor changes.

Intended outcome: Report to CB session and agreeable CRs

Deadline: Monday 2023-04-24 2359 UTC

The following documents will not be individually treated

[R2-2302593](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302593_Corrections%20to%20paging%20monitoring%20via%20Relay%20UE.doc) Corrections to paging monitoring via Relay UE Samsung Electronics Co., Ltd discussion Rel-17 NR\_SL\_relay-Core

[R2-2302594](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302594_38.331_CR_Corrections%20to%20paging%20monitoring%20via%20Relay%20UE.docx) 38.331\_CR\_Corrections to paging monitoring via Relay UE Samsung Electronics Co., Ltd CR Rel-17 38.331 17.4.0 3949 - F NR\_SL\_relay-Core

[R2-2303115](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303115.docx) Correction on 38.331 Xiaomi CR Rel-17 38.331 17.4.0 3985 - F NR\_SL\_relay-Core

[R2-2303156](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\38331_CR3992_(Rel-17)_R2-2303156-Corrections%20on%20the%20Field%20Description%20of%20Common%20Resource%20Pool.docx) Correction on Field Description of Common Resource Pool CATT CR Rel-17 38.331 17.4.0 3992 - F NR\_SL\_relay-Core

[R2-2303175](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303175%20Miscellaneous%20Corrections%20to%20TS%2038.331%20for%20SL%20relay.docx) Miscellaneous corrections to TS 38.331 for SL relay ZTE, Sanechips CR Rel-17 38.331 17.4.0 3996 - F NR\_SL\_relay-Core

[R2-2303176](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303176%20Corrections%20on%20sorting%20quantity%20for%20Event%20X1%20for%20SL%20relay.docx) Corrections on sorting quantity for Event X1 for SL relay ZTE, Sanechips CR Rel-17 38.331 17.4.0 3997 - F NR\_SL\_relay-Core

[R2-2303337](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\38331_CR4007_(Rel-17)_R2-2303337_Correction%20on%20PC5%20RLC%20channel%20release%20trigger%20due%20to%20SL%20RLF.docx) Correction on PC5 RLC channel release trigger due to SL RLF vivo CR Rel-17 38.331 17.4.0 4006 - F NR\_SL\_relay-Core

[R2-2303338](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\38331_CR4006_(Rel-17)_R2-2303338_Correction%20on%20SRB0%20handling%20when%20UE%20is%20acting%20as%20L2%20U2N%20Remote%20UE.docx) Correction on SRB0 handling when UE is acting as L2 U2N Remote UE vivo CR Rel-17 38.331 17.4.0 4007 - F NR\_SL\_relay-Core

[R2-2303385](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303385%2038331_Correction_L2%20relay.docx) Corrections on UE handling of Layer 2 UE-to-NW relay configurations Apple CR Rel-17 38.331 17.4.0 4009 - F NR\_SL\_relay-Core

[R2-2303386](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303386%20Discussion%20on%20SRAP%20config%20in%20RRCRestablishment%20.doc) Discussion on SRAP configuration in RRCReestablishment Apple discussion Rel-17 NR\_SL\_relay-Core

[R2-2303489](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\38304_CR0333_(Rel-17)_R2-2303489%20Clarification%20on%20sidelink%20communication%20resource%20configuration%20used%20by%20OoC%20L2%20Remote%20UE.docx) Clarification on sidelink communication resource configuration used by OoC L2 Remote UE Huawei, HiSilicon CR Rel-17 38.304 17.4.0 0333 - F NR\_SL\_relay-Core

[R2-2303656](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303656%20Miscellaneous%20corrections%20to%2038331.docx) Miscellaneous corrections to 38331 Nokia, Nokia Shanghai Bell draftCR Rel-17 38.331 17.4.0 D NR\_SL\_relay-Core

[R2-2303739](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Docs\R2-2303739.zip) Correction on L2 U2N Relay Remote UE RRC procedure Philips International B.V. CR Rel-17 38.331 17.4.0 4024 - F NR\_SL\_relay-Core

[R2-2303922](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303922_CR4038_Correction%20on%20role%20of%20a%20L2%20U2N%20Remote%20UE.docx) Correction on role of a L2 U2N Remote UE ASUSTeK CR Rel-17 38.331 17.4.0 4038 - F NR\_SL\_relay-Core

[R2-2303983](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303983.docx) Correction on remote UE’s behavior upon SIB1 reception Xiaomi CR Rel-17 38.331 17.4.0 4045 - F NR\_SL\_relay-Core

[R2-2304066](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304066%20-%2038.331_CR4048_Rel17_Correction%20on%20Cell%20Barring%20for%20L2%20U2N%20Remote%20UE.docx) Correction on Cell Barring for L2 U2N Remote UE Ericsson España S.A. CR Rel-17 38.331 17.4.0 4048 - F NR\_SL\_relay-Core

### 6.5.3 User plane corrections

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

Summary document

[R2-2304191](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304191%20%5bPre121bis-e%5d%5b402%5d%5bRelay%5d%20Summary%20of%20agenda%20item%206.5.3.doc) Summary of agenda item 6.5.3 (Samsung) Samsung discussion Rel-17 NR\_SL\_relay-Core

PDCP CR:

Proposal 1. The 38.323 CR in R2-2303490 is agreeable.

RLC CR:

Proposal 2. The 38.322 CR in R2-2303491 is agreeable.

SRAP CR:

Proposal 3. The 38.351 CR in R2-2304036 is agreeable.

Proposal 4. If proposal 3 is agreed, RAN2 to discuss the proposed text change in clause 5.2.2.2 in 38.351.

- else if the SRAP Data PDU is for SRB1 and if there is not an entry in sl-SRAP-ConfigRelay, whose sl-RemoteUE-RB-Identity matches the SRB identity of the SRAP Data PDU, or if there is an entry in sl-SRAP-ConfigRelay without the corresponding sl-EgressRLC-ChannelPC5:

- Determine the egress PC5 Relay RLC channel in the determined egress link corresponding to logicalChannelIdentity for SL-RLC1 as specified in TS 38.331 [3];

The following documents will not be individually treated

[R2-2303490](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\38323_CR0123_(Rel-17)_R2-2303490%20Clarification%20on%20the%20services%20expected%20from%20SRAP%20layer.docx) Clarification on the services expected from SRAP layer Huawei, HiSilicon CR Rel-17 38.323 17.4.0 0123 - F NR\_SL\_relay-Core

* Agreed in principle

[R2-2303491](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\38322_CR0052_(Rel-17)_R2-2303491%20Clarification%20on%20the%20maximum%20Data%20field%20size%20for%20L2%20U2N%20relay.docx) Clarification on the maximum Data field size for L2 U2N relay Huawei, HiSilicon CR Rel-17 38.322 17.2.0 0052 - F NR\_SL\_relay-Core

* Agreed in principle

[R2-2304036](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304036_Corrections%20on%20SRAP%20for%20SL%20relay.docx) Corrections on SRAP for SL relay NEC CR Rel-17 38.351 17.4.0 0020 - F NR\_SL\_relay-Core

* [AT121bis-e][426][Relay] Rel-17 relay UP CR (Samsung)

Scope: Check the CR in R2-2304036 and determine whether/how to integrate the TP from P4 of R2-2304191

Intended outcome: Agreed CR (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

Not available/withdrawn

R2-2302974 Corrections on SRAP for SL relay NEC Corporation CR Rel-17 38.351 17.4.0 0019 - F NR\_SL\_relay-Core Withdrawn

## 6.7 NR positioning enhancements

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

Tdoc Limitation: 4 tdocs

### 6.7.1 General and stage 2 corrections

Handled by email

Incoming LS with “take into account” action

[R2-2302429](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302429_R4-2303244.docx) Reply LS on applicability of timing error margin of Rx TEG (R4-2303244; contact: CATT) RAN4 LS in Rel-17 NR\_pos\_enh-Core To:RAN2 Cc:RAN1, RAN3

Incoming LS and draft reply

[R2-2302404](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302404_C4-230655.docx) LS on GNSS integrity requirement parameters definition (C4-230655; contact: Huawei) CT4 LS in Rel-17 5G\_eLCS\_ph2 To:RAN2 Cc:SA2

[R2-2304178](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304178%20Reply%20LS%20on%20GNSS%20integrity%20requirement%20parameters%20definition.docx) Draft Reply LS to CT4 on GNSS integrity requirements Huawei, HiSilicon LS out Rel-17 To:CT4 Cc:SA2 Late

* [AT121bis-e][417][POS] LS on GNSS integrity parameters (Huawei)

Scope: Consider the LS in R2-2302404 and draft a reply.

Intended outcome: Report and approvable LS

Deadline: Friday 2023-04-21 1000 UTC

Stage 2 proposals

[R2-2302637](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302637_38305_CR0123_(Rel-17).docx) Miscellaneous corrections on 38.305 CATT CR Rel-17 38.305 17.4.0 0123 - F NR\_pos\_enh-Core

[R2-2302744](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302744%20Positioning%20stage%202.docx) Stage 2 procedure for deactivation of MG gap and PPW Intel Corporation draftCR Rel-17 38.305 17.4.0 F NR\_pos\_enh-Core

[R2-2302993](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302993%20Correction%20to%20UE%20Tx%20TEG%20reporting.docx) Correction to UEPositioningAssistanceInformation Huawei, HiSilicon CR Rel-17 38.305 17.4.0 0124 - F NR\_pos\_enh-Core

[R2-2304052](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304052%20stage2.docx) Update of information transfer from gNB to LMF Ericsson CR Rel-17 38.305 17.4.0 0125 - F NR\_pos\_enh-Core

[R2-2304053](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304053%20CR%20to%2038305%20Measurements%20TRP%20AD.docx) Measurements and Assistance Data Transfer Nokia, Nokia Shanghai Bell CR Rel-17 38.305 17.4.0 0126 - F NR\_pos\_enh-Core

[R2-2304054](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304054%20CR%20to%2038305%20Integrity.docx) Protection Level and Target Integrity Risk Nokia, Nokia Shanghai Bell CR Rel-17 38.305 17.4.0 0127 - F NR\_pos\_enh-Core

* [AT121bis-e][411][POS] Rel-17 positioning stage 2 CRs (Nokia)

Scope: Check the CRs from agenda item 6.7.1: R2-2302637 / R2-2302744 / R2-2302993 / R2-2304052 / R2-2304053 / R2-2304054.

Intended outcome: Report and agreed CRs (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

### 6.7.2 RRC corrections

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

[R2-2302638](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302638_38331_CR3956_(Rel-17).docx) Corrections on the figure of UE Positioning Assistance Information procedure CATT CR Rel-17 38.331 17.4.0 3956 - F NR\_pos\_enh-Core

Discussion:

Lenovo think the CR is OK, but they have a minor comment to the figure; they think the message name should be changed to the procedure name to go with the bidirectional arrow. CATT think it aligns with other figures in the RRC spec.

ZTE agree with Lenovo. They also think this is an editorial CR.

* RRCReconfiguration (italics) to be changed to “RRC reconfiguration” (procedure name) in the figure.
* Agreed in principle with this change, as R2-2304281

[R2-2302992](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302992%20Correction%20to%20UE%20positioning%20assistance%20information.docx) Correction to UE positioning assistance information Huawei, HiSilicon CR Rel-17 38.331 17.4.0 3976 - F NR\_pos\_enh-Core

Discussion:

vivo think the change is not necessary, because the action is captured in the next clause.

ZTE also think it is not necessary. Ericsson and Lenovo agree with vivo.

Samsung understand the motivation, but they think it would be better placed in 5.3.5.3 on reception of the RRCReconfiguration.

Huawei indicate the main intention is to establish a common understanding between the UE and the gNB of when the period starts.

CATT also think the CR is not necessary and duplicates functionality from 5.7.14.3.

Intel agree with the CR and think we have similar language for periodic measurements.

Nokia think the current text is not very clear and some clarification might be needed before taking a CR like this. The point is that when the request comes in, the first report is sent as in the one-shot case, followed by periodic repetitions.

* Not pursued (related issue can be further investigated)

### 6.7.3 LPP corrections

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

Rapporteur summary

[R2-2304192](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304192_(Summary%20of%20AI%206.7.3%20(LPP))_v1.docx) Summary of AI 6.7.3 - NR positioning enhancements, LPP corrections Qualcomm Incorporated discussion Rel-17 NR\_pos\_enh-Core

Proposal 1: The CR in "R2-2302639, "Corrections on applicability of timing error margin of RxTEG in NR-Multi-RTT-SignalMeasurementInformation field descriptions", CATT" is an essential correction.

Proposal 2: The CR in "R2-2302884, "Miscellaneous corrections on LPP", Lenovo" is an essential correction.

Proposal 3: RAN2 to discuss and decide whether the CR in "R2-2302987, "Correction to PRS validity area", Huawei, HiSilicon." is an essential correction or not, in particular:

- Should the "lower/receiving/decoding layer" deliver only the ProvideAssistanceData message (instance) to "upper/positioning layer" which is valid for the cell where the UE currently camps on (instead of providing all received ProvideAssistanceData messages (instances))?

Proposal 4: RAN2 to discuss and decide whether the CR in "R2-2304051, "Missing finer periodicities than 1s", Ericsson." is an essential corrections or not, including the following aspects:

- Is a finer granularity for the periodic reporting intervals missing?

- If yes, which values are missing?

- If yes, are these missing values applicable to all LPP positioning methods?

Proposal 5: The CR in R2-2304056, "LOS-NLOS-Indicator Types", Nokia, Nokia Shanghai Bell. is not an essential correction.

Proposal 6: The CR in "R2-2304139, "Use of nr-DL-PRS-ExpectedAoD-or-AoA assistance by UE", Nokia, Nokia Shanghai Bell" is not an essential correction.

The following documents will not be individually treated

[R2-2302639](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302639_37355_CR0431_(Rel-17).docx) Corrections on applicability of timing error margin of RxTEG in NR-Multi-RTT-SignalMeasurementInformation field descriptions CATT CR Rel-17 37.355 17.4.0 0431 - F NR\_pos\_enh-Core

[R2-2302884](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302884%20Misc%20LPP%20corrections%20R17%2037355.docx) Miscellaneous corrections on LPP Lenovo CR Rel-17 37.355 17.4.0 0432 - F NR\_pos\_enh-Core

[R2-2302987](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302987%20Correction%20to%20PRS%20validity%20area.docx) Correction to PRS validity area Huawei, HiSilicon CR Rel-17 37.355 17.4.0 0433 - F NR\_pos\_enh-Core

[R2-2304050](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304050%20PeriodicD.docx) Missing LPP support for sub 1s location information reporting periodicity Ericsson discussion Rel-17

[R2-2304051](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304051%20PeriodicCR.docx) Missing finer periodicities than 1s Ericsson CR Rel-17 37.355 17.4.0 0441 - F NR\_pos\_enh-Core

[R2-2304056](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304056%20CR%20to%2037355%20LOS-NLOS%20Indicator.docx) LOS-NLOS-Indicator Types Nokia, Nokia Shanghai Bell CR Rel-17 37.355 17.4.0 0442 - F NR\_pos\_enh-Core

[R2-2304139](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304139%20CR%20to%2037355%20ExpectedAoA.docx) Use of nr-DL-PRS-ExpectedAoD-or-AoA assistance by UE Nokia, Nokia Shanghai Bell CR Rel-17 37.355 17.4.0 0443 - F NR\_pos\_enh-Core

* [AT121bis-e][427][POS] Rel-17 LPP CRs (Qualcomm)

Scope: Check the CRs in agenda item 6.7.3 and R2-2302745.

Intended outcome: Report and agreed CRs (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

Not available/withdrawn

R2-2304055 Use of nr-DL-PRS-ExpectedAoD-or-AoA assistance by UE Nokia, Nokia Shanghai Bell CR Rel-17 38.305 17.4.0 0128 - F NR\_pos\_enh-Core Withdrawn

### 6.7.4 MAC corrections

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

[R2-2302991](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302991%20Correction%20to%20posSRS%20transmission%20in%20RRC_INACTIVE.docx) Correction to posSRS transmission in RRC\_INACTIVE Huawei, HiSilicon CR Rel-17 38.321 17.4.0 1581 - F NR\_pos\_enh-Core

Discussion:

Nokia are OK with the CR, but think the wording should be “SP-SRS that is activated according to clause 5.18.17”.

Lenovo are also OK with the CR, but think the addition of the new clause is unclear.

* Postponed

[R2-2304049](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304049%20SRTrigger.docx) Correction for trigger condition of Scheduling Request Ericsson, OPPO CR Rel-17 38.321 17.4.0 1607 - F NR\_pos\_enh-Core

Discussion:

vivo do not think the change is essential, because there are multiple events that trigger SR and most of them have no reference to the clause. Ericsson think in this case everything that is needed is captured in the referred clause.

Huawei think it is an editorial change and can be merged.

OPPO consider that when the PUCCH resource for SR is not configured, the UE needs to RACH.

ZTE agree with vivo that it is not needed.

* Postponed

### 6.7.5 UE capabilities

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

[R2-2302745](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302745%20Positioning%20capabilities.docx) LPP capability for FGs27-13a,14a and 14-2 Intel Corporation draftCR Rel-17 37.355 17.4.0 F NR\_pos\_enh-Core

* Handled in email discussion [427]

# 7 Rel-18

## 7.2 Expanded and improved NR positioning

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

Time budget: 2 TU

Tdoc Limitation: 4 tdocs

### 7.2.1 Organizational

Including incoming LSs and rapporteur inputs.

Incoming LSs with RAN2 in Cc:

[R2-2302403](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302403_C1-231129.docx) LS on LPP message and supplementary service event report over a user plane connection between UE and LMF (C1-231129; contact: Ericsson) CT1 LS in Rel-18 5G\_eLCS\_Ph3 To:SA2 Cc:SA3, RAN2, CT4

[R2-2302409](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302409_R1-2302146.docx) LS Reply on PRU Procedures (R1-2302146; contact: Qualcomm) RAN1 LS in Rel-18 NR\_pos\_enh2-Core, 5G\_eLCS\_Ph3 To:SA2 Cc:RAN2, RAN3

Low power or high accuracy (discussed under LPHAP agenda item)

[R2-2302446](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302446_S2-2303414.docx) LS on the requirement on low power or high accuracy positioning (S2-2303414; contact: Huawei) SA2 LS in Rel-18 5G\_eLCS\_Ph3 To:SA1, RAN1, RAN2

Multiple target UEs (discussed under sidelink positioning agenda item)

[R2-2302448](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302448_S2-2303837.docx) LS on support of multiple Target UEs (S2-2303837; contact: Qualcomm) SA2 LS in Rel-18 Ranging\_SL To:RAN2 Cc:RAN1

[R2-2303513](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303513_(Support%20of%20Mutiple%20Target%20UEs%20for%20Sidelink%20Positioning).docx) Support of Multiple Target UEs for Sidelink Positioning Qualcomm Incorporated discussion

PRUs

[R2-2302449](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Docs\R2-2302449.zip) LS on PRU procedures (S2-2303861; contact: Qualcomm) SA2 LS in Rel-18 5G\_eLCS\_Ph3 To:RAN1, RAN2

[R2-2302875](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302875_(PRU%20Response%20LS).docx) PRU Procedures (draft response LS to R2-2301939 (S2-2303861)) Qualcomm Incorporated discussion

[R2-2302957](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302957%20Discussion%20and%20draft%20LS%20reply%20on%20PRU%20procedures.docx) Discussion and draft LS reply on PRU procedures vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2303707](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303707%20PRU.docx) On the Positioning Reference Units aspects Ericsson discussion Rel-18

Discussion:

Qualcomm think there is not a lot of divergence in the draft replies.

* [AT121bis-e][421][POS] Reply LS to SA2 on PRU procedures (Qualcomm)

Scope: Draft a reply to R2-2302449, taking related contributions into account.

Intended outcome: Approved LS (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

Rapporteur working documents

[R2-2302502](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302502%20Work%20Plan%20on%20Rel-18%20Positioning%20Work%20Item.docx) Work Plan on Rel-18 Positioning Work Item CATT, Intel, Ericsson Work Plan Rel-18 NR\_pos\_enh2

Discussion:

Lenovo note that the work plan suggests stage 2 CRs from this meeting, which may be a little premature. Intel think it depends on the progress in this meeting; there are stage 2 inputs on integrity, for example. CATT also see that there are stage 2 TPs available at this meeting, so they think we can start running CRs from here.

[R2-2302738](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302738_SLPP%20specification.docx) Further considerations on SLPP specification Intel Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2302739](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302739%20TS%2038.355%20skeleton.docx) TS 38.355 skeleton Intel Corporation draft TS Rel-18 38.355 0.0.1 NR\_pos\_enh2

* [AT121bis-e][422][POS] SLPP specification baseline (Intel)

Scope: Collect comments on R2-2302738 and R2-2302739 and attempt to converge to a baseline, taking into account also related contributions on SLPP structure.

Intended outcome: Report and endorseable skeleton

Deadline: Monday 2023-04-24 2359 UTC

### 7.2.2 Sidelink positioning

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

[R2-2302740](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302740.docx) Further considerations on sidelink positioning Intel Corporation discussion Rel-18 NR\_pos\_enh2

[SLPP stack]

Proposal 1: RAN2 is proposed to agree that as per SA2 LS, SLPP is carried over the V2X/ProSe layer.

Discussion:

CATT think this is up to SA2, and we already agreed that it is over PC5-U. If we need something we should ask SA2.

vivo agree with CATT and wonder if SLPP should be on top of SDAP directly.

Intel and Qualcomm understand that SA2 already agreed this and the proposal is just to align.

Xiaomi have a different understanding; they think SA2 only meant that some information may need treatment over V2X/ProSe layer, and SLPP should be directly over IP/non-IP. Ericsson have the same understanding.

Huawei think SA2 already agreed this and captured it in a TS; they have the same view as Intel. They also want to understand the RAN2 impacts. They think no LS is needed and companies can confirm internally.

[Sessionless]

Proposal 2: Postpone the discussion on support of the sessionless operation until the handling of broadcast/groupcast (and the associated security aspects) are clear.

[Discovery]

Proposal 3: At least the following information shall be included as part of the discovery messages (send LS to SA2 for confirmation):

a) SL positioning capabilities, including supported positioning methods by the anchor UE

b) Ability to compute location information based on SL-PRS measurements

c) Ability to perform absolute vs relative positioning/ranging calculation

Discussion:

Xiaomi think the ability to compute can be inferred from the UE role, so at least b and c may not be necessary.

ZTE think an LS is needed if we are going to put things in the discovery signalling; they would like to clarify for SA2 that we have anchor UE attributes as one part, and anchor UE current status as another part, in the discovery messages.

Qualcomm think the discovery only needs to indicate support of SLPP, and the rest can happen in an SLPP session. They think we should not embed specific methods in the discovery signalling as we may have different methods in the future. They understand that the UE roles could be negotiated in SLPP.

vivo understand we already agreed to groupcast/broadcast of certain messages, so they wonder if the proposal means we would introduce a container in discovery signalling; the alternative could be duplicated information between discovery and SLPP.

Intel indicate that the goal is to have a discovery procedure before positioning session setup, e.g., to allow the target to learn if there are anchor UEs in the vicinity. They understand that the UE role is not directly related to, e.g., the ability to perform absolute or relative positioning.

Huawei and Xiaomi understand that SA2 have already agreed to put the UE role in the discovery message. Huawei also agree with Qualcomm that it may only be necessary to indicate support of SLPP in discovery; in general we do not include AS parameters in the upper-layer signalling.

vivo indicate from SA2 specs that there is a list of UE roles during discovery.

CATT think we can conclude on what information is necessary in the discovery message. They see that support of SLPP is needed, and further capabilities can be exchanged within LPP. They think PLMN ID and cell ID also need to be included.

Intel understand we need to check if anchor UE selection proceeds by capability exchange in SLPP or from discovery signalling. They think if supported positioning methods are not known during discovery, the target UE may learn late that an anchor UE does not support a method.

Nokia support the proposal and think there are quite a few useful parameters for anchor selection that could be in discovery; they are not necessarily all static but could also include dynamic conditions such as interconnection with other UEs, knowledge of current location, sync quality, etc. They think we could have a discussion on what parameters are supported at what stage.

Xiaomi indicate SLPP support is already covered in SA2 agreements.

OPPO understand that according to SA2 agreements, the UE role and SLPP support are intended for selection of a server UE and could result in triggering of an SLPP session; they think it is better to select anchor UEs as part of the following positioning session.

* [AT121bis-e][423][POS] Sidelink positioning parameters in discovery signalling (Nokia)

Scope: Discuss the necessary parameters in discovery signalling for identifying the involved UEs in a sidelink positioning operation and establishing a session.

Intended outcome: Report to Monday week 2 session

Deadline: Friday 2023-04-21 1000 UTC

[Anchor (re)selection]

Proposal 4: For initial anchor UE selection after discovery, RAN2 is proposed to discuss and downselect between the following options:

• The LMF/server UE based approach, where LMF/server UE may obtain information about candidate anchor UEs (either from target UE itself or from (pre-)configuration) to make the selection.

• The LMF/server UE assisted approach, whereby LMF/server UE may provide selection criteria to the target UE and target UE makes the final selection.

Proposal 5: The evaluation for anchor UE selection/reselection is performed at the AS layer, which indicates the selected anchor UE to the upper layer.

Proposal 6: RAN2 supports the procedure to allows the UE to report the need for anchor UE reselection to the LMF.

Proposal 7: For anchor UE reselection during an ongoing SL positioning procedure, at least SL link quality based trigger shall be considered.

[SLPP and LPP]

Proposal 8: For the case of hybrid PC5+Uu positioning in coverage, RAN2 is proposed to agree with Option 2: SLPP signaling is transported within LPP transparently, i.e. use the newly defined SLPP to support sidelink based positioning and use the existing LPP to support Uu based positioning; and the SLPP is carried as a container in LPP

Proposal 9: For the case of PC5-only positioning in coverage, RAN2 is proposed to agree that SLPP signaling can be transported within LPP transparently, i.e. use the newly defined SLPP to support sidelink based positioning; and the SLPP is carried as a container in LPP

Discussion:

Qualcomm do not see the difference between PC5-only and PC5+Uu; in both cases it would require a sidelink-positioning-only UE to support LPP as well as SLPP. They would prefer to transport SLPP to the LMF. They also think that this could restrict what SLPP messages can be meaningfully transported; e.g., if we have session management messages, there would be no natural way to transport those within LPP.

Huawei think we only need to discuss what will be the transport method between the UE and LMF; they agree with Qualcomm that we do not need to distinguish between PC5-only and PC5+Uu. They think we can try to exclude extending LPP if it is not possible to agree on an option right away.

CATT think if the LMF is involved, they would prefer only one interface between the UE and the LMF. They understand that from the LMF perspective, it is simpler to have a single protocol.

OPPO think a UE that supports SLPP but not LPP may not be a major use case, especially for the PC5+Uu case, so they think it is not a big issue to support both protocols.

Lenovo think for PC5-only, the LMF need not be involved even in coverage. Huawei understand this is between UE and LMF. Intel understand that this is the case where an LMF selects a sidelink positioning method for a UE, so the measurements are based on PC5.

MediaTek agree with Qualcomm.

Ericsson do not see value in excluding the option to extend LPP; they think there is a majority for the container-based solution.

CATT understand that under Qualcomm’s suggestion, the UE that interacts with the LMF would need to support both SLPP and LPP. Chair understands that a UE supporting only sidelink positioning would not need to support LPP.

Qualcomm think the LMF would need to understand SLPP in either case, even if it comes in a container.

Nokia wonder if the LMF is always used in IC/PC cases in the first place. When the target is OOC, they do not see how it will speak LPP with the LMF (including any SLPP payload). They think we should decide first when the LMF is used.

Ericsson think the WID does not explicitly speak to low-power or low-capability UEs where the protocol footprint is a big problem. They think the LMF will always be involved for IC/PC.

[Architecture]

Proposal 10: In order to support sidelink based positioning for in coverage and out of coverage case, RAN2 to confirm the SL positioning architecture (including the concept of an anchor node/UE) shown in figure 1.

[UE roles]

Proposal 11: To support sidelink based positioning, RAN2 to confirm the corresponding functionality of the anchor node, i.e. (interact with the target UE over PC5 to deliver assistance data, perform SL-PRS transmission/measurement and location estimation).

Proposal 12: RAN2 confirms that either the target UE or the anchor UE may handle the functionality of the SL positioning server UE

[LCS]

Proposal 13: A SLPP session is associated with a specific location service request (i.e. MT-LR or MO-LR) as in LPP.

Proposal 14: Both MO-LR based and MT-LR based sidelink positioning procedures shall be supported for the in coverage case, using Uu based positioning design as baseline.

[Session management]

Proposal 15: Either the LMF or the SL positioning server UE is responsible for managing the positioning session for the partial coverage scenario (when target UE is not directly in NW coverage).

[Signalling flow]

Proposal 16: As per the agreed series of steps for SL positioning procedure, RAN2 confirms the signaling flow for UE based sidelink positioning for in coverage and out of coverage as captured in Figures 2 and 3 above.

[Group positioning]

Proposal 17: Based on SA2 conclusions, it is confirmed that group management for group positioning is handled by the upper/application layer and no impact is foreseen in RAN2.

Proposal 18: The group ID and/or L2 Destination IDs for transmission of capability information, assistance information and location request/response shall be provided by the upper layers.

Proposal 19: RAN2 to confirm the procedure and signaling flow for sidelink based group positioning as captured in Figures 4 above as baseline.

* [AT121bis-e][424][POS] Group positioning and multiple targets (Xiaomi/Qualcomm)

Scope: Discuss P17-P19 of R2-2302740, attempt to conclude, and evaluate whether we can reply to the SA2 LS on multiple target UEs.

Intended outcome: Report (Xiaomi) and agreeable reply LS (Qualcomm)

Deadline: Friday 2023-04-21 1000 UTC

Section 2.1 on cast types

[R2-2304033](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304033%20Discussion%20on%20SL%20positioning%20-V1.doc) Discussion on SL positioning Xiaomi discussion Rel-18

Proposal 1 RAN2 to provide more detailed scenarios and basic flows regarding broadcast/groupcast to SA3.

Proposal 2 RAN2 agrees to provide above scenario and operation flow regarding broadcast to SA3 as example.

Proposal 3 RAN2 agrees to support groupcast only for group positioning.

Proposal 4 RAN2 agrees to support group positioning only for ranging.

Proposal 5 RAN2 agrees not to introduce group management procedure in SLPP layer.

Proposal 6 RAN2 agrees not to support groupcast for non-group positioning scenario.

Proposal 7 RAN2 provide with SA3 the above groupcast scenario and operation flow as example.

Session-based and sessionless aspects

[R2-2304005](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304005%20(7.2.2)%20sidelink%20positioning%20procedure%20session%20aspects_r1.doc) Designing SLPP protocol in the session perspective Samsung R&D Institute UK discussion

Proposal 1-1. For session-based SLPP, RAN2 agree that an SLPP session is used between or among UEs in order to obtain location related measurements or a location estimate or to transfer assistance data.

Proposal 1-2. For session-based SLPP, RAN2 agree that a single SLPP session is used to support a single location request for sidelink positioning.

Proposal 1-3. RAN2 agree to send LS to SA2 to inform the agreed session-based SLPP definitions and ask for the procedure on how a single SLPP session is invoked by the LCS service request for sidelink positioning.

Proposal 1-4. For session-based SLPP, RAN2 agree that SLPP can be triggered by upper layer, and SLPP can initiate the session start.

Proposal 1-5. For session-based SLPP, RAN2 agree that the following TP:

Multiple SLPP sessions can be used between/among the same endpoints to support multiple different location requests. Each SLPP session comprises one or more SLPP transactions, with each SLPP transaction performing a single operation (capability exchange, assistance data transfer, or location information transfer). In NG-RAN, the SLPP transactions are realized as SLPP procedures. The instigator of an SLPP session will always instigate the first SLPP transaction, but subsequent transactions may be instigated by other end. SLPP transactions within a session may occur serially or in parallel.

[Chair’s note: Above is the proposed text; see input document for the revision marks against the description of LPP sessions.]

Proposal 1-6. For session-based SLPP, RAN2 agree that SLPP transactions are indicated at the SLPP protocol level with a transaction ID in order to associate messages with one another (e.g., request and response).

Proposal 1-7. For session-based SLPP, it is FFS that Messages within a transaction are linked by a common transaction identifier.

Proposal 1-8. For the session based SLPP, there should be session ID to distinguish the sessions in the involved UEs.

Proposal 2-1. RAN2 agree that there is no need to restrict the used cast type for session-less SLPP.

Proposal 2-2. RAN2 agree that session-less operation can work with security.

Proposal 3. RAN2 agree that both the session-less and session-based SLPP operation are necessary to be described in the SLPP protocol specification.

[R2-2302503](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302503%20Discussion%20on%20sidelink%20positioning.docx) Discussion on sidelink positioning CATT discussion Rel-18 NR\_pos\_enh2

[R2-2302582](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302582%20Discussion%20on%20sidelink%20positioning.docx) Discussion on Sidelink Positioning Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

[R2-2302588](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302588_Sidelink_Fraunhofer.docx) UE Positioning using Sidelink Fraunhofer IIS, Fraunhofer HHI discussion

[R2-2302655](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302655.docx) Discussion of signalling procedures Nokia Germany discussion Rel-18

[R2-2302656](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302656.docx) Discussion of session-based and session-less SL positioning Nokia Germany discussion Rel-18

[R2-2302885](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302885%20Discussion%20on%20further%20SLPP%20aspects.doc) Discussion on further SLPP aspects Lenovo discussion Rel-18 NR\_pos\_enh2

[R2-2302958](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302958%20Discussion%20on%20sidelink%20positioning.docx) Discussion on sidelink positioning vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2302982](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302982%20Discussion%20on%20Anchor%20UE%20(Re)discovery%20and%20(Re)selection%20for%20SL%20positioning.docx) Discussion on Anchor UE (Re)discovery and (Re)selection for SL positioning KT Corp. discussion Rel-18 NR\_pos\_enh2

[R2-2303048](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303048_Discussion%20on%20SL%20positioning%20discovery%20and%20selection%20procedure.doc) Discussion on SL positioning discovery and selection procedure Samsung discussion Rel-18 NR\_pos\_enh2

[R2-2303078](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303078_SL_Pos_Res.docx) Considerations on sidelink positioning resources Sony discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2303131](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303131%20Discussion%20on%20Sidelink%20Positioning.docx) Discussion on Sidelink Positioning LG Electronics Inc. discussion Rel-18

[R2-2303186](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303186%20Further%20discussion%20on%20sidelink%20positioning.docx) Further discussion on sidelink positioning OPPO discussion Rel-18 NR\_pos\_enh2

[R2-2303187](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303187%20Further%20discussion%20on%20%20anchor%20UE%20reslection%20for%20sidelink%20positioning.doc) Further discussion on anchor UE reselection for sidelink positioning OPPO discussion Rel-18 NR\_pos\_enh2

[R2-2303298](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303298_SLPosArch.docx) On SL Positioning Architecture Aspects Lenovo discussion Rel-18

[R2-2303365](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303365-pos-broadcast-v0%202.docx) SL positioning groupcast and broadcast Apple discussion Rel-18 NR\_pos\_enh2

[R2-2303366](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303366-reply-LS-on-SL-POS-security.docx) [DARFT] Reply LS on SL positioning groupcast and broadcast Apple LS out Rel-18 NR\_pos\_enh2 To:SA3

[R2-2303443](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303443-View%20on%20SL%20positioning%20procedure%20and%20signalling%20protocols%20for%20SL%20positioning.docx) View on SL ranging and positioning architecture and signalling procedures CEWiT discussion

[R2-2303497](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303497%20Discussion%20on%20sidelink%20positioning.docx) Discussion on sidelink positioning ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2303538](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303538%20Considerations%20on%20Sidelink%20positioning.doc) Considerations on Sidelink positioning CMCC discussion Rel-18 NR\_pos\_enh2

[R2-2303569](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303569%20Discussion%20on%20potential%20solutions%20for%20SL%20positioning.docx) Discussion on potential solutions for SL positioning Spreadtrum Communications discussion Rel-18

[R2-2303591](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303591_(Sidelink%20Positioning).docx) Sidelink Positioning Protocol (SLPP) Signaling and Procedures Qualcomm Incorporated discussion

[R2-2303703](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303703%20Sidelink%20.docx) Sidelink positioning Ericsson discussion Rel-18

[R2-2303753](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303753_Protocol%20considerations%20for%20Anchor%20UEs%20with(out)%20known%20location.doc) Protocol considerations for Anchor UEs with(out) known location Philips International B.V. discussion R2-2301890

[R2-2303993](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303993%20(R18%20NR%20POS%20A722%20SL%20POS).docx) Discussion on Sidelink positioning InterDigital Communications discussion Rel-18

[R2-2304182](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304182%20SL%20pos%20server.doc) On the support of SL positioning server functionality Philips International B.V. discussion

### 7.2.3 RAT-dependent integrity

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

Agenda item summary

R2-2304193 Summary of AI 7.2.3 on RAT-dependent integrity vivo discussion Rel-18 FS\_NR\_pos\_enh2

The following documents will not be individually treated

[R2-2302504](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302504%20Discussion%20on%20RAT-Dependent%20integrity.docx) Discussion on RAT-Dependent integrity CATT discussion Rel-18 NR\_pos\_enh2

[R2-2302581](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302581%20Discussion%20on%20RAT-dependent%20integrity.docx) Discussion on RAT-dependent Integrity Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

[R2-2302741](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302741_Integrity.docx) Further considerations on RAT dependent integrity Intel Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2302959](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302959%20Discussion%20on%20RAT-dependent%20positioning%20integrity.docx) Discussion on RAT-dependent positioning integrity vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2303184](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Docs\R2-2303184.zip) Consideration on RAT-dependent positioning integrity OPPO discussion Rel-18 NR\_pos\_enh2

[R2-2303230](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303230%20Discussion%20on%20RAT-dependent%20integrity.doc) Discussion on RAT-dependent integrity Lenovo discussion Rel-18

[R2-2303433](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303433%20Discussion%20on%20RAT-dependent%20positioning%20integrity.doc) Discussion on RAT-dependent positioning integrity Xiaomi discussion

[R2-2303495](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303495%20Discussion%20on%20RAT-dependent%20methods%20positioning%20integrity.docx) Discussion on RAT-dependent methods positioning integrity ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2303540](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303540.docx) Discussion on the integrity issues CMCC discussion Rel-18 NR\_pos\_enh2

[R2-2303571](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303571%20Discussion%20on%20solutions%20for%20integrity%20of%20RAT-dependent%20positioning%20techniques.docx) Discussion on solutions for integrity of RAT-dependent positioning techniques Spreadtrum Communications discussion Rel-18

[R2-2303682](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303682_(integrity).docx) Integrity of NR Positioning Technologies Qualcomm Incorporated discussion

[R2-2303705](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303705%20Integrity.docx) RAT Dependent positioning Integrity Ericsson discussion Rel-18

[R2-2303994](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303994%20(R18%20NR%20POS%20A723%20RAT%20dependent%20integrity).docx) Discussion on RAT dependent integrity InterDigital Communications discussion Rel-18

[R2-2304058](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304058%20Integrity%20Parameters%20Spec%20Impact.docx) Spec impact of RAT-dependent error sources for positioning integrity Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_pos\_enh2-Core

### 7.2.4 LPHAP

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

Agenda item summary

The following documents will not be individually treated

[R2-2302505](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302505%20Discussion%20on%20LPHAP.DOCX) Discussion on LPHAP CATT discussion Rel-18 NR\_pos\_enh2

[R2-2302580](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302580%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

[R2-2302589](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302589_LPHAP_Fraunhofer.docx) Enhancements for supporting LPHAP Fraunhofer IIS, Fraunhofer HHI discussion

[R2-2302742](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Docs\R2-2302742.zip) Further considerations on LPHAP Intel Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2302960](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302960%20Discussion%20on%20solution%20of%20LPHAP.docx) Discussion on solution of LPHAP vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2303079](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303079_LPHAP_v3.docx) Considerations on Low Power High Accuracy Positioning Sony discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2303185](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303185%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP OPPO discussion Rel-18 NR\_pos\_enh2

[R2-2303231](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303231%20Discussion%20on%20low%20power%20high%20accuracy%20positioning.doc) Discussion on low power high accuracy positioning Lenovo discussion Rel-18

[R2-2303367](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303367-PRS-DRX-alignment-v0.docx) Alignment between DRX and PRS Apple discussion Rel-18 NR\_pos\_enh2

[R2-2303434](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303434%20Discussion%20on%20LPHA%20positioning.doc) Discussion on LPHA positioning Xiaomi discussion

[R2-2303494](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303494%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2303539](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303539%20Considerations on LPHAP.doc) Considerations on LPHAP CMCC discussion Rel-18 NR\_pos\_enh2

[R2-2303570](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303570%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP Spreadtrum Communications discussion Rel-18

[R2-2303697](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303697_(LPHAP).docx) Enhancements for LPHAP Qualcomm Incorporated discussion

[R2-2303704](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303704%20LPHAP.docx) Discussion on Low Power High Accuracy Positioning Ericsson discussion Rel-18

[R2-2303886](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303886_Discussion%20on%20SRS%20configuration%20in%20RRC_INACTIVE.docx) Discussion on SRS configuration in RRC\_INACTIVE Samsung discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2303985](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303985%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP LG Electronics Inc. discussion Rel-18

[R2-2303995](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303995%20(R18%20NR%20POS%20A724%20LPHAP).doc) Discussion on LPHAP InterDigital Communications discussion Rel-18

[R2-2304059](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304059%20PRS%20and%20DRX%20configuration%20alignment.docx) PRS and DRX configuration alignment Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_pos\_enh2-Core R2-2301752

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

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

[R2-2302818](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302818%20Discussion%20on%20RAN1%20led%20positioning%20topics.docx) Discussion on RAN1 led positioning topics Huawei, HiSilicon discussion Rel-18

[R2-2302506](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302506%20Discussion%20on%20carrier%20phase%20positioning,%20bandwidth%20aggregation%20for%20positioning%20and%20Redcap%20positioning.docx) Discussion on carrier phase positioning, bandwidth aggregation for positioning and Redcap positioning CATT discussion Rel-18 NR\_pos\_enh2

[R2-2302743](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302743%20RAN1%20led%20items.docx) Considerations on other RAN1 led items Intel Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2303435](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303435%20Discussion%20on%20RedCap%20UE%20positioning.doc) Discussion on RedCap UE positioning Xiaomi discussion

[R2-2303496](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303496%20Discussion%20on%20BW%20aggregation%20and%20RedCap%20positioning.docx) Discussion on BW aggregation and RedCap poositioning ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2303541](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303541.docx) Discussion on the RedCap UE positioning CMCC discussion Rel-18 NR\_pos\_enh2

[R2-2303706](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303706%20RedCap.docx) RedCap positioning, carrier phase positioning, and bandwidth aggregation for positioning Ericsson discussion Rel-18

[R2-2303887](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303887_Discussion%20on%20bandwidth%20aggregation.docx) Discussion on bandwidth aggregation Samsung discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2303996](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303996%20(R18%20NR%20POS%20A725%20Others).docx) Discussion on positioning for RedCap positioning, carrier phase positioning, and bandwidth aggregation for positioning InterDigital Communications discussion Rel-18

## 7.9 Enhanced NR Sidelink Relay

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

Time budget: 1.5 TU

Tdoc Limitation: 4 tdocs

### 7.9.1 Organizational

Including incoming LSs and rapporteur inputs.

Incoming LS with “take into account” action

[R2-2302445](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302445_S2-2303381.docx) Reply LS on Differentiation of Layer2 ID and Coexistence of U2N/U2U (S2-2303381; contact: CATT) SA2 LS in Rel-18 5G\_ProSe\_Ph2 To:RAN2

Incoming LS with questions (discuss under agenda item 7.9.2)

[R2-2302442](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302442_S2-2207518.docx) LS on ProSe Authorization information related to UE-to-UE Relay operation to NG-RAN (S2-2207518; contact: LGE) SA2 LS in Rel-18 FS\_5G\_ProSe\_Ph2, NR\_SL\_relay\_enh To:RAN2, RAN3

Rapporteur work documents

[R2-2302994](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302994-Contents%20for%20rel-18%2038.300%20CR%20draft.docx) Contents for rel-18 38.300 CR draft LG Electronics Inc. discussion Rel-18 38.300

* [AT121bis-e][418][Relay] 38.300 relay CR draft (LG)

Scope: Collect comments on the CR outline in R2-2302994.

Intended outcome: Report to CB session and endorseable CR baseline

Deadline: Monday 2023-04-24 2359 UTC

### 7.9.2 UE-to-UE relay

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

Agenda item summary

R2-2304194 [Pre121bis-e][406][Relay] Summary of AI 7.9.2 on U2U relay (Lenovo) Lenovo discussion Rel-18

The following documents will not be individually treated

[R2-2302492](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302492%20Identification%20for%20bearer%20mapping%20and%20Connection%20establishment.docx) Identification for bearer mapping and Connection establishment NEC discussion NR\_SL\_relay\_enh-Core

[R2-2302601](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302601%20Disussion%20on%20U2U%20Relay.docx) Discussion on U2U Relay CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302643](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302643%20-%20Discussion%20on%20U2U%20Relay.docx) Discussion on U2U relay OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302701](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302701_Sidelink%20UE-to-UE%20Relaying_Intel.docx) Discussion on L2 UE-to-UE relaying aspects Intel Corporation discussion Rel-18 NR\_SL\_relay-Core

[R2-2302791](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302791%20Further%20issues%20on%20U2U%20relay.docx) Considerations on U2U relay (re)selection and Local ID assignment Nokia, Nokia Shanghai Bell discussion NR\_SL\_relay\_enh-Core R2-2301355

[R2-2302836](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302836_Control_Plane_Procedures_for_L2_U2U_relays.docx) Control Plane Procedures for Layer-2 UE-to-UE Relays Ericsson España S.A. discussion Rel-18

[R2-2302902](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302902_Discussion_on_Relay_reselection_Discovery.docx) Discussion on Relay (Re-)selection and Discovery Ericsson España S.A. discussion Rel-18

[R2-2302921](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302921%20(R18%20SL%20Relay%20WI_AI792%20RelayDiscoverySelection).doc) Discovery and Relay Selection for UE-to-UE Relays InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302922](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302922%20(R18%20SL%20Relay%20WI_AI792%20U2U%20Relays).doc) QoS and Adaptation Layer for UE-to-UE Relays InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302997](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302997-Control%20plane%20procedure%20and%20adaptaion%20layer%20for%20U2U%20relay.docx) Control plane procedure and adaptaion layer for U2U relay LG Electronics Inc. discussion Rel-18

[R2-2303004](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303004%20Discussion%20on%20Relay%20discovery%20and%20(re)selection.doc) Discussion on U2U Relay discovery and (re)selection ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303005](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303005%20Discussion%20on%20L2%20specific%20issues%20and%20gNB%20involvement%20in%20U2U%20Relay.doc) Discussion on U2U relay L2-specific functionality ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303012](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303012%20Multiplexing%20and%20UE%20ID%20in%20the%20adaptation%20layer.doc) Multiplexing and UE ID in the adaptation layer Fujitsu discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303088](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303088.doc) UE-to-UE relay (re)selection Sony discussion Rel-18 NR\_SL\_relay\_enh

[R2-2303222](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303222%20Discussion%20on%20L2%20U2U%20relay%20v1.0.docx) Discussion on L2 U2U relay Lenovo discussion Rel-18

[R2-2303336](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303336%20SRAP%20design%20for%20U2U%20sidelink%20relay%20-cln.doc) SRAP design for U2U Sidelink Relay Samsung R&D Institute UK discussion

[R2-2303339](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303339_Discussion%20on%20the%20common%20L2%20L3%20parts%20for%20U2U%20relaying.docx) Discussion on the common L2 L3 parts for U2U relaying vivo discussion

[R2-2303340](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303340_%20Discussion%20on%20the%20L2%20specific%20parts%20for%20U2U%20relaying.docx) Discussion on the L2 specific parts for U2U relaying vivo discussion

[R2-2303388](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303388%20Discussion%20on%20U2U%20relay%20issues.doc) Discussion on open issues on UE-to-UE Relay Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303486](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303486%20Discussion%20on%20UE-to-UE%20relay.doc) Discussion on UE-to-UE relay Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303506](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303506-%20Layer-2%20specific%20part%20on%20U2U%20Relay.docx) Layer-2 specific part on U2U Relay Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2303545](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303545%20Discussion%20on%20U2U%20relay.docx) Discussion on U2U relay CMCC discussion Rel-18 NR\_SL\_relay\_enh

[R2-2303572](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303572.doc) Discussion on UE-to-UE relay Spreadtrum Communications discussion Rel-18

[R2-2303608](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303608+Discussion%20on%20NR%20sidelink%20U2U%20relay.doc) Discussion on U2U relay China Telecom discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303648](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303648_U2U_relay.docx) Considerations for U2U L2 relay operations Kyocera discussion

[R2-2303782](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303782%20U2U%20relay%20discovery%20selection%20reselection%20SRAP%20QoS.docx) U2U relay – Relay UE discovery / (re)selection, SRAP, QoS Handling Beijing Xiaomi Mobile Software discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303934](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303934%20Discussion%20on%20aspects%20of%20AS%20layer%20configuration%20for%20L2%20U2U%20Relay.docx) Discussion on aspects of AS layer configuration for L2 U2U Relay ASUSTeK discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303935](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303935%20Discussion%20on%20E2E%20security%20for%20supporting%20L2%20UE-to-UE%20relay.docx) Discussion on E2E security for supporting L2 UE-to-UE relay ASUSTeK discussion Rel-18 NR\_SL\_relay\_enh-Core R2-2301538

[R2-2303989](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303989%20Integrated%20U2U%20relay%20discovery.doc) Integrated U2U relay discovery Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303990](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303990%20QoS%20and%20Bearer%20configuration%20for%20U2U%20relaying.doc) QoS and Bearer configuration for U2U relaying Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core R2-2301171

[R2-2303991](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303991_Sidelink%20U2U%20Discovery%20and%20reselection_Intel.docx) Discovery and relay reselection open aspects Intel Corporation discussion NR\_SL\_relay-Core

[R2-2304074](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304074-U2U.doc) UE-to-UE relay (re)selection Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2304123](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304123%20Discussion%20on%20L2%20U2U%20Relay%20v01.docx) Discussion on L2 U2U Relay MediaTek Inc. discussion Rel-18

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

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

Lossless i2x path switching (treat jointly)

[R2-2303110](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303110%20-%20Discussion%20on%20lossless%20data%20forwarding%20for%20inter-gNB%20service%20continuity.docx) Discussion on lossless data forwarding for inter-gNB service continuity OPPO, Xiaomi, Qualcomm Incorporated, Ericsson, Lenovo discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302923](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302923%20(R18%20SL%20Relay%20WI_AI793%20Lossless%20Service%20Continuity).doc) Lossless path switching from indirect to indirect/direct InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

Additional topics

[R2-2303006](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303006%20Further%20discussion%20on%20service%20continuity%20for%20SL%20relay.doc) Further discussion on service continuity for SL relay ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302493](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302493%20Support%20of%20Lossless%20Path%20Switching%20.docx) Support of Lossless Path Switching NEC discussion NR\_SL\_relay\_enh-Core

[R2-2302602](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302602%20Consideration%20on%20Service%20Continuity%20Enhancements%20for%20L2%20U2N%20Relay.docx) Considerations on Service Continuity Enhancements for L2 U2N Relay CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302859](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302859%20SL%20Relay%20lossless%20delivery.docx) Discussion on lossless data delivery during inter-gNB path switching Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_SL\_relay\_enh

[R2-2302860](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302860%20Service%20continuity%20issues%20for%20Inter-gNB%20path%20switching%20of%20L2%20U2N%20relay.docx) Discussion on service continuity issues for Inter-gNB path switching of L2 U2N relay Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_SL\_relay\_enh

[R2-2302869](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302869%20-%20lossless%20path%20switching%20and%20measurement%20event%20Z2.docx) Discussion on lossless path switching and measurement events Intel Corporation discussion Rel-18 NR\_SL\_relay-Core

[R2-2302903](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302903_Discussion_on_Inter_gNB_Service_Continuity.docx) Discussion on Inter-gNB Service Continuity Ericsson España S.A. discussion Rel-18

[R2-2302971](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302971_Discussion%20on%20Service%20Continuity%20Enhancements.docx) Discussion on Service Continuity Enhancements NEC Corporation discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302995](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302995-Path%20switching%20procedure%20for%20the%20service%20continuity%20enhancement.docx) Path switching procedure for the service continuity enhancement LG Electronics Inc. discussion Rel-18

[R2-2303089](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303089.doc) Service continuity enhancements for UE sidelink relay Sony discussion Rel-18 NR\_SL\_relay\_enh

[R2-2303117](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303117.docx) Discussion on service continuity enhancement Xiaomi discussion

[R2-2303223](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303223%20Service%20continuity%20for%20Inter-gNB%20path%20switching%20v1.0.docx) Service continuity for Inter-gNB path switching Lenovo discussion Rel-18

[R2-2303341](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303341_Remaining%20issues%20on%20service%20continuity%20enhancement%20for%20L2%20U2N%20relay.docx) Remaining issues on service continuity enhancement for L2 U2N relay vivo discussion

[R2-2303389](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303389%20Discussion%20on%20service%20continuity%20enhancement%20of%20L2%20U2N%20relay.doc) Discussion on Service continuity enhancement of L2 U2N relay Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303507](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303507-%20Scenarios%20and%20solution%20on%20lossless%20delivery%20during%20path%20switch%20from%20indirect%20path%20to%20target%20path.docx) Scenarios and solution on lossless delivery during path switch from indirect path to target path Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2303546](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303546%20Discussion%20on%20service%20continuity.docx) Discussion on service continuity CMCC discussion Rel-18 NR\_SL\_relay\_enh

[R2-2303558](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303558%20Discussion%20on%20service%20continuity.docx) Discussion on Service Continuity Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303564](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303564%20Service%20continuity%20enhancements%20support%20for%20L2%20U2N%20relay.doc) Service continuity enhancements support for L2 U2N relay Spreadtrum Communications discussion Rel-18

[R2-2303609](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303609_CP%20and%20UP%20aspects%20of%20inter-gNB%20path%20switching.docx) CP and UP aspects of inter-gNB path switching China Telecom discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2304075](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304075-U2N.doc) remaining issues for U2N path switching with lossless delivery Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2304124](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304124%20Lossless%20data%20delivery%20in%20the%20inter-gNB%20cases.docx) Lossless data delivery in the inter-gNB cases MediaTek Inc. discussion Rel-18

### 7.9.4 Multi-path relaying

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

Rapporteur update from RAN2#121

[R2-2303857](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303857%20Resubmission%20of%20%5bPre121%5d%5b407%5d%20Summary%20of%20AI%208.9.4%20MP.doc) Resubmitted proposals from [Pre121][407] Summary of AI 8.9.4 LG Electronics France discussion Rel-18 NR\_SL\_relay\_enh-Core

[HP proposals for easy agreement]

High Priority Proposals for Scenario 1

Proposal 1.8A: [HP] The concept of the existing ‘primary path and primary RLC entity’ is adopted for each MP split bearer configuration.

Proposal 1.8B: [HP] PDCP control PDU only transmits on the primary RLC entity same as legacy.

Discussion:

Nokia understand that the only argument for the primary RLC entity is that we already have it; from UP perspective they understand that it is only used to limit the transmission path when the data volume is low, and here they think both paths should be used.

ZTE agree with P1.8A and consider that the primary path also matters for the duplication scenario, and it would be better to follow the legacy behaviour. On P1.8B, they see that it targets the duplication scenario, i.e., PDCP CPDUs would not be duplicated, but for the split scenario they think there is no such restriction. OPPO agree with ZTE.

Huawei support the two proposals, and considering limited time, they think reusing the current mechanism is enough.

vivo also agree with ZTE and think we should not spend too much time.

Qualcomm support both proposals.

Ericsson are OK with the proposals, but want to clarify that it targets DRBs and we could capture that explicitly. LG indicate that the proposals do not intend to target DRBs only.

Nokia wonder if it means we reuse the existing mechanism, e.g., gNB configures which path is the primary. Chair understands we could change the details but we reuse the underlying concept. LG have the same understanding.

Agreements:

The concept of the ‘primary path and primary RLC entity’ is adopted for each MP split bearer configuration according to the existing definition.

In case of duplication, PDCP control PDU only transmits on the primary RLC entity same as legacy.

High Priority Proposals for Scenario 2

Proposal 2.4A: [HP] non-split SRB1 and 2 over indirect path is not supported in Scenario 2.

Proposal 2.4B: [HP] split SRB1 and 2 are supported in Scenario 2 and primary path of the split SRB 1 and 2 is always on direct path.

Proposal 2.6B: [HP] If UE-UE link failure is detected on indirect path in Scenario 2, the remote UE can report UE-UE link failure to gNB over direct path, based on what RAN2 will agree for Scenario 1 assuming that the corresponding procedure is agreed for Scenario 1.

Discussion:

NEC think for P2.6B, both relay and remote UE could report.

Xiaomi think P2.6B should be postponed until the mechanism for scenario 1 is clear.

LG think we have to support reporting to the gNB, and the details may need further discussion. Ericsson and Huawei agree with LG.

Lenovo wonder whether the remote UE can detect the failure in scenario 2; it seems to depend on the link technology. Ericsson think we agreed the details are out of RAN2 scope.

Agreements:

Non-split SRB1 and 2 over indirect path is not supported in Scenario 2.

Split SRB1 and 2 are supported in Scenario 2 and primary path of the split SRB 1 and 2 is always on direct path.

If UE-UE link failure is detected on indirect path in Scenario 2, the remote UE can report UE-UE link failure to gNB over direct path. Details of the reporting mechanism can be further discussed.

[Other proposal for easy agreement]

Proposal 3: Upon RRCReconfiguration message for indirect path addition from direct path, the remote UE sends the RRCReconfigurationComplete message to gNB via the added indirect path for both scenario 1 and 2, when split SRB1 is configured.

Discussion:

CATT have some concern because this would diverge from the legacy mechanism, so they foresee considerable spec impact.

Nokia understand that the reason we did this in Rel-17 was that there was no other option, but here we have both paths, and they think the gNB should control which path is used. E.g., direct path may be faster.

InterDigital agree with P3; they think we cannot really compare to legacy operation because it is not two separate cell groups, and this is needed for the idle/inactive relay.

ZTE agree with the principle of the proposal, but they think it could be more specific about the conditions; they see that it should be when split SRB1 with duplication (or with primary path as indirect path) is configured.

Apple agree with Nokia; considering P1.8A, they think we should follow the legacy operation and leave the path up to network implementation.

Huawei understand that the intention is that the complete message goes on the indirect path when duplication is configured. They understand that we have an FFS on whether the primary path can be the indirect path.

Qualcomm agree with the proposal as it is, and they assume that if the relay is a Rel-17 relay, the remote UE must use the indirect path.

[HP proposals for discussion]

High Priority Proposals for Scenario 1

Proposal 1.7A: [HP] The network is allowed to configure SRB1 and SRB2 on same path or different paths.

Proposal 1.7B: [HP] The bearer type (i.e. direct bearer, indirect bearer, or multi-path bearer) of SRB1 and SRB2 can be independently configured by the network.

Discussion:

Ericsson are not OK with allowing SRB1/SRB2 on different paths. Qualcomm also think they should be on the same path, and further that it should always be the direct path, which may be more reliable.

MediaTek think they should be on the same path and wonder about the motivation for configuring them differently.

LG indicate that the proposal reflects a split in the contributions. They think from a signalling perspective, different paths can be allowed, but the network can always choose to configure them on the same path.

Nokia agree that there is no motivation for different paths, but they think it can be left to the network. They think RAN2 could decide not to optimise for different paths.

vivo see no need for a restriction on separating SRB1 and SRB2 if SRB1 is on the direct path. On P1.7B, they think the indirect bearer could be removed.

InterDigital are OK with Nokia’s suggestion on P1.7A. On P1.7B, they are a bit sceptical about removing the indirect bearer, because we already agreed that we can have non-split indirect SRB1.

vivo think SRB1 should not be able to go on the indirect path; they do not see a motivation for this. Xiaomi think it is motivated because the remote UE may be moving out of direct coverage and have the indirect path be more reliable; they do not see a technical problem with using the indirect path.

Huawei think non-split SRB1 on indirect path is not needed; there is a restriction in legacy operation that non-split SRB1 cannot be configured on SCG, and we already agreed that the PCell is the Uu cell, so they do not see the coverage argument as correct. They would like to avoid the spec and test complexity of allowing it.

OPPO think the indirect bearer should be omitted from P1.7B.

ZTE agree with the original proposals; the UE may initially access through the indirect path, at which time only the indirect bearer can be configured, and they think the network should not be forced to reconfigure to the direct path if the indirect path is good enough.

Ericsson think we should not do flexibility for its own sake. They see that we know the direct path is good and do not see why we should use the indirect path for signalling. They think we would only add the direct path in the case mentioned by ZTE if the UE is near cell centre.

InterDigital think we should keep the existing agreements allowing non-split SRB on either path and having the PCell on the direct path.

Ericsson note that the flexibility is still there through using split SRB if necessary. InterDigital understand that this would lead to cases where the UE was required to transmit on the direct path even though indirect is more reliable.

Samsung think the key point is whether we can configure non-split SRB1/SRB2 on indirect path. They see no reason to restrict SRB2 but maybe some reason to restrict SRB1, since the PCell is on the direct path. The bearers have different priorities and they think it might be preferable to have higher reliability for SRB1.

High Priority Proposals for Scenario 2

Proposal 2.1B: [HP] The remote UE reports relay UE’s ID to gNB for indirect path addition, when both UEs are in RRC\_CONNECTED. FFS which UE ID is used as relay UE’s ID. FFS for relay UE’s serving cell information.

Proposal 2.1C: [HP] RAN2 is requested to discuss whether to support more than one relationship between relay UE and remote UE.

Proposal 2.3: [HP] RAN2 is requested to discuss whether to support indirect path change in Scenario 2

[MP proposals, discussion depending on available time]

Middle Priority Proposals for Scenario 1

Proposal 1.8C: [MP] Dynamic duplication (de)activation of a DRB is supported based on MAC CE on the direct path for MP split bearer with duplication. FFS whether dynamic duplication (de)activation is supported for a SRB. FFS whether to reuse the existing Duplication Activation/Deactivation MAC CE and Duplication RLC Activation/Deactivation MAC CE. FFS whether to support (de)activation on indirect path.

Proposal 1.8D: [MP] When configuring duplication for a MP split bearer, RRC can set the state of PDCP duplication (either activated or deactivated) at the time of (re-)configuration.

Proposal 1.8E: [MP] The existing data volume threshold (i.e. ul-DataSplitThreshold) can be reused for MP split bearer.

* [AT121bis-e][419][Relay] Remaining high-priority proposals on multi-path (LG)

Scope: Discuss the remaining HP proposals from R2-2303857.

Intended outcome: Report to CB session

Deadline: Monday 2023-04-24 2359 UTC

[R2-2302924](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302924%20(R18%20SL%20Relay%20WI_AI794%20MultipathAspects).doc) Design Aspects for Multi-path InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[SRB configurations, overlap with previous document]

Proposal 1: Split SRB1/2 is supported for scenario 2 (up to network choice whether to configure it).

Proposal 2: Non-split SRB1/2 is allowed to be configured on the indirect path for scenario 2 (up to network choice whether to configure it).

Proposal 3: SRB1/SRB2 can be configured in different paths for both scenario 1 and scenario 2.

[Split bearers]

Proposal 4: DL transmission on split SRB1/SRB2 without duplication can be performed on either direct or indirect path (as decided by the network).

Proposal 5: UL transmission on split SRB1/SRB2 without duplication can be performed on either direct or indirect path. FFS on the associated conditions at the UE.

Proposal 6: Split bearer threshold-like mechanism is supported for a split DRB without duplication in multipath for determining when a UE can transmit data to either path. FFS on the differences with legacy DC split bearer threshold.

Proposal 7: For a split bearer without duplication, the network controls the amount of data routed by the UE to each of the paths when the split bearer threshold is exceeded.

Proposal 8: Discuss whether to support a CA-like approach where a split bearer can be configured with a single RLC entity common to both paths.

[Failure handling]

Proposal 9: In case of Uu-RLF, when non-split SRB1 is available on the indirect path and not suspended, the UE triggers report to network via the indirect path to report the failure, otherwise, RRC Re-establishment is initiated.

Proposal 10: New RRC messages are defined for 1) direct path failure (which the UE reports on the indirect path) and 2) indirect path failure (which the UE reports on the direct path). The messages contain at least a path-dependant failure type and measurement results.

Proposal 11: In addition to Uu-RLF and PC5-RLF, failure report is triggered by the remote UE in multipath and explicitly indicated to the network (with a failure type) for at least the following causes: 1) random access problems on direct path, 2) max number of RLC retransmissions on direct and indirect paths, 3) T312 expiry on the direct path, 4) LBT failure on the direct path, 5) BFR failure on the direct path, 6) BH RLF on the direct path, 7) reception of Uu RLF notification from relay UE on the indirect path, 8) reception of relay UE RRC failure on the indirect path, and 9) reception of relay UE cell reselection on the indirect path. FFS on the need to consider reception of relay UE HO on the indirect path as a separate cause.

Proposal 12: The UE starts a T316-like timer when the failure occurs in the primary path configured for SRB1 and the UE is configured to start T316-like timer.

Proposal 13: Upon detection of RLF on the path on which non-split SRB is configured, the remote UE can perform a re-establishment-like procedure via the other path. FFS on details.

[RRCReconfigurationComplete, overlap with previous document]

Proposal 14: When the indirect path is added and split SRB1 is configured, the remote UE transmits the RRCReconfigurationComplete message on the indirect path. Otherwise (SRB1 configured on direct path only), the remote UE always transmits a PC5-RRC message. FFS whether to define a new PC5-RRC message.

[Configuration for multi-path]

Proposal 15: RAN2 assumes a Rel17 relay UE can be configured by the network for multipath operation by configuring split SRB1 for this case.

[Idle/inactive cases]

Proposal 16: Multipath at the remote UE can be maintained when the relay UE is moved to IDLE/INACTIVE.

Proposal 17: A remote UE transmits a PC5-RRC message prior to initiating uplink transmission on a split bearer when the relay UE is in RRC\_IDLE/RRC\_INACTIVE.

Proposal 18: A Rel18 relay UE that serves as a multipath relay can be configured with different conditions for when to transmit discovery message. Details, including how to handle relay UEs that serve as both legacy relays and multipath relays, are FFS.

Proposal 19: A remote UE in multipath that is released to RRC\_IDLE/RRC\_INACTIVE can be configured to maintain either the direct path or relayed path.

Scenario 2 aspects: sections 2.3.2, 2.5, and 2.7. Prioritise section 2.5 (potential urgent LS to SA2)

[R2-2303342](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303342_Remaining%20Issues%20for%20Multi-path%20Scenario%201%202.docx) Remaining Issues for Multi-path Scenario 1&2 vivo discussion Late

[Section 2.5: LS to SA2]

Proposal 18 RAN2 to send a LS to SA2 for the requirements to support multi-path transmission authorization and subscription function for a UE acting as the remote UE in Scenario-2.

Discussion:

Qualcomm are OK to send an LS, but they wonder if it also applies to the relay UE.

MediaTek wonder what kind of response we would expect from SA2; will they indicate if the procedures can be reused?

LG wonder if the LS is really needed, since we assumed no impact on SA2 from scenario 2. vivo indicate that the authorisation is necessary, and the remote UE may report the relay UE ID, which may not work as specified for scenario 2. On MediaTek’s point, they understand that SA2 just need to take the issue into account.

Qualcomm think it makes sense to have authorisation for scenario 2.

LG think we should indicate that we did not anticipate CN impact but just want to avoid an inconsistency. Nokia, MediaTek, and Apple agree.

[Section 2.3.2: scenario 2]

Proposal 12 For Scenario-2, RAN2 to confirm the WA into agreement, i.e., leave it to relay and remote UE implementation on how to trigger the RRC\_IDLE/RRC\_INACTIVE target relay UE to initiate RRC connection establishment procedure.

Proposal 13 For Scenario-2, RAN2 assumes that remote UE will report the inter-UE relationship only after relay UE successfully entering RRC\_CONNECTED in this Release.

Proposal 14 For Scenario-2, RAN2 to decide which Option(s) is agreeable for remote UE to report the inter-UE relationship (e.g., relay UE’s C-RNTI and serving NCGI) to the gNB:

- Option 1: remote UE oriented solution, i.e., remote UE autonomously reports the inter-UE relationship with the relay UE after it triggers the relay UE successfully entering RRC\_CONNECTED.

- Option 2: NW controlled solution, i.e., remote UE only reports the inter-UE relationship with the relay UE after the gNB indication/reconfiguration.

[Section 2.7: bearer mapping in scenario 2]

Proposal 26 For Scenario-2, RAN2 confirm the WA into agreement, i.e. “Bearer identification except LCID is not needed in L2 PDU over Uu link in Scenario-2. Only 1:1 bearer mapping is supported over Uu link for the indirect path.”.

Proposal 27 For Scenario-2, detailed mapping configuration can include one indicator of remote UE’s RB to differentiate between RBs of relay UE itself and the ones of remote UE.

* [AT121bis-e][420][Relay] LS to SA2 on authorisation for scenario 2 (vivo)

Scope: Draft an LS to SA2 for the concern with support of multi-path transmission authorization and subscription function for a UE acting as the remote or relay UE in Scenario-2, calling their attention to the possible spec divergence. RAN2 background can be provided to the extent needed for the issue to be clear. Expected action is “take into account”.

Intended outcome: Approved LS (without CB if possible)

Deadline: Monday 2023-04-24 2359 UTC

[R2-2302569](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302569%20-%20Discussion%20on%20multi-path%20Relay_V2.docx) Discussion on multi-path SL relay OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302603](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302603_Discussion%20on%20Multi-path%20Scenario1.docx) Discussion on Multi-path Scenario 1 CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302604](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302604_Discussion%20on%20Multi-path%20scenario2.docx) Discussion on Multi-path Scenario 2 CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2302702](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302702_Multi-path%20Relaying_Intel.docx) Open aspects of multi-path relaying Intel Corporation discussion Rel-18 NR\_SL\_relay-Core

[R2-2302904](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302904_Discussion_on_multipath%20relays.docx) Discussion on Multipath Relays Ericsson España S.A. discussion Rel-18

[R2-2302973](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302973_Discussion%20on%20Multi-path%20Relaying.docx) Discussion on Multi-path Relaying NEC Corporation discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303007](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303007%20Further%20discussion%20on%20the%20support%20of%20multi-path%20relaying.docx) Further discussion on the support of multi-path relaying ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303013](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303013%20Discussions%20on%20Multi-path.doc) Discussions on multi-path Fujitsu discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303090](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303090.doc) Multi-path relaying discussion Sony discussion Rel-18 NR\_SL\_relay\_enh

[R2-2303116](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303116.docx) Discussion on multi-path Xiaomi discussion

[R2-2303208](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303208%20Remaining%20issues%20on%20multipath%20SL%20relay.docx) Remaining issues on multipath SL relay Nokia, Nokia Shanghai Bell discussion

[R2-2303224](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303224%20Multi-path%20establishment%20and%20operation%20v1.0.docx) Multi-path establishment and operation Lenovo discussion Rel-18

[R2-2303390](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303390%20Discussion%20on%20control%20plan%20design%20for%20Multi-path.doc) Discussion on control plan design for Multi-path Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303391](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303391%20Discussion%20on%20remaiining%20issues%20on%20Scenario%202%20for%20Multi-path.doc) Discussion on remaining issues on Scenario 2 for Multi-path Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303487](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303487%20Discussion%20on%20multi-path%20operation.docx) Discussion on multi-path operation Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303508](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303508-Open%20issues%20on%20multi-path%20relay%20for%20Scenario%201%20and%20Scenario%202.docx) Open issues on multi-path relay for Scenario 1 and Scenario 2 Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2303547](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303547%20Discussion%20on%20multi-path%20scenario%201.docx) Discussion on multi-path scenario 1 CMCC discussion Rel-18 NR\_SL\_relay\_enh

[R2-2303548](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303548%20Considerations%20on%20multi-path%20scenario%202.docx) Considerations on multi-path scenario 2 CMCC discussion Rel-18 NR\_SL\_relay\_enh

[R2-2303565](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303565%20Discussion%20on%20multi-path%20relaying.doc) Discussion on multi-path relaying Spreadtrum Communications discussion Rel-18

[R2-2303610](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303610%20Discussion%20on%20remaining%20issues%20of%20multi-path%20relaying.docx) Discussion on remaining issues of multi-path relaying China Telecom discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303647](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303647_multipath_relay.docx) Considerations for multipath relay operations for Scenario 1 Kyocera discussion

[R2-2303655](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303655%20Discussion%20on%20Multi-path%20relaying.docx) Discussion on Multi-path relaying Lenovo discussion NR\_SL\_relay\_enh-Core

[R2-2303659](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303659_Discussion%20on%20Sidelink%20Relay%20multi-path%20control%20plane%20procedure%20for%20Scenario%201.docx) Discussion on Sidelink Relay multi-path control plane procedure for Scenario 1 Philips International B.V. discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303738](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303738_SL-MP-Relaying_Throughput.docx) Discussion on Throughput Enhancements in Sidelink Multiplath Relaying Fraunhofer IIS, Fraunhofer HHI discussion Rel-18

[R2-2303859](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303859%20Multi-path%20relaying%20for%20NR%20sidelink%20relay%20enhancements.doc) Multi-path relaying for NR sidelink relay enhancements LG Electronics France discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303868](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303868_SLRelay_S1&2_v2.doc) Discussion sidelink relay enhancement for scenario 1&2 Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303936](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303936%20Resource%20allocation%20and%20BSR%20reporting%20for%20multi-path.docx) Resource allocation and BSR reporting for multi-path ASUSTeK discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2304076](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304076-MP_Cplane.doc) C-plane aspects of multi-path Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2304077](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304077-MP_scenario2.doc) remaining issue for supporting senario2 Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2304122](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304122%20Discussion%20on%20Multipath%20v01.docx) Discussion on Multipath MediaTek Inc. discussion Rel-18

### 7.9.5 DRX

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

[R2-2302644](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302644%20-%20Discussion%20on%20DRX%20for%20L2%20U2N%20relay.docx) Discussion on DRX for L2 U2N relay OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303118](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303118.docx) Discussion on SL DRX in U2N relay Xiaomi discussion

[R2-2303488](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303488%20Discussion%20on%20sidelink%20DRX%20for%20L2%20U2N%20relay.doc) Discussion on sidelink DRX for L2 U2N relay Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2303509](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303509-SL%20DRX%20for%20L2%20U2N%20relay.docx) SL DRX for L2 U2N relay Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

## 7.24 NR TEI18

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

Time budget: 1 TU

### 7.24.1 TEI proposals by Other Groups

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

[R2-2302413](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302413_R1-2302201.docx) LS on 1-symbol PRS (R1-2302201; contact: ZTE) RAN1 LS in Rel-18 TEI18 To:RAN2, RAN3 Cc:RAN4

[R2-2303498](C:\\Users\\mtk16923\\Documents\\3GPP Meetings\\202304 - RAN2_121bis-e, Online\\Extracts\\R2-2303498 Correction on 1-symbol PRS in 38.331.docx" \o "C:\Users\mtk16923\Documents\3GPP Meetings\202304 - RAN2_121bis-e, Online\Extracts\R2-2303498 Correction on 1-symbol PRS in 38.331.docx) Correction on 1-symbol PRS in 38.331 ZTE Corporation CR Rel-18 38.331 17.4.0 4014 - B NR\_pos\_enh2, TEI18

[R2-2303499](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303499%20Correction%20on%201-symbol%20PRS%20in%2037.355.docx) Correction on 1-symbol PRS in 37.355 ZTE Corporation CR Rel-18 37.355 17.4.0 0437 - B TEI18, NR\_pos\_enh2

[R2-2303500](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303500%20%5bdraft%5d%20Reply%20LS%20on%201-symbol%20PRS.docx) [Draft] Reply LS on 1-symbol PRS ZTE Corporation LS out Rel-18 TEI18, NR\_pos\_enh2 To:RAN1 Cc:RAN3

### 7.24.2 TEI proposals by RAN2

Items initiated in RAN2.

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

Proposals previously submitted (to be handled initially by email)

Emergency service with relays

[R2-2302648](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2302648%20-%20Discussion%20on%20emergency%20service%20for%20SL%20Relay.docx) Discussion on emergency service for SL Relay OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core, TEI18

* [AT121bis-e][415][Relay] Emergency service for relays (OPPO)

Scope: Discuss the proposals in R2-2302648 and attempt to develop a CR if the proposals are agreeable in principle. Also check if there is a need to align with SA2 on relay setting of the cause code for emergency service.

Intended outcome: Report and agreeable CR

Deadline: Monday 2023-04-24 2359 UTC

Yaw and APC (handled in email discussion [AT121bis-e][408]

[R2-2303033](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303033%20-%20Updated%20proposal%20on%20Yaw%20and%20APC.docx) Updated proposal on Yaw and APC extensions Swift Navigation discussion Rel-18

GNSS LOS/NLOS assistance information

[R2-2303163](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303163.docx) GNSS LOS/NLOS assistance information-Follow up Vodafone, Spirent, Ericsson, Telecom Italia discussion Rel-18

[R2-2303196](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303196.docx) GNSS LOS/NLOS assistance information Vodafone, Spirent, Ericsson, Telecom Italia CR Rel-18 37.355 17.4.0 0436 - B TEI18

[R2-2303200](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303200.docx) GNSS LOS/NLOS posSIB broadcast assistance information Vodafone, Spirent, Ericsson, Telecom Italia CR Rel-18 38.331 17.4.0 3998 - B TEI18

[R2-2303206](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303206.docx) GNSS LOS/NLOS posSIB broadcast assistance information Vodafone, Spirent, Ericsson, Telecom Italia CR Rel-18 36.331 17.4.0 4923 - B TEI18

* [AT121bis-e][412][POS] GNSS LOS/NLOS information (Vodafone)

Scope: Discuss documents R2-2303163 / R2-2303196 / R2-2303200 / R2-2303206 and attempt to bring the CRs to an agreeable condition.

Intended outcome: Report and agreeable CRs

Deadline: Friday 2023-04-21 1000 UTC

Positioning of remote UEs

[R2-2303559](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303559.docx) Positioning of remote UEs MediaTek Inc., CATT, Huawei, HiSilicon, Qualcomm Incorporated, Xiaomi, Intel Corporation, vivo discussion Rel-18 TEI18

[R2-2303702](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303702%20RelPos.docx) Relay based Positioning for emergency calls and posSIB forwarding Ericsson discussion Rel-18

* [AT121bis-e][413][POS] Positioning for remote UEs (CATT)

Scope: Discuss the proposals/TPs in R2-2303559 and R2-2303702 and attempt to converge to agreeable CRs.

Intended outcome: Report and agreeable CRs

Deadline: Friday 2023-04-21 1000 UTC

Local cartesian coordinates

[R2-2303698](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303698_(local%20coordinates).docx) Support of Local Cartesian Coordinates in LPP Qualcomm Incorporated discussion

* [AT121bis-e][414][POS] Local cartesian coordinates (Qualcomm)

Scope: Discuss the proposals/TP in R2-2303698 and attempt to converge to an agreeable CR.

Intended outcome: Report and agreeable CR

Deadline: Friday 2023-04-21 1000 UTC

New proposals: positioning

[R2-2303123](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303123.doc) Discussion on how to support posSIB(s) forwarding Xiaomi discussion

[R2-2304007](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2304007%20(7.24.2)%20multiple%20QoS%20handling%20in%20POS%20for%20latency%20reduction.docx) Introduction of multiple QoS in positioning for latency reduction Samsung R&D Institute UK discussion

New proposals: relays

[R2-2303746](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202304%20-%20RAN2_121bis-e,%20Online\Extracts\R2-2303746%20U2N%20Relay%20UE%20operation%20Threshold%20Conditions%20-%20Impact%20of%20UE%20Mobility%20-%20R2%23121bis-e.doc) U2N Relay UE operation Threshold Conditions: Impact of UE Mobility Philips International B.V., FirstNet, ASUSTek, NEC, MediaTek, Lenovo discussion Rel-18 NR\_SL\_relay\_enh R2-2212276