3GPP TSG-RAN WG2 Meeting #120 R2-22xxxxx

Toulouse, France, November, 2022

Source: Session Chair (MediaTek)

Title: Report from session on positioning and sidelink relay

# 4 EUTRA Rel-16 and earlier

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

## 4.3 Positioning corrections Rel-16 and earlier

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

Documents in this agenda item will be handled by email. No web conference is planned for this agenda item.

# 5 NR Rel-15 and Rel-16

Essential corrections only.

Tdoc Limitation: 10 tdocs in total for all sub agenda items.

## 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)

### 5.3.1 General and Stage 2 corrections

Including incoming LSs, 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.

Incoming LS

[R2-2211150](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211150_R1-2210618.docx) LS on DL PRS search window (R1-2210618; contact: Qualcomm) RAN1 LS in Rel-16 NR\_pos-Core To:RAN2

* Noted

AI summary

[R2-2213116](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2213116_(Summary%20of%20AI%205.3.1%20(Stage%202)%20and%205.3.3%20(LPP))_v2.docx) Summary of Rel-15 and Rel-16 NR Positioning Support AIs 5.3.1 and 5.3.3 Qualcomm Incorporated discussion Rel-16 NR\_pos-Core

[DL-PRS Search Window]

Proposal 1: The CRs in

R2-2212229, Correction to DL-PRS Search Window calculation, Qualcomm Incorporated, CR Rel-16 37.355 16.8.0 0391 - F NR\_pos-Core

R2-2212231, Correction to DL-PRS Search Window calculation, Qualcomm Incorporated, CR Rel-17 37.355 17.2.0 0392 – A NR\_pos-Core

are essential corrections.

Agreements:

Proposal 1: The CRs in

R2-2212229, Correction to DL-PRS Search Window calculation, Qualcomm Incorporated, CR Rel-16 37.355 16.8.0 0391 - F NR\_pos-Core

R2-2212231, Correction to DL-PRS Search Window calculation, Qualcomm Incorporated, CR Rel-17 37.355 17.2.0 0392 – A NR\_pos-Core

[DL-PRS Capability]

Proposal 2: The CRs in

R2-2211420, Corrections of LPP capabilities on DL-RPS, CATT, CR Rel-16 37.355 16.8.0 0388 - F NR\_pos-Core

R2-2211421, Corrections of LPP capabilities on DL-RPS, CATT, CR Rel-17 37.355 17.2.0 0389 - A NR\_pos-Core

are essential corrections. Update the inter-operability statement on the Cover Sheet.

Agreement:

Proposal 2: The CRs in

R2-2211420, Corrections of LPP capabilities on DL-RPS, CATT, CR Rel-16 37.355 16.8.0 0388 - F NR\_pos-Core

R2-2211421, Corrections of LPP capabilities on DL-RPS, CATT, CR Rel-17 37.355 17.2.0 0389 - A NR\_pos-Core

are essential corrections. Update the inter-operability statement on the Cover Sheet.

[associated-DL-PRS-ID in IE NR-DL-PRS-BeamInfo]

Proposal 3: RAN2 to discuss and decide whether the CRs inThe CRs in

R2-2212347, Correction of NR DL-PRS BeamInfo attribute associated-DL-PRS-ID field description, Ericsson, CR Rel-16 37.355 16.8.0 0393 – F NR\_pos-Core

R2-2212348, Correction of NR DL-PRS BeamInfo attribute associated-DL-PRS-ID field description, Ericsson, CR Rel-17 37.355 17.2.0 0394 – A NR\_pos-Core

are not essential corrections or not.

Discussion:

Samsung indicate the intention is agreeable and the signalling reduction cannot work well with the current field descriptions.

Qualcomm think the field description should be aligned with the Rel-17 BeamAntennaInfo.

Nokia wonder when both associatedDL-PRS-ID and lcs-GCS-TranslationParameter are present, if the behaviour is clear with the current change.

Intel would like to understand if there are impacted implementations in the field.

* [AT120][401][POS] associated-DL-PRS-ID in IE NR-DL-PRS-BeamInfo (Ericsson)

Scope: Review the CRs in R2-2212347 and R2-2212348 and update for consistency and clarity.

Intended outcome: Agreeable CRs

Deadline: Wednesday 2022-11-16 1800

[Missing GNSS Types in GNSS-SSR-OrbitCorrections]

Proposal 4: The CRs in

R2-2212349, Adding missing and correcting GNSS Types in GNSS-SSR-OrbitCorrections, Ericsson, u-blox, Swift Navigation, CR Rel-16 37.355 16.8.0 0395 – F NR\_pos-Core

R2-2212350, Adding missing and correcting GNSS Types in GNSS-SSR-OrbitCorrections, Ericsson, u-blox, Swift Navigation, CR Rel-17 37.355 17.2.0 0396 – A NR\_pos-Core

are not essential corrections.

Agreement:

Proposal 4: The CRs in

R2-2212349, Adding missing and correcting GNSS Types in GNSS-SSR-OrbitCorrections, Ericsson, u-blox, Swift Navigation, CR Rel-16 37.355 16.8.0 0395 – F NR\_pos-Core

R2-2212350, Adding missing and correcting GNSS Types in GNSS-SSR-OrbitCorrections, Ericsson, u-blox, Swift Navigation, CR Rel-17 37.355 17.2.0 0396 – A NR\_pos-Core

are not essential corrections.

[Meaning of GNSS IOD SSR]

Proposal 5: RAN2 to discuss and decide whether the CRs in

R2-2212351, Clarifying the meaning of GNSS IOD SSR to avoid different interpretations, Ericsson, u-blox, Swift Navigation, CR Rel-16 37.355 16.8.0 0397 – F NR\_pos-Core

R2-2212352, Clarifying the meaning of GNSS IOD SSR to avoid different interpretations, Ericsson, u-blox, Swift Navigation, CR Rel-17 37.355 17.2.0 0398 – A NR\_pos-Core

are essential corrections or not.

Discussion:

Qualcomm do not think the change is essential; they think a NOTE in the Rel-18 spec could be considered, but for the UE to use the IOD differently would probably violate existing specs.

Ericsson think a change is needed, but it could be discussed if it should be in the field description or a NOTE; they think it is important to understand what information can be used together.

Qualcomm think the UE may receive the assistance data from different LMFs, and the IOD would only be valid within one LMF, so it is not possible to guarantee that the UE is never using assistance data with the same IOD. So they understand that this could not be a testable requirement.

Ericsson are OK with a NOTE, but they think it should be from Rel-16. Qualcomm do not see anything broken and think implementations already behave as the NOTE would indicate.

Ericsson think it would be a service to the UE to clarify how the information is intended to be used.

Agreement:

R2-2212351 and R2-2212352 are not pursued in Rel-16/17. RAN2 understand that a NOTE with a similar intention could be considered for Rel-18.

[Definition of GNSS-SSR-URA]

Proposal 6: The CRs in

R2-2212353, Correcting field description and definition of GNSS-SSR-URA, Ericsson, u-blox, Swift Navigation, CR Rel-16 37.355 16.8.0 0399 – F NR\_pos-Core

R2-2212354, Correcting field description and definition of GNSS-SSR-URA, Ericsson, u-blox, Swift Navigation, CR Rel-17 37.355 17.2.0 0400 – A NR\_pos-Core

are essential corrections. Correct the Rel-17 CR Category on the Cover Sheet.

Agreement:

R2-2212353, Correcting field description and definition of GNSS-SSR-URA, Ericsson, u-blox, Swift Navigation, CR Rel-16 37.355 16.8.0 0399 – F NR\_pos-Core

R2-2212354, Correcting field description and definition of GNSS-SSR-URA, Ericsson, u-blox, Swift Navigation, CR Rel-17 37.355 17.2.0 0400 – A NR\_pos-Core

are essential corrections. Correct the Rel-17 CR Category on the Cover Sheet.

[Satellite Yaw Angle]

Proposal 7: RAN2 to discuss and decide whether the CRs in

R2-2212516, Update Stage 2 SSR Phase Bias description to include yaw, Swift Navigation, Mitsubishi Electric Corporation, Ericsson, CR Rel-16 36.305 16.4.0 0111 – F NR\_pos-Core

R2-2212518, Update Stage 2 SSR Phase Bias description to include yaw, Swift Navigation, Mitsubishi Electric Corporation, Ericsson, CR Rel-17 36.305 17.2.0 0112 – A NR\_pos-Core

R2-2212535, Update Stage 2 SSR Phase Bias description to include yaw, Swift Navigation, Mitsubishi Electric Corporation, Ericsson, CR Rel-16 38.305 16.8.0 0113 – F NR\_pos-Core

R2-2212536, Update Stage 2 SSR Phase Bias description to include yaw, Swift Navigation, Mitsubishi Electric Corporation, Ericsson, CR Rel-17 38.305 17.2.0 0114 – A NR\_pos-Core

R2-2212507, Addition of missing yaw angle and rate in SSR Phase Bias message (TS 37.355), Swift Navigation, Mitsubishi Electric Corporation, Ericsson, CR Rel-16 37.355 16.8.0 0401 – F NR\_pos-Core

R2-2212511, Addition of missing yaw angle and rate in SSR Phase Bias message (TS 37.355),Swift Navigation, Mitsubishi Electric Corporation, Ericsson, CR Rel-17 37.355 17.2.0 0402 – A NR\_pos-Core

are essential corrections or not.

Discussion:

CATT wonder what the real status of RTCM is on these fields and when/whether they will specify them. They also see it as an enhancement rather than a correction.

Swift indicate that there is an interoperability concern; compact SSR assumes zero yaw, but not all correction providers send information for zero yaw. In this respect they see it as a correction; they understand that RTCM have identified yaw as something to be supported in principle, but there is not yet a formal agreement, and it is specified as part of the IGS standard and needed so that the UE and network are in agreement. However, Swift acknowledge the BC issue from the rapporteur’s summary, and they think a separate IE for the phase bias would be a reasonable direction, for Rel-16 or later.

Qualcomm understand that Swift’s analysis would mean the compact SSR messages do not work, which is not the case in practice. A service provider sending AD with compact SSR and nonzero yaw assumption would be an error.

Intel are OK with introducing a separate IE for the phase bias and a UE capability.

Qualcomm think there would need to be a new posSIB as well, and they have doubts about changing Rel-16 broadcast for something that is not broken.

Nokia think this looks like added functionality, which may not be justified for Rel-16; they have not considered the posSIB impacts, but in general they think this would be OK as an addition to Rel-18, with some time needed to think about the posSIBs.

Swift do not think compact SSR is broken, but it was designed for a narrow purpose and we generalised it in Rel-16 (e.g. the grid definitions), and they see this as a similar extension that should have been done at the time.

Ericsson think it would be good to be complete, and there will eventually be providers of data with yaw included. They see this as an overlooked item from Rel-16.

[Satellite Antenna Phase Centre Corrections]

Proposal 7: RAN2 to discuss and decide whether the Proposal 2 in

R2-2212544, Discussion and TP on Yaw Angle and Antenna Phase Center corrections for SSR assistance data, Swift Navigation, Mitsubishi Electric Corporation, Ericsson discussion Rel-16 NR\_pos-Core, is an essential corrections or not:

"Proposal 2: Discuss and agree to add the satellite Antenna Phase Center message in the SSR assistance data.

LS to RAN3 to agree on new posSibType2-xy for GNSS-SSR-SatelliteAPC in TS 36.455/38.455.

Agree to develop the corresponding CRs for TS 37.355, TS 36.305/38.305, TS 36.331/38.331 and TS 36.455/38.455".

* [AT120][402][POS] Yaw angle and APC (Swift)

Scope: Discuss the two proposals labelled P7 from R2-2213116, determine if a change to Rel-16 is warranted, and draft updated CRs if there is support.

Intended outcome: Agreeable CRs

Deadline: Wednesday 2022-11-16 1800

Yaw angle/APC

[R2-2212544](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212544%20-%20SSR%20Yaw%20and%20APC%20(Swift).docx) Discussion and TP on Yaw Angle and Antenna Phase Center corrections for SSR assistance data Swift Navigation, Mitsubishi Electric Corporation, Ericsson discussion Rel-16 NR\_pos-Core

[R2-2212516](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212516_36305_(CR0111)_R16.docx) Update Stage 2 SSR Phase Bias description to include yaw Swift Navigation, Mitsubishi Electric Corporation, Ericsson CR Rel-16 36.305 16.4.0 0111 - F NR\_pos-Core

[R2-2212518](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212518_36305_(CR0112)_R17.docx) Update Stage 2 SSR Phase Bias description to include yaw Swift Navigation, Mitsubishi Electric Corporation, Ericsson CR Rel-17 36.305 17.2.0 0112 - A NR\_pos-Core

[R2-2212535](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212535_38305_(CR0113)_R16.docx) Update Stage 2 SSR Phase Bias description to include yaw Swift Navigation, Mitsubishi Electric Corporation, Ericsson CR Rel-16 38.305 16.8.0 0113 - F NR\_pos-Core

[R2-2212536](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212536_38305_(CR0114)_R17.docx) Update Stage 2 SSR Phase Bias description to include yaw Swift Navigation, Mitsubishi Electric Corporation, Ericsson CR Rel-17 38.305 17.2.0 0114 - A NR\_pos-Core

### 5.3.2 RRC corrections

Including impact to 36.331, 38.331, and 38.306.

[R2-2211258](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211258%20Correction%20to%20on-demand%20SI%20request%20for%20posSIB.docx) Correction to on-demand SI request for posSIB Huawei, HiSilicon CR Rel-16 38.331 16.10.0 3573 - F NR\_pos-Core

Discussion:

Samsung agree in principle with the CR, but they think a minor revision is needed: si-BroadcastStatus should be modified to posSI-BroadcastStatus in one place.

vivo are generally OK, but wonder if the first condition should also be split between posSIB and normal SIB. Huawei think a condition could be added to the scheduling information list as well; they are not sure about vivo’s comment but think the two kinds of SIBs can never be included in the same message.

Lenovo agree with the intention in principle, but they think there is a simpler solution in the wording; they have submitted CRs to the main session that cover this aspect among others, and they indicate that the CRs were sent to offline discussion. So they would propose merging this discussion into offline [011] from the main session. Huawei understand that the second option was not pursued in the main session discussion; Lenovo indicate that there was a separate submission of Rel-16 CRs, and discussion [011] is directed to those (not to the Rel-17 proposal that was not pursued).

Huawei agree this could be included in the existing discussion for Rel-17 TEI17 CRs.

* [AT120][403][POS] Correction to on-demand SI request for posSIB (Huawei)

Scope: Check and update the proposal in R2-2211258, and align with related discussions from the main session on on-demand SI updates in Rel-16 and Rel-17.

Intended outcome: Agreeable CR if necessary

Deadline: Wednesday 2022-11-16 1800

### 5.3.3 LPP corrections

[R2-2211420](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\37355_CR0388_(Rel-16)_R2-2211420.docx) Corrections of LPP capabilities on DL-RPS CATT CR Rel-16 37.355 16.8.0 0388 - F NR\_pos-Core

* Update interoperability as “If a UE signals the missing values, a legacy LMF would not be able to receive the complete UE capability”
* Agreed with this update as R2-2213123

[R2-2211421](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\37355_CR0389_(Rel-17)_R2-2211421.docx) Corrections of LPP capabilities on DL-RPS CATT CR Rel-17 37.355 17.2.0 0389 - A NR\_pos-Core

* Update interoperability as “If a UE signals the missing values, a legacy LMF would not be able to receive the complete UE capability”
* Agreed with this update as R2-2213124

[R2-2212229](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212229_(CR%2037355_Rel16_PRS-SearchWindow).docx) Correction to DL-PRS Search Window calculation Qualcomm Incorporated CR Rel-16 37.355 16.8.0 0391 - F NR\_pos-Core

* Agreed

[R2-2212231](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212231_(CR%2037355_Rel17_PRS-SearchWindow).docx) Correction to DL-PRS Search Window calculation Qualcomm Incorporated CR Rel-17 37.355 17.2.0 0392 - A NR\_pos-Core

* Agreed

[R2-2212347](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212347%20BeamInfo.docx) Correction of NR DL-PRS BeamInfo attribute associated-DL-PRS-ID field description Ericsson CR Rel-16 37.355 16.8.0 0393 - F NR\_pos-Core

[R2-2212348](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212348%20BeamInfo.docx) Correction of NR DL-PRS BeamInfo attribute associated-DL-PRS-ID field description Ericsson CR Rel-17 37.355 17.2.0 0394 - A NR\_pos-Core

[R2-2212349](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212349%20Orbit.docx) Adding missing and correcting GNSS Types in GNSS-SSR-OrbitCorrections Ericsson, u-blox, Swift Navigation CR Rel-16 37.355 16.8.0 0395 - F NR\_pos-Core

* Not pursued

[R2-2212350](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212350%20Orbit.docx) Adding missing and correcting GNSS Types in GNSS-SSR-OrbitCorrections Ericsson, u-blox, Swift Navigation CR Rel-17 37.355 17.2.0 0396 - A NR\_pos-Core

* Not pursued

[R2-2212351](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212351%20IOD.docx) Clarifying the meaning of GNSS IOD SSR to avoid different interpretations Ericsson, u-blox, Swift Navigation CR Rel-16 37.355 16.8.0 0397 - F NR\_pos-Core

* Not pursued

[R2-2212352](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212352%20IOD.docx) Clarifying the meaning of GNSS IOD SSR to avoid different interpretations Ericsson, u-blox, Swift Navigation CR Rel-17 37.355 17.2.0 0398 - A NR\_pos-Core

* Not pursued

[R2-2212353](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212353%20URA.docx) Correcting field description and definition of GNSS-SSR-URA Ericsson, u-blox, Swift Navigation CR Rel-16 37.355 16.8.0 0399 - F NR\_pos-Core

* Agreed

[R2-2212354](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212354%20URA.docx) Correcting field description and definition of GNSS-SSR-URA Ericsson, u-blox, Swift Navigation CR Rel-17 37.355 17.2.0 0400 - A NR\_pos-Core

* Category on coversheet to be corrected to A
* Agreed with this update as R2-2213125

[R2-2212507](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212507_37355_(CR0401)_R16.docx) Addition of missing yaw angle and rate in SSR Phase Bias message (TS 37.355) Swift Navigation, Mitsubishi Electric Corporation, Ericsson CR Rel-16 37.355 16.8.0 0401 - F NR\_pos-Core

[R2-2212511](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212511_37355_(CR0402)_R17.docx) Addition of missing yaw angle and rate in SSR Phase Bias message (TS 37.355) Swift Navigation, Mitsubishi Electric Corporation, Ericsson CR Rel-17 37.355 17.2.0 0402 - A NR\_pos-Core

### 5.3.4 MAC corrections

# 6 NR Rel-17

## 6.7 NR Sidelink relay

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

Tdoc Limitation: 3 tdocs

### 6.7.0 In-principle agreed CRs

CRs AIP from RAN2#119bis-e.

[R2-2211211](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38351_CR0012r1_(Rel-17)_R2-2211211%20-%20Correction%20for%20L2%20U2N%20Relay.docx) Correction for L2 U2N Relay OPPO CR Rel-17 38.351 17.2.0 0012 1 F NR\_SL\_relay-Core R2-2210972

* [AT120][411][Relay] Rel-17 SRAP CR (OPPO)

Scope: Update the CR in R2-2211211 with decisions of this meeting.

Intended outcome: Agreeable CR

Deadline: Wednesday 2022-11-16 1800

[R2-2211747](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38331_CR3549r2_(Rel-17)_R2-2211747_Misc%20RRC%20CR%20for%20SL%20relay.docx) Misc RRC CR for SL relay Huawei, HiSilicon CR Rel-17 38.331 17.2.0 3549 2 F NR\_SL\_relay-Core R2-2210902

* [AT120][412][Relay] Rel-17 relay RRC CR (Huawei)

Scope: Update the CR in R2-2211747 with decisions of this meeting.

Intended outcome: Agreeable CR

Deadline: Thursday 2022-11-17 1800

[R2-2212202](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38322_R2-2212202_CR0050_Correction%20on%20RLC%20for%20SL%20relay.docx) RLC correction for SL relay Samsung CR Rel-17 38.322 17.1.0 0050 1 F NR\_SL\_relay-Core R2-2210915

* [AT120][413][Relay] Rel-17 relay RLC CR (Samsung)

Scope: Update the CR in R2-2212202 with decisions of this meeting.

Intended outcome: Agreeable CR

Deadline: Wednesday 2022-11-16 1800

[R2-2212203](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38323_R2-2212203_CR0104_Correction%20on%20PDCP%20for%20SL%20relay.docx) PDCP correction for SL relay Samsung CR Rel-17 38.323 17.2.0 0104 1 F NR\_SL\_relay-Core R2-2210916

Discussion:

Huawei think there may be impact to PDCP from the cast type discussion.

* [AT120][414][Relay] Rel-17 relay PDCP CR (Samsung)

Scope: Update the CR in R2-2212203 with decisions of this meeting if necessary.

Intended outcome: Agreeable CR

Deadline: Thursday 2022-11-17 1800

[R2-2212433](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38.304_CR0288(Rel-17)_R2-2212433-%20Correction%20on%2038.304%20for%20SL%20relay.docx) Correction on 38.304 for SL relay Ericsson, Nokia, Nokia Shanghai Bell CR Rel-17 38.304 17.2.0 0288 2 F NR\_SL\_relay-Core R2-2210970

* [AT120][415][Relay] Rel-17 relay 38.304 CR (Ericsson)

Scope: Update the CR in R2-2212433 with decisions of this meeting.

Intended outcome: Agreeable CR

Deadline: Thursday 2022-11-17 1800

### 6.7.1 General and stage 2 corrections

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

LS already treated at RAN2#119bis-e

[R2-2211102](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Docs\R2-2211102.zip) LS on setting RRC establishment cause value when relay UE has its own service (C1-225453; contact: vivo) CT1 LS in Rel-17 5G\_ProSe To:RAN2 Cc:SA2

* Withdrawn

Incoming LSs

[R2-2211128](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211128_S2-2209277.doc) Reply LS on Cast Type for Discovery message (S2-2209277; contact: Qualcomm) SA2 LS in Rel-17 5G\_ProSe, NR\_SL\_relay-Core To:RAN2 Cc:CT1

* Noted

[R2-2211142](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211142_R1-2210494.docx) Reply LS on TP to TR 37.985 (R1-2210494; contact: Huawei) RAN1 LS in Rel-17 NR\_SL\_relay-Core To:RAN2

* Noted

[R2-2211147](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211147_R1-2210585.docx) Reply LS on resource pool index in DCI Format 3\_0 (R1-2210585; contact: vivo) RAN1 LS in Rel-17 NR\_SL\_relay-Core To:RAN2

* Noted

[R2-2211141](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211141_R1-2210492.docx) Reply LS to RAN2 on Per-FS L1 feature for NR sidelink discovery BC-list (R1-2210492; contact: OPPO) RAN1 LS in Rel-17 NR\_SL\_enh-Core, NR\_SL\_relay-Core To:RAN2

* Noted

Cast type for discovery message (related to R2-2211128)

[R2-2212135](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38321_CR1484_(Rel-17)_R2-2212135%20-%20Correction%20the%20cast%20type%20for%20discovery%20message%20in%20AS%20layer.docx) Correction the cast type for discovery message in AS layer CATT CR Rel-17 38.321 17.2.0 1484 - F NR\_SL\_relay\_enh-Core

[R2-2212514](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212514%20-%20NR%20SL%20Discovery%20casttype.doc) SL discovery casttype clarification Qualcomm Incorporated discussion Rel-17 NR\_SL\_relay-Core

Discussion (joint):

Apple point out there is an additional CR from them. They understand that the logic of the CATT CR is correct, but it should only be applicable to the discovery message, and they see that the receiver side needs some processes to facilitate the filtering. They are OK with a note.

ZTE also have a related CR and would prefer to use a NOTE, to minimise the medication of procedural text.

LG think the discovery message can be transmitted by any cast type, and the discovery message can be handled by filtering based on the first destination address.

Huawei share a similar view to LG, that the discovery response message is unicast, and although there is no cast indicator specified by SA2, the UE implementation may be able to identify the cast type. They see that some MAC impact may be needed.

ZTE indicate that their CR takes the approach that the discovery cast type in SUI is useless, so the RRC spec may also be impacted.

* [AT120][407][Relay] Discovery cast type (Qualcomm)

Scope: Discuss the contributions related to the LS in R2-2211128, evaluate the proposed approaches, and converge on a solution.

Intended outcome: Report to CB session and agreeable CR if possible

Deadline: Wednesday 2022-11-16 1800

TP to TR 37.985 (related to R2-2211142)

[R2-2211748](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211748%20Discussion%20on%20TP%20to%20TR%2037.985%20(RAN1%20reply%20LS%20R1-2210494).docx) Discussion on TP to TR 37.985 (RAN1 reply LS R1-2210494) Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

* Noted

Discussion:

ZTE think since there is no consensus in RAN2 or RAN1, it would be helpful to send an LS to SA2.

vivo agree with Huawei that it would be better not to pursue anything; they understand that we indicated our technical view to RAN1, but RAN1 need us to take a conclusion as the leading WG

Resource pool index (related to R2-2211147)

[R2-2211669](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211669%20Further%20discussion%20on%20RAN1%20reply%20LS%20in%20R1-2210585%20on%20resource%20pool%20index%20in%20DCI%20Format%203_0.docx) Further discussion on RAN1 reply LS in R1-2210585 on resource pool index in DCI Format 3\_0 vivo discussion

[R2-2211670](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211670%20Correction%20on%20dedicated%20mode-1%20discovery%20transmission%20pool%20in%20TS%2038.306.docx) Correction on dedicated mode-1 discovery transmission pool in TS 38.306 vivo CR Rel-17 38.306 17.2.0 0833 - F NR\_SL\_relay-Core

[R2-2211671](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211671%20Correction%20on%20dedicated%20mode-1%20discovery%20transmission%20pool%20in%20TS%2038.331.docx) Correction on dedicated mode-1 discovery transmission pool in TS 38.331 vivo CR Rel-17 38.331 17.2.0 3629 - F NR\_SL\_relay-Core

Discussion:

vivo understand that we need to use the resource pool ID.

LG have a similar CR, in which they think the communication resource pool is indexed first.

Ericsson think the issue is relevant and updating the description makes sense, but they are not sure about the capability; there is already a discovery capability, and they find this one redundant. They think mode 1 scheduling for discovery is already broken in the previous release.

OPPO think given the agreement in Rel-16, we can still pursue the proposal to put the index for the communication pool first and then the index for the discovery pool. For the capability, they somewhat agree with Ericsson that the new capability can be avoided, and we need to consider that mode 1 scheduling for discovery is a per-band capability; on balance they would prefer no additional capability.

CATT share Ericsson and OPPO’s view on the capability. Considering the first proposal, they wonder why we do not also add a description in the sidelink Tx pool scheduling IE.

vivo do not have a strong view on the capability and can accept Ericsson’s suggestion. For the first proposal, they think we need to use the resource pool ID as the reference for resource pools in both lists, and in light of that, they think we may not need to specify the order of the reference between the two lists; the ID is globally unique within a UE, so we can just use the resource pool IDs to reference any resource pool. This corresponds to option 1 in OPPO’s paper.

Huawei have the same view as Ericsson on the capability; for P1, they think the proposals from OPPO and vivo are both feasible, but they prefer the OPPO proposal for less specification impact.

Apple have a similar view to Huawei; for the index order, they prefer that the Rel-16 pools be indexed first. In light of vivo’s comment, they consider that the pool is configured in dedicated RRC signalling.

vivo indicate that we cannot use an index (e.g. position of entries) to do a global reference to the pools, and we have to use the resource pool ID value, which is globally unique.

Samsung have the same view as Ericsson on the capability; on P1, they prefer OPPO’s version to simplify the spec change.

vivo request some clarification on the OPPO proposal: Does it rely on the index order rather than the globally unique ID? OPPO clarify that they did not take the ID into account. vivo would prefer to down-select between the two, but can accept OPPO’s solution.

Agreements:

Proposal 1 R2 confirms the indexing of the configured Tx resource pools, when there is only sl-TxPoolScheduling, or only sl-DiscTxPoolScheduling, should be based on R16 spec, and thus is not a R17 specific issue.

Proposal 2 R2 confirm when both sl-TxPoolScheduling and sl-DiscTxPoolScheduling are configured, the index of the latter one is defined after the index of the former one, and within each pool type, and within each pool type, R16 index definition rule is used without further change.

Details can be handled in update of RRC rapporteur CR.

Discovery capability (related to R2-2211141)

[R2-2211212](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211212%20-%20Discussion%20on%20R1-2210492.docx) Discussion on R1-2210492 OPPO discussion Rel-17 NR\_SL\_enh-Core, NR\_SL\_relay\_enh-Core

[R2-2211213](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38306_CR0824_(Rel-17)_R2-2211213%20-%20Correction%20for%20NR%20SL%20discovery%20capability_V03.docx) Correction for NR SL discovery capability OPPO, Intel CR Rel-17 38.306 17.2.0 0824 - F NR\_SL\_enh-Core, NR\_SL\_relay\_enh-Core

[R2-2211214](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38331_CR3571_(Rel-17)_R2-2211214%20-%20Correction%20for%20NR%20SL%20discovery%20capability_V02.docx) Correction for NR SL discovery capability OPPO, Intel CR Rel-17 38.331 17.2.0 3571 - F NR\_SL\_enh-Core, NR\_SL\_relay\_enh-Core

Discussion:

OPPO indicate the point is to design the signalling for the per-FS discovery capability in line with the RAN1 guidance.

Huawei have two questions: (1) There is an indication added for the communication BC, to indicate whether the per-FS capability is applicable to discovery; but they understand that we normally do not derive a capability from one BC to another BC, because it may be difficult from the network side to distinguish which BCs are the same. (2) The new IEs added seem similar to existing ones, and they wonder if we could reuse the existing parameters for communication.

OPPO indicate on the first question, the main reason is to avoid double reporting per BC of the per-FS capability, so the capability relies on the communication BC list, and in the discovery BC list we would have only the BCs that support only discovery and not communication. On the second question, they are not sure what IEs Huawei have a concern with.

Huawei indicate that the new IEs for discovery (BandParametersSidelinkDiscovery) overlap with the parameters already included in the communication capability. OPPO understand that our LS to RAN1 indicated that we have the communication capability and are not sure if it should be reported for discovery as well, and the response indicated that it should be added to the BC list for discovery.

Huawei wonder why we reuse BandParametersSidelinkEUTRA-NR.

* [AT120][408][Relay] Discovery capability signalling (OPPO)

Scope: Starting from the CRs in R2-2211213 and R2-2211214, converge on agreeable signalling details.

Intended outcome: Endorsable CRs

Deadline: Wednesday 2022-11-16 1800

CR to 37.340

[R2-2211672](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\37340_CR0351_(Rel-17)_R2-2211672_Correction%20to%20TS%2037.340%20on%20Sidelink%20based%20U2N%20Relay.docx) Correction to TS 37.340 on Sidelink based U2N Relay vivo CR Rel-17 37.340 17.2.0 0351 - F NR\_SL\_relay-Core

CRs to 38.300

[R2-2211806](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211806%20Corrections%20on%20SRAP%20bearer%20mapping.docx) Corrections on SRAP bearer mapping ASUSTeK CR Rel-17 38.300 17.2.0 0580 - F NR\_SL\_relay-Core

[R2-2211900](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211900%20Corrections%20to%20TS%2038.300%20for%20SL%20relay.docx) Corrections to TS 38.300 for SL relay ZTE, Sanechips, Apple CR Rel-17 38.300 17.2.0 0582 - F NR\_SL\_relay-Core

[R2-2212067](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212067-%20CR0584%20Corrections%20for%20sideling%20relay%20in%20stage%202%20specification%20v2.0.docx) Corrections for sideling relay in stage 2 specification Lenovo Information Technology CR Rel-17 38.300 17.2.0 0584 - F NR\_SL\_relay-Core

* [AT120][410][Relay] Rel-17 relay stage 2 CRs (vivo)

Scope: Check the CRs in R2-2211672 / R2-2211806 / R2-2211900 / R2-2212067 and merge agreeable ones.

Intended outcome: Agreed CR (by email if possible)

Deadline: Thursday 2022-11-17 1800

Rapporteur CR

[R2-2211749](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38331_CR3638_(Rel-17)_R2-2211749_RRC%20corrections%20for%20SL%20relay.docx) RRC corrections for SL relay Huawei, HiSilicon CR Rel-17 38.331 17.2.0 3638 - F NR\_SL\_relay-Core

* [AT120][409][Relay] Rel-17 relay RRC CR (Huawei)

Scope: Check and update the CR ins R2-2211749 with decisions of this meeting.

Intended outcome:

Deadline: Thursday 2022-11-17 1800

### 6.7.2 Control plane corrections

Including connection management, SI delivery, paging, access control for remote UE, and service continuity.

AI summary

[R2-2213117](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2213117%20%5bPre120%5d%5b402%5d%5bRelay%5d%20Summary%20of%20agenda%20item%206.7.2.docx) [Pre120][402][Relay] Summary of agenda item 6.7.2 on relay control plane (Huawei) Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

Proposal 1: Revise the IPA CR R2-2211747 by removing the change “… enter RRC\_IDLE, and …” in clause 5.3.7.2.

Proposal 2: The intentions of R2-2211674, Change #1 in R2-2211949, R2-2212066, R2-2212204 are agreeable, and the detailed wording can be checked in CR update.

Proposal 3: The following proposals or contributions are to be discussed together with RAN1 LS R2-2211147 (Reply LS on resource pool index in DCI Format 3\_0): P1 and P2 in R2-2211210, R2-2211606, Change #3 in R2-2212136, R2-2212399, and R2-2212694.

Proposal 4: R2-2211899 is to be discussed together with SA2 LS R2-2211128 (Reply LS on Cast Type for Discovery message).

Proposal 9: R2-2212434 is to be discussed together with RAN1 LS R2-2211141 (Reply LS to RAN2 on Per-FS L1 feature for NR sidelink discovery BC-list).

Proposal 5: RAN2 confirm that Uu threshold condition does not restrict discovery monitoring (it is sufficient that remote UE checks Uu threshold before relay (re)selection), and agree the following changes. The detailed wording can be further checked in CR update.

– To remove the Uu threshold condition on Remote UE’s discovery monitoring in 5.8.3.2, 5.8.14.1, 5.8.15.1;

– To add “and for NR sidelink U2N Relay (re)selection” in the general procedure in 5.8.15.1;

– Confirm the last meeting agreement that the change #4 in R2-2210625 (to TS 38.304) is agreeable, i.e. remove restriction on discovery monitoring.

Proposal 6: For full configuration, to clarify the following aspects in 5.3.5.11:

– If the UE is acting as L2 U2N Remote UE after reconfiguration with sync or during re-establishment or RRC resume, it does not apply default L1 parameters and default MAC Cell Group configuration as specified in 9.2.2.

– L2 U2N Remote UE applies default configuration of SL-RLC1 for SRB1.

– When the target is a L2 U2N Relay UE, the Remote UE only applies T311 but not applies T310 and constants N310, N311.

Proposal 7: The intention of removing “AS threshold checking” from the condition of “consider no NR sidelink U2N Relay UE to be selected” in clause 5.8.15.3 is agreeable, and the detailed change can be checked during CR update.

Proposal 8: RAN2 can discuss the following if time allows:

– A: Upon handover, relay UE doesn’t send NotificationMessageSidelink message, if the PCell doesn’t change.

– B: OOC Remote UE in RRC\_IDLE/INACTIVE can use preconfigured resource if the forwarded SIB12 doesn’t include normal pool and exception pool, from the moment the UE initiates RRC connection establishment or RRC connection resume, until receiving an RRCReconfiguration including sl-ConfigDedicatedNR, or receiving an RRCRelease or an RRCReject.

– C: How to enhance the serving relay reporting if consider there is power imbalance between SL-RSRP and SD-RSRP:

 1. Adding a new flag that indicates whether the reported value is an SL-RSRP or an SD-RSRP

 2. Reporting a compensated value instead of the measured SL-RSRP:

 2a) The measured SL-RSRP is increased, by the reporting UE by the difference between its maximum and the actually used transmission power over the given PC5 unicast link

 2b) The measured SL-RSRP is increased, by the reporting UE, by the pathloss over the given PC5 unicast link

 2c) The measured SL-RSRP is increased, by the reporting UE by the sl-HystMin of the serving cell of the L2N Remote UE.

Discussion:

On P2, Ericsson were not sure about the intention of R2-2211674. vivo understand that this is a case where the SL RLC entity, not the Uu RLC entity, should be released.

Huawei indicate that the scenario is that the remote UE is released to RRC\_INACTIVE when connected to a relay UE, and in this case the remote UE may want to keep the PC5 unicast link, so the SL RLC entity is still there. When the remote UE wants to resume to RRC\_CONNECTED, the remote UE needs to apply the default SL RLC configuration, and we do not currently explain how to handle the RLC entity in this case; vivo’s proposal is that if there is such an entity, the UE needs to release it and re-establish it if necessary. Ericsson wonder why this is necessary when we still have the PC5 link.

vivo think if the UE decides to release the PC5 link, the PC5-RLC entity will certainly be released, and if it does not release the PC5 link, current operation still requires the UE to release a Uu RLC entity that does not exist.

Ericsson understand that the wording may need to be massaged.

On P5, Xiaomi think it is necessary to clarify that the threshold only applies to relay discovery, not to non-relay discovery. Huawei think this is common understanding.

On P7, Xiaomi think this was previously discussed and companies felt the current spec is fine. They see it as a cosmetic change. Huawei agree it was discussed last meeting, but they think the reason for disagreement then was an incorrect “Reason for change”, and this version has this point clarified; they see the spec as clearer with this change. Apple want to clarify that the detailed wording can still be discussed.

On P8A, LG do not support it because they think the relay should send a notification message to the remote UE, allowing the remote UE to prepare for relay reselection.

ZTE think the issue on SyncRef for remote UE from their contribution also needs to be discussed.

Ericsson think P8A is a bit of an optimisation.

Qualcomm also think this has been discussed in the past, and they agree with LG.

Xiaomi understand companies would prefer to have the remote UE decide whether to reselect, but they see that in the current spec, upon reception of the notification message, the remote UE has to perform re-establishment, and there is no room for the remote UE to keep the connection in this case.

Lenovo agree with Ericsson.

Huawei think on the point from Xiaomi, the reason we specify that the remote UE will trigger re-establishment is to avoid group handover, and they see that this is a handover case even though the PCell does not change.

On P8B, Apple wonder if this is really a critical issue; a gNB would normally configure the pools, and they see this as more of a misconfiguration. Ericsson think we cannot force the gNB to always provide the pools; it is up to gNB implementation, and this CR addresses the case where the gNB does not provide it.

Xiaomi understand that there is a view that the network can always provide the pools, but they see this as an unreasonable restriction on the network, and they think preconfiguration should be allowed in this case; they do not consider that this breaks the legacy principle of operation, since it only allows the UE OOC to use preconfiguration.

Huawei agree with Apple that this is not a very reasonable network behaviour. On Xiaomi’s comment that the proposal is only applicable OOC, they do not agree since the IC case has the same situation and the remote UE may need to obtain the configuration from SIB12. MediaTek and Qualcomm agree with Huawei.

OPPO have the same view as Huawei; they understand that previously we had the exceptional pool in SIB12, and this CR introduces a case where the UE would need to use preconfiguration IC. If we allow this, they understand that the historical rule in this respect would be changed.

Ericsson clarify that the intention of the proposal is for IC UEs to go to connected mode to get the pools from dedicated signalling.

Apple want to understand why this proposal for IC UEs does not defeat the purpose of using a relay; they think it is still more correct for the network to configure the pools.

Xiaomi understand for the IC UE, the UE should reselect to the cell and not depend on the relay any more, but the OOC UE would be able to use preconfiguration.

Huawei think this proposal has been discussed several times on the reflector and pursuing it further would not be so helpful.

On P8C, Ericsson think this is a performance optimisation and it is too late.

Samsung think we have discussed the issue previously and agreed not to handle the power imbalance issue, so they see it as an optimisation.

LG think the levels can be totally different, and they wonder how the remote UE can recognise that the SD-RSRP and SL-RSRP are coming from the same relay UE.

Nokia indicate that the problem is that the UE is sending either SL-RSRP or SD-RSRP, and the gNB does not know what is sent; the ranges can be totally different, and the gNB cannot do anything with these values. So they do not see it as an enhancement, and they think the earlier agreement from RAN2#117 on this point needs to be revisited.

Huawei have some sympathy and think in the previous meeting we only discussed whether separate thresholds need to be configured for SL-RSRP and SD-RSRP; there was a majority view then that we do not need to do the differentiation, but here they see that there is no good way to do the comparison.

vivo wonder even if we distinguish them what the gNB will do differently when it receives the measurement reports; they are not sure the gNB can do much.

Apple think the power imbalance issue cannot be solved by just reporting the quantities separately, and they would rather not take a partial solution.

LG think the gNB can recognise which one is being reported based on the L2ID of the relay UE.

Ericsson agree with Apple; the issue involves both UE and gNB, the real reason is the underlying power imbalance, and we should have a complete solution from both sides. They also think a similar situation was previously discussed and left to UE implementation.

Agreements:

Proposal 1: Revise the IPA CR R2-2211747 by removing the change “… enter RRC\_IDLE, and …” in clause 5.3.7.2.

Proposal 2: The intentions of R2-2211674, Change #1 in R2-2211949, R2-2212066, R2-2212204 are agreeable, and the detailed wording can be checked in CR update.

Proposal 5 (modified): RAN2 confirm that Uu threshold condition does not restrict relay discovery monitoring (it is sufficient that remote UE checks Uu threshold before relay (re)selection), and agree the following changes. The detailed wording can be further checked in CR update.

– To remove the Uu threshold condition on Remote UE’s discovery monitoring in 5.8.3.2, 5.8.14.1, 5.8.15.1;

– To add “for NR sidelink U2N Relay (re)selection” in the general procedure in 5.8.15.1;

– Confirm the last meeting agreement that the change #4 in R2-2210625 (to TS 38.304) is agreeable, i.e. remove restriction on discovery monitoring.

Proposal 6: For full configuration, to clarify the following aspects in 5.3.5.11:

– If the UE is acting as L2 U2N Remote UE after reconfiguration with sync or during re-establishment or RRC resume, it does not apply default L1 parameters and default MAC Cell Group configuration as specified in 9.2.2.

– L2 U2N Remote UE applies default configuration of SL-RLC1 for SRB1.

– When the target is a L2 U2N Relay UE, the Remote UE only applies T311 but not applies T310 and constants N310, N311.

Proposal 7: The intention of removing “AS threshold checking” from the condition of “consider no NR sidelink U2N Relay UE to be selected” in clause 5.8.15.3 is agreeable, and the detailed change can be checked during CR update.

R2-2211898 to be checked as part of the RRC CR discussion.

The following documents will not be individually treated

[R2-2211210](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211210%20-%20Discussion%20on%20left%20issues%20for%20CP.docx) Discussion on left issues for CP OPPO discussion Rel-17 NR\_SL\_relay-Core

[R2-2211296](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211296.doc) Discussion on the AS layer condition for a remote UE SHARP Corporation discussion NR\_SL\_relay-Core

[R2-2211606](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211606%20Discussion%20on%20the%20support%20of%20discovery%20RP%20scheduling.doc) Discussion on the support of discovery RP scheduling Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

[R2-2211673](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211673_Discussion%20on%20a%20questionable%20change%20in%20IPA%20CR%20R2-2210902.docx) Discussion on a questionable change in IPA CR R2-2210902 vivo discussion

[R2-2211674](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38331_CR3630_(Rel-17)_R2-2211674_Correction%20to%20RLC%20handling%20upon%20reception%20of%20RRCRelease%20message%20with%20suspendConfig.docx) Correction to RLC handling upon reception of RRCRelease message with suspendConfig vivo CR Rel-17 38.331 17.2.0 3630 - F NR\_SL\_relay-Core

[R2-2211750](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211750%20Remaining%20CP%20corrections%20for%20SL%20relay.docx) Remaining CP correction for sidelink relay Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

[R2-2211872](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211872.docx) Correction on handover notification forwarding Xiaomi CR Rel-17 38.331 17.2.0 3653 - F NR\_SL\_relay-Core

[R2-2211873](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211873.docx) Correction on remote UE's resource allocation Xiaomi, Ericsson CR Rel-17 38.331 17.2.0 3654 - F NR\_SL\_relay-Core

[R2-2211898](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38331_CR3724_(Rel-17)_R2-2211898%20Correction%20on%20sync%20reference%20resource%20selection%20for%20remote%20UE.docx) Correction on sync reference resource selection for remote UE ZTE, Sanechips CR Rel-17 38.331 17.2.0 3724 - F NR\_SL\_relay-Core

Discussion:

Huawei think this offers the risk of misalignment between the remote and relay UEs.

vivo think for the sync source selection, we have a priority order, and even if gNBeNB is configured as the source, it is possible for the UE to select other sync sources if the indicated one cannot be found; so they think the UE should be able to work anyway.

ZTE think based on the current specification, if the gNB configures itself as the highest priority for synchronisation, the UE cannot select another synchronisation source, and the CR adds a condition to skip this case and select another source. So they think the CR enables the same behaviour described by vivo.

vivo think if there are different understandings, we may need to check company views. If ZTE are right, there could be a real blocking issue.

Ericsson agree with Huawei and think we should stick with the existing specification.

vivo wonder if we should send an LS to RAN1 if there is no convergence in RAN2.

[R2-2211899](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211899%20Correction%20on%20cast%20type%20for%20discovery%20message.docx) Corrections on cast type for SL discovery ZTE, Sanechips discussion Rel-17 NR\_SL\_relay-Core

[R2-2211949](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211949%20Miscellaneous%20corrections%20on%20TS%2038.331%20for%20NR%20sidelink%20relay.docx) Miscellaneous corrections on TS 38.331 for NR sidelink relay Xiaomi CR Rel-17 38.331 17.2.0 3661 - F NR\_SL\_relay-Core

[R2-2212066](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212066%20-%20CR3670%20Corrections%20for%20sideling%20relay%20in%20TS38.331%20v2.0.docx) Corrections for sideling relay in TS38.331 Lenovo Information Technology CR Rel-17 38.331 17.2.0 3670 - F NR\_SL\_relay-Core

[R2-2212136](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38331_CR3675_(Rel-17)_R2-2212136%20-%20Miscellaneous%20corrections%20on%20TS%2038.331%20for%20NR%20Sidelink%20Relay.docx) Miscellaneous corrections on TS 38.331 for NR Sidelink Relay CATT CR Rel-17 38.331 17.2.0 3675 - F NR\_SL\_relay\_enh-Core

[R2-2212204](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38331_R2-2212204_draftCR_Correction%20on%20RRC%20for%20SL%20relay.docx) Correction on RRC for SL relay Samsung draftCR Rel-17 38.331 17.2.0 F NR\_SL\_relay-Core

[R2-2212252](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212252%20SLRP-Clarification.docx) RSRP measurement issue Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SL\_relay-Core Late

[R2-2212399](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212399%20On%20Mapping%20Resource%20Pool%20Index%20in%20DCI%20format%203_0.docx) On Mapping Resource Pool Index in DCI format 3\_0 Nokia, Nokia Shanghai Bell discussion NR\_SL\_relay-Core

[R2-2212434](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38.331_CR3701(Rel-17)_R2-2212434-%20Clarification%20on%20capability%20filter%20for%20sidelink%20relay.docx) Clarification on capability filter for sidelink relay Ericsson CR Rel-17 38.331 17.2.0 3701 - F NR\_SL\_relay-Core

[R2-2212658](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212658%20Correction%20on%20full%20configuration%20for%20remote%20UE.DOC) Correction on full configuration for remote UE Sharp discussion

[R2-2212666](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212666%20Correction%20on%20full%20configuration%20for%20remote%20UE%20in%2038.331.doc) Correction on full configuration for remote UE in 38.331 Sharp draftCR Rel-17 38.331 17.2.0 NR\_SL\_relay-Core

[R2-2212694](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212694-38331_draftCR_Correction%20for%20handling%20dedicated%20discovery%20resource%20pool%20for%20U2N%20Relay.docx) Correction for handling dedicated discovery resource pool for U2N Relay LG Electronics France draftCR Rel-17 38.331 17.2.0 F NR\_SL\_relay-Core

### 6.7.3 User plane corrections

Including SRAP aspects and QoS.

Cast type for discovery message (related to R2-2211128)

[R2-2211397](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38321_1459_(Rel-17)_R2-2211397_Correction%20on%20cast%20type%20setting%20of%20discovery%20message_cl.docx) Correction on cast type setting of discovery message OPPO CR Rel-17 38.321 17.2.0 1459 - F NR\_SL\_relay-Core

[R2-2211701](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211701%20Discussion%20on%20SA2%20reply%20LS%20on%20cast%20type%20for%20SL%20discovery.doc) Discussion on SA2 Reply LS on cast type for discovery message Apple discussion NR\_SL\_relay-Core

[R2-2211702](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211702%20corrections%20on%20MAC%20for%20SL%20discovery%20cast%20type.docx) Correction on the cast type in SL discovery transmission and reception Apple CR Rel-17 38.321 17.2.0 1470 - F NR\_SL\_relay-Core

CRs to 38.321

[R2-2211398](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38321_1460_(Rel-17)_R2-2211398_Correction%20on%20exceptional%20resource%20pool%20usage%20for%20discovery%20message%20transmission_cl.docx) Correction on exceptional resource pool usage for discovery message transmission OPPO CR Rel-17 38.321 17.2.0 1460 - F NR\_SL\_relay-Core

* Not pursued

Discussion:

Apple understand that this will be discussed in NR V2X corrections.

OPPO understand that there is a related submission there, but the scope is a bit different; here it is related to discovery message transmission, and they would prefer to treat them separately.

Xiaomi think with the change, discovery cannot use the exceptional pool, and they are not sure this is right.

Apple think the motivation is the same for the NR V2X correction, and they do not see a need for further clarification in any release.

Qualcomm indicate that last meeting we made some changes that already covered this case in the RRC.

OPPO intend the change to clarify that when there is no dedicated configuration, the UE should use the normal pool if configured, but it should not use the exceptional pool.

Related to discovery cast type

[R2-2211605](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211605%20Clarification%20on%20MAC%20filtering%20for%20discovery%20message.docx) Clarification on MAC filtering for discovery message Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

CR to 38.322

[R2-2211703](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211703%20Misc%20corrections%20on%20RLC%20for%20SL%20Relay.docx) Miscellaneous Correction on the RLC for U2N relay-specific operations Apple CR Rel-17 38.322 17.1.0 0051 - F NR\_SL\_relay-Core

Discussion:

Samsung think the first and second changes are OK, but they wonder if the third change is for normal UE operation; they thought this language was specific to backhaul data in IAB.

Agreement:

First and second changes from R2-2211703 are merged into the RLC rapporteur CR.

CR to 38.351

[R2-2212137](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38351_CR0013_(Rel-17)_R2-2212137%20-%20Correction%20on%20SRAP%20for%20sidelink%20relay.docx) Correction on SRAP for sidelink relay CATT CR Rel-17 38.351 17.2.0 0013 - F NR\_SL\_relay\_enh-Core

* Endorsed for merge into the SRAP rapporteur CR

Discussion:

OPPO understand the reason is to align the text stylistically, and they think it is OK.

DRX alignment

[R2-2211503](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211503%20-%20Alignment%20between%20remote%20UE%20paging%20DRX%20and%20relay%20UE%20Uu%20DRX.docx) Alignment between remote UE paging DRX and relay UE Uu DRX Ericsson discussion Rel-17 NR\_SL\_relay-Core R2-2209860

* Noted

Discussion:

Samsung are not sure there is any paging latency issue in normal UE operation; we do not optimise for it in normal cases.

OPPO think the change is an optimisation and we can rely on UE implementation.

InterDigital see some value in the proposal; they think it reduces the latency associated with SL DRX that may slow down the reception.

LG agree with OPPO.

Qualcomm think it is an optimisation and too late to address.

Nokia agree with Samsung.

Ericsson do not believe this is a UE implementation issue, because the gNB needs to understand when the UE is in active time.

Apple wonder if this is really a correction; they see it more as a new feature. Huawei agree with Apple and think this is a big change to the DRX cycle. They think there would be interoperability issues between UE and network if we took this.

[R2-2211504](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211504%20-%20Corrections%20to%2038321%20CR1417%20on%20alignment%20between%20remote%20UE%20paging%20DRX%20and%20relay%20UE%20Uu%20DRX.docx) Corrections to 38.321 on alignment between remote UE paging DRX and relay UE Uu DRX Ericsson CR Rel-17 38.321 17.2.0 1417 1 F NR\_SL\_relay-Core R2-2209861

* Not pursued

## 6.11 NR positioning enhancements

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

Tdoc Limitation: 4 tdocs

### 6.11.0 In-principle agreed CRs

CRs AIP from RAN2#119bis-e.

[R2-2211255](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211255%20Correction%20to%20MAC%20spec%20for%20Positioning%20enhancement_final.docx) Correction to MAC spec for Positioning enhancement Huawei, HiSilicon CR Rel-17 38.321 17.2.0 1408 2 F NR\_pos\_enh-Core R2-2210894

* Agreed with coversheet revision as R2-2213126

Discussion:

CATT think there is a change (“with the indicated TAG” vs. “with this TAG”) compared to the AIP version.

Lenovo think there is a mistake in the coversheet description in respect of the field description in the MAC CE. Huawei think this can be revised.

[R2-2211256](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211256%20Correction%20to%20UE%20capability%20for%20DL-AoD_v00.docx) Correction to UE capability for DL-AoD Huawei, HiSilicon CR Rel-17 37.355 17.2.0 0379 2 F NR\_pos\_enh-Core R2-2210975

* Agreed

[R2-2212232](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212232_(CR%2037355-h20)_v02.docx) Various LPP Corrections Qualcomm Incorporated (Rapporteur) CR Rel-17 37.355 17.2.0 0386 1 F NR\_pos\_enh-Core R2-2210904

* [AT120][405][POS] Update of LPP CR (Qualcomm)

Scope: Check and update the CR in R2-2212232, taking into account decisions of this meeting.

Intended outcome: Agreeable CR

Deadline: Wednesday 2022-11-16 1800

[R2-2212482](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212482%20IPACap.docx) Correcting PRS capability information reported to gNB Ericsson, Nokia, Nokia Shanghai Bell, Lenovo CR Rel-17 38.306 17.2.0 0815 2 F NR\_pos\_enh-Core R2-2210907

* Endorsed for merge into the mega CR

[R2-2212484](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212484%20RRCIPA.docx) Miscellaneous correction for Positioning Ericsson CR Rel-17 38.331 17.2.0 3534 4 F NR\_pos\_enh-Core R2-2210983

* [AT120][406][POS] Rel-17 positioning RRC CR (Ericsson)

Scope: Review and update the CR in R2-2212484 with decisions of this meeting.

Intended outcome: Agreeable CR

Deadline: Wednesday 2022-11-16 1800

Withdrawn/Not available

R2-2212363 Correcting PRS capability information reported to gNB Ericsson, Nokia, Nokia Shanghai Bell, Lenovo CR Rel-17 38.306 17.2.0 0836 - F NR\_pos\_enh-Core Withdrawn

R2-2212364 Miscellaneous correction for Positioning Ericsson CR Rel-17 38.331 17.2.0 3690 - F NR\_pos\_enh-Core Withdrawn

### 6.11.1 General and stage 2 corrections

Incoming LSs, etc., and any stage 2 corrections (impact to 36.305 or 38.305). Stage 2 corrections without functional impact will be treated at lower priority or not at all.

LSs already treated in RAN2#119bis-e

[R2-2211112](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211112_R3-225268.docx) LS on SRS-PosRRC-InactiveConfig configuration signalling (R3-225268; contact: Intel) RAN3 LS in Rel-17 NR\_pos\_enh-Core To:RAN2

* Withdrawn

[R2-2211117](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211117_R4-2214493.docx) Reply LS on the UE/TRP TEG framework (R4-2214493; contact: CATT) RAN4 LS in Rel-17 NR\_pos\_enh-Core To:RAN1, RAN2, RAN3

* Withdrawn

Incoming LSs

[R2-2211137](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211137_S2-2209966.docx) LS on GNSS integrity requirement provisioning (S2-2209966; contact: Huawei) SA2 LS in Rel-17 5G\_eLCS\_ph2 To:RAN2 Cc:SA1

[R2-2211143](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211143_R1-2210528.docx) Reply LS on support of positioning in FR2-2 (R1-2210528; contact: Samsung) RAN1 LS in Rel-17 NR\_pos\_enh, NR\_ext\_to\_71GHz To:RAN2 Cc:RAN4

Discussion:

Samsung indicate there are related CRs.

Nokia interpreted that RAN1 have no confirmation that positioning with the new SCSs is supported in Rel-17, so they think we should exclude the SRS case now as well.

Huawei understood that RAN1 will not further work on this, and their interpretation is that RAN2 do not need to do anything regarding the SRS case.

* Noted

GNSS integrity (related to R2-2211137)

[R2-2211422](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211422%20Discussion%20on%20the%20LS%20on%20GNSS%20integrity%20requirement%20provisioning.docx) Discussion on the LS on GNSS integrity requirement provisioning CATT discussion Rel-17 NR\_pos\_enh-Core

[R2-2211837](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211837%20Draft%20reply%20LS%20on%20GNSS%20integrity%20requirement%20provision.docx) Draft reply LS on GNSS integrity requirement provision OPPO LS out Rel-17 NR\_pos\_enh-Core To:SA2 Cc:SA1

[R2-2212233](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212233_(integrity%20SA2%20LS).docx) GNSS Integrity Requirement Provisioning Qualcomm Incorporated discussion

[R2-2212922](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212922_Draft%20Reply%20LS%20on%20GNSS%20integrity%20requirement%20provisioning.docx) Draft Reply LS on GNSS integrity requirement provisioning vivo LS out Rel-17 NR\_pos\_enh-Core To:SA2 Cc:SA1

[R2-2212959](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212959%20Draft%20reply%20LS%20on%20GNSS%20integrity%20requirement%20provisioning_v01.docx) Draft Reply LS on GNSS integrity requirement provisioning Huawei LS out Rel-17 NR\_pos\_enh-Core To:SA2

* [AT120][404][POS] LS on GNSS integrity requirement provisioning (Huawei)

Scope: Discuss the LS in R2-2211137 and the received draft replies to this meeting, and converge on an understanding for a draft reply.

Intended outcome: Report to CB session, and approvable LS if possible

Deadline: Wednesday 2022-11-16 1800

CRs to 38.305

[R2-2211424](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38305_CR0111_(Rel-17)_R2-2211424.docx) Corrections on TS38.305 CATT CR Rel-17 38.305 17.2.0 0111 - F NR\_pos\_enh-Core

[R2-2212356](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212356%20Stage2.docx) Miscelenous corrections for stage2 Ericsson CR Rel-17 38.305 17.2.0 0112 - F NR\_pos\_enh-Core

[R2-2212686](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212686%20Discussion%20on%20gNB's%20support%20of%20UL%20MAC%20CE%20for%20pre-configured%20MG.docx) Discussion on gNB's support of UL MAC CE for pre-configured MG ZTE Corporation discussion Rel-17 NR\_pos\_enh-Core

[R2-2212687](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212687%20Correction%20on%20the%20gNB's%20behaviour%20for%20pre-configured%20MG.docx) Correction on the gNB's behaviour for pre-configured MG ZTE Corporation CR Rel-17 38.305 17.2.0 0115 - F NR\_pos\_enh-Core

[R2-2212688](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212688%20Correction%20on%20assistance%20data%20instances%20in%2038.305.docx) Correction on assistance data instances in 38.305 ZTE Corporation CR Rel-17 38.305 17.2.0 0116 - F NR\_pos\_enh-Core

[R2-2212929](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212929%20CR%20for%20miscellaneous%20corrections.docx) CR for miscellaneous corrections vivo draftCR Rel-17 38.305 17.2.0 F NR\_pos\_enh-Core

### 6.11.2 RRC corrections

Corrections to 38.331, except for UE capability issues which are handled under the UE capability agenda item.

CRs to 38.331

[R2-2211423](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38331_CR3597_(Rel-17)_R2-2211423.docx) Corrections on derivation of pathloss reference for TA validation of SRS CATT CR Rel-17 38.331 17.2.0 3597 - F NR\_pos\_enh-Core

* Endorsed to be merged into the RRC rapporteur CR

Discussion:

Intel think the reason for change is not so clear.

[R2-2211543](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38331_CR3612_(Rel-17)_R2-2211543%20Positioning%20corrections.docx) Miscellaneous corrections to NR positioning enhancements Lenovo CR Rel-17 38.331 17.2.0 3612 - F NR\_pos\_enh-Core

* Endorsed to be merged into the RRC rapporteur CR

Discussion:

ZTE agree with the principle of the CR, but they think for the first change, the last part should not be included, because when SetupRelease is used, only the setup branch behaviour is specified. Lenovo think we regularly do specify the release branch as well. Intel have the same understanding as Lenovo, e.g., as used in mrdc-SecondaryCellGroupConfig. Lenovo indicate that there are guidelines in section A.3.x that can be checked.

Optionality of MG activation/deactivation UL MAC CE

[R2-2212355](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212355%20MACDisc.docx) Discussion on NW configuration for UL MAC CE Ericsson discussion Rel-17 NR\_pos\_enh-Core

* Noted

Discussion:

ZTE support having optional support at the network, but they do not think it needs to be explicitly indicated to the UE; the UE should assume that the gNB may reject the activation/deactivation request, and they think a NOTE in stage 2 can solve the problem.

OPPO wonder why the gNB cannot support the MAC CE; they think the CR from Ericsson will complicate the UE behaviour.

Xiaomi think if the gNB does not support the UL MAC CE but the UE does, there would need to be an enhancement to NRPPa to indicate the support from the LMF to the gNB.

Qualcomm have the same view as ZTE and Xiaomi; they think this is the same situation as the LocationMeasurementIndication, where the UE makes a request and the gNB may grant it or not. So they understand that a non-supporting gNB could just ignore the MAC CE.

Huawei see both interpretations and would be OK with leaving it to implementation, but they think there would be value in having a NOTE saying it is up to the network whether to respond.

vivo wonder why the network would only implement the LMF-initiated version; they see the UE-initiated version as being more simple.

Ericsson think having a NOTE in the stage 2 will not do anything; the problem is that the gNB may not even be able to decode the MAC CE, and it may discard the packet causing an error scenario due to HARQ failure.

Intel understand that the network should be able to decode the MAC CE even if it does not support the feature.

OPPO do not see why HARQ failure would result from not decoding the MAC CE.

[R2-2211261](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211261%20Correction%20to%20pre-configured%20MG%20request.docx) Correction to pre-configured MG request Huawei, HiSilicon CR Rel-17 38.331 17.2.0 3574 - F NR\_pos\_enh-Core

[R2-2212073](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212073%20Discussion%20on%20the%20preconfigured%20MG%20activation%20and%20deactivation%20request.doc) Discussion on the preconfigured MG activation and deactivation request Xiaomi discussion

[R2-2212365](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212365%20RRCPositioning.docx) Miscellaneous correction for Positioning Ericsson CR Rel-17 38.331 17.2.0 3691 - F NR\_pos\_enh-Core

### 6.11.3 LPP corrections

Corrections to 37.355.

CRs to 37.355

[R2-2211259](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211259%20Remaining%20issues%20on%20PRS%20validity%20area.doc) Remaining issues on PRS validity area Huawei, HiSilicon discussion Rel-17 37.355 NR\_pos\_enh-Core

* Noted

Proposal1: When the UE receives PRS configuration with the field assistanceDataValidityArea, the UE shall:

 If the UE does not have combinations of cells defined within assistanceDataValidityArea for which it has already stored PRS assistance data, the UE stores a new instance of PRS configuration

 If the UE already has combinations of cells defined within asssitanceDataValidityArea for which it has already stored PRS assistance data, the UE overwrites the previous instance of PRS configuration

Discussion:

Huawei clarify that the second bullet refers to receiving new PRS assistance data with the same combination of cells as an existing validity area.

ZTE think the first bullet is a sort of ToAddMod list, which we currently do not have for the validity area.

Qualcomm agree with ZTE and think it goes together with the release behaviour in P3; they do not see this as workable for an LMF, because it would have to remember what it has sent to each of the UEs. They understand that the intention of P1 is already captured in stage 2.

CATT agree with the intention of P1, but we do not normally specify how the UE handles stored assistance data, and they do not see spec impact. For P3, they agree that it does not work; if the intention is to reduce latency, they think broadcast works.

Huawei understand that the previous RAN2 agreement was for a new instance when the UE receives a new PRS-ID; they think this is not correct, because the validity area is configured by a list of cells, not a list of PRS-IDs.

Ericsson understand the intention is to introduce a release list, and to match the release list we have to have the setup list; but they agree with others that the release list is not needed.

Apple wonder about the language “add” and “overwrite”; would we have to define variables?

Proposal2: The UE capability nr-dl-prs-AssistanceDataValidity reports the maximum number of validity area that defined by different combinations of cells.

Discussion:

Qualcomm think the current field description is OK. They agree in general that the validity area is a bit unclear, but they think the capability just indicates how many instances a UE can store. Huawei indicate that the issue is how you distinguish different instances for this purpose, and the point is to define a single instance by a combination of cells. Qualcomm thought this was defined already in stage 2.

To be checked offline in email discussion [405].

Proposal3: Add a list of validity areas in the PRS configuration to remove the pre-configured PRS configurations.

[R2-2211262](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211262%20Correction%20to%20UE%20capability%20for%20UE-based%20positioning.docx) Correction to UE capability for UE-based positioning Huawei, HiSilicon CR Rel-17 37.355 17.2.0 0387 - F NR\_pos\_enh-Core

* Not pursued

Discussion:

OPPO think the UE can make the right decision already and no change is needed.

Intel understand the intention is correct, but the changes are written such that the UE would need to indicate these two bits even if it only supports UE-assisted DL-TDOA.

Qualcomm have the same view as OPPO; this is a UE capability and the UE sets the bits according to what it supports. They agree with Huawei’s interpretation of what would be supported in practice, but they think the UE implementation can do the right thing.

Ericsson agree with the other comments that the capability can be set properly by UE implementation. They also observe that this has been there since Rel-16 and do not see it as an essential correction.

Huawei can accept not taking the change, but to Intel’s comments, they think the “if the field is included” condition in the CR covers this case.

[R2-2211544](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\37355_CR0390_(Rel-17)_R2-2211544%20Corrections%20LPP%20caps.docx) Miscellaneous corrections to LPP capabilities Lenovo CR Rel-17 37.355 17.2.0 0390 - F NR\_pos\_enh-Core

Discussion:

Intel think change 1 is ok; they agree with the intention of change 2, but they think the change itself is NBC, and we should instead list the field for 27-15 separately as a precondition for 27-15a.

Qualcomm think the first change is a bit unclear; they think the whole affected NOTE should be deleted and does not trace to the feature spreadsheet in any clear way. Lenovo thought it was traceable to the feature list. Intel have the same understanding as Lenovo.

Lenovo also understand that there are updates to the RAN1 feature list that need to be captured in LPP.

To be checked in the LPP email discussion, with agreeable aspects to be merged into the CR.

[R2-2212234](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212234_(CR%2037355_PPW_Capability).docx) Correction to DL-PRS Processing Capability outside MG Qualcomm Incorporated draftCR Rel-17 37.355 17.2.0 F NR\_pos\_enh-Core

* Endorsed to be merged into the LPP rapporteur CR

Discussion:

Qualcomm understand that this CR obviates the previous CR from Lenovo.

To be merged into the rapporteur CR (detailed wording can be checked offline).

Integrity parameters

[R2-2212892](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212892%20integrity.docx) Integrity measurements definition and missing integrity requirements Ericsson discussion Rel-17

* Noted

Proposal 1 Update the definition of PL and achievable TIR is stage 2 specifications as in the text proposal in Appendix A.

Proposal 2 Add TIR, AL and TTA to the integrity assistance data to make UE-based integrity complete

Proposal 3 Define in TIR, AL and TTA field descriptions that these are mandatory to use for integrity reliability determination if the device has indicated a corresponding capability or has requested for TIR, AL and TTA as part of the assistance data.

Proposal 4 Agree to the 37.355 text proposal in Appendix B to make UE-based integrity complete

Discussion:

Qualcomm wonder what is wrong with the existing specification. They consider that the PL definition has been stable for more than 20 years in GPS, and we have previously discussed and concluded that the UE does not need AL and TTA.

Huawei think if P2 is for UE-based immediate MT-LR, the values come from the service layer.

Ericsson agree that the definition of PL is long-standing, but they think it is not suitable as a definition of what the device shall report, and the intention is to have a clear requirement on what the device shall report to the network. They think the currently defined behaviour to provide PL is not unambiguously testable.

Xiaomi agree with the intention of P2, and they think that without this assistance data, the definition is somewhat up to UE implementation.

OPPO agree that the TIR should be sent to the UE to compute the PL, but regarding AL and TTA, they do not think they are needed; if they are sent to the UE, then the UE needs to implement mode 2 integrity, which was excluded from this release.

Swift agree with Qualcomm on P1 and think we should stick to the industry standard definition; they also think the proposed definition is not necessarily usable. For P2, they are sympathetic to sending the values to the UE, but they think it should be part of the location request rather than the assistance data, and this proposal seems like a new use case.

CATT agree with Qualcomm and Swift on P1; they would like to avoid new parameters in stage 2.

Ericsson think there is a relation to modes 1 and 2, and we could discuss a bit further offline to clarify.

Qualcomm think this is not a needed correction in Rel-17; in general, they think Ericsson’s view of integrity is associated with the location estimate rather than system availability.

### 6.11.4 MAC corrections

Corrections to 38.321.

PPW configuration

[R2-2211545](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211545_Discussion%20PPW%20configuration.doc) Discussion on the configuration of PPWs Lenovo discussion Rel-17 NR\_pos\_enh-Core

* Noted

Discussion:

Huawei think the MAC CR does not restrict the RRC configuration; they understand that Lenovo’s example 3 is possible. Lenovo wonder then why we need the clarification in MAC about ascending order; Huawei indicate the reason is that there are only 2 bits for the ID, and there is no direct correspondence between the PPW ID and the four possible settings. Intel agree with Huawei. Samsung also have the same understanding as Huawei; the entries can be indexed in the order of their PPW ID.

ZTE think without the increasing order wording, the PPW configuration in the MAC can work, so they support Lenovo’s interpretation; they see no problem with removing the wording and just clarifying that the MAC ID is not the RRC ID for the PPW.

vivo have the same understanding as Huawei that the sentence cannot be removed.

Ericsson think Lenovo’s intention is not to remove the sentence but to clarify the different interpretations. However, they thought example 3 was extreme and there might be some ambiguity if we allow it.

Lenovo indicate that they do intend to remove the “increasing order” language and allow more flexibility. They think if a majority of companies want to keep the language, we have a relatively strict requirement on the network to ensure this behaviour according to examples 1 and 2.

Huawei indicate that the MAC does not restrict the RRC configuration, only indicates a correspondence between the MAC ID values and the RRC configuration.

CATT agree with Huawei and do not think there is an issue between gNB and UE.

Ericsson also think the increasing order is needed.

Optionality of MG activation/deactivation MAC CE (related to RRC discussion)

[R2-2211260](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211260%20Correction%20to%20MAC%20spec%20for%20pre-configured%20MG%20request.docx) Correction to MAC spec for pre-configured MG request Huawei, HiSilicon CR Rel-17 38.321 17.2.0 1450 - F NR\_pos\_enh-Core

[R2-2212357](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212357%20MACCR.docx) Positioning Measurement Gap Activation/Deactivation Request MAC CE based upon Network Configuration Ericsson CR Rel-17 38.321 17.2.0 1489 - F NR\_pos\_enh-Core

### 6.11.5 UE capabilities

Including impact to 38.306 and any UE-capability-specific impact to 38.331.

[R2-2211546](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\38306_CRxxxx_(Rel-17)_R2-2211546%20Corrections%20PRS%20processing%20window%20caps.docx) Corrections to PRS processing window capability descriptions Lenovo draftCR Rel-17 38.306 17.2.0 F NR\_pos\_enh-Core

* Endorsed for merge into the mega CR

[R2-2212646](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212646%20draftCR_clarification%20on%20the%20support%20of%20DL-PRS%20Rx%20with%20higher%20SCS%20in%20FR2-2.docx) Clarification on the support of DL-PRS reception with 480/960 kHz SCS in FR2-2 Samsung draftCR Rel-17 38.306 17.2.0 NR\_pos\_enh-Core

* Not pursued

[R2-2211506](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211506%20-%20Corrections%20to%2038306%20CR0830%20for%2071GHz.docx) Correction to 38.306 for 71 GHz Ericsson CR Rel-17 38.306 17.2.0 0830 - F NR\_ext\_to\_71GHz-Core

* Not pursued

Discussion (joint discussion of the above two documents):

Samsung understand that there is no agreement on the complete list of reference signals in RAN1, and RAN2 should not take the step of listing them explicitly. They think the list can be further discussed in the 71 GHz session.

Ericsson agree with Samsung’s intention, but they think we normally specify what is supported, not what is not supported. They could accept sending an LS to RAN1 for clarification.

Intel understand that RAN1 only agreed on DL-PRS, and so far we have not provided for the network to indicate 480 kHz/960 kHz in LPP, so it is natural that the network cannot configure them; they see no need to update the UE capability for something that we cannot signal.

Nokia think if we have to capture something, the NOTE style is preferable; they think the Ericsson CR goes beyond the positioning scope. They also see that the RAN1 LS does not look promising for SRS, and they think we could capture that SRS is not supported either.

Lenovo prefer Ericsson’s approach, and they think there may be an alternative to listing all the signals explicitly, e.g., saying “all reference signals other than PRS”.

Qualcomm agree with Intel that we do not need to capture anything; the assistance data for these SCSs cannot be signalled anyway. If anything is captured, they think it should be an informative NOTE, not the normative NOTE in the table.

Huawei agree with Intel and Qualcomm; they also note that PRS is configured by LPP, and they think it does not make sense to refer to the capability in RRC.

Intel have the same view as Huawei that since the LMF configures the PRS, the NOTE in 38.306 is not helpful.

Nokia think an informative NOTE is fine, but they do think the RAN1 decision should be captured somewhere.

Ericsson think it is OK not to capture anything, and if we do something, it should be in a proper direction. They also understand that RAN1 have captured this decision in their specs already. They also agree with Huawei that 38.306 may not be the right place to specify something for PRS.

Samsung also understand the view of Qualcomm/Huawei/Intel, and if there is a majority view not to capture anything, they can accept that; however, they want to point out that the current description in the UE capability is not correct, because it says all reference signals can be supported at the UE side.

# 8 Rel-18

## 8.2 Expanded and improved NR positioning

(FS\_NR\_pos\_enh2; leading WG: RAN1; REL-18; WID: RP-221814)

Time budget: 2 TU

Tdoc Limitation: 4 tdocs

### 8.2.1 Organizational

Including incoming LSs and rapporteur inputs.

Open issue list

[R2-2211223](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211223%20Open%20Issue%20List%20of%20Study%20Item%20on%20Expanded%20and%20Improved%20NR%20Positioning.docx) Open Issue List of Study Item on Expanded and Improved NR Positioning CATT discussion Rel-18 FS\_NR\_pos\_enh2

Incoming LSs

[R2-2211130](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211130_S2-2209590.docx) LS Out on Positioning Reference Units (S2-2209590; contact: CATT) SA2 LS in Rel-18 FS\_eLCS\_Ph3 To:RAN1 Cc:RAN2, RAN3

[R2-2211131](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211131_S2-2209591.docx) LS on LPHAP information delivery to RAN (S2-2209591; contact: Huawei) SA2 LS in Rel-18 FS\_eLCS\_Ph3 To:RAN1, RAN2 Cc:RAN3

[R2-2211139](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211139_S2-2209961.docx) LS on RAN dependency for Ranging/Sidelink Positioning (S2-2209961; contact: Xiaomi) SA2 LS in Rel-18 FS\_Ranging\_SL To:RAN1, RAN2, RAN3

[R2-2211145](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211145_R1-2210567.docx) Reply LS on Terminology Alignment for Ranging/Sidelink Positioning (R1-2210567; contact: Xiaomi) RAN1 LS in Rel-18 FS\_Ranging\_SL To:SA2 Cc:RAN2, RAN3

PRUs (related to R2-2211130)

[R2-2211222](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211222%20Discussion%20on%20the%20PRU%20LS%20from%20SA2.docx) Discussion on the PRU LS from SA2 CATT discussion Rel-18 FS\_NR\_pos\_enh2

LPHAP (related to R2-2211131)

[R2-2211253](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211253%20Draft%20reply%20to%20SA2%20LS%20on%20LPHAP%20indication_final.doc) Discusison on the reply to SA2 LS on LPHAP Huawei, HiSilicon discussion Rel-18 FS\_NR\_pos\_enh2

Sidelink positioning (related to R2-2211139)

[R2-2211758](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211758%20Discussion%20on%20reply%20LS%20on%20RAN%20dependency%20for%20Ranging%20Sidelink%20Positioning.doc) Discussion on reply LS on RAN dependency for Ranging Sidelink Positioning OPPO discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212179](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212179%20%5bdraft%5d%20Response%20LS%20to%20SA2%20on%20the%20Ranging%20and%20Sidelink%20positioning.docx) [Draft] Response LS to SA2 on the Ranging and Sidelink positioning Spreadtrum Communications LS out Rel-18 FS\_NR\_pos\_enh2 To:SA WG2 Cc:RAN WG1, RAN WG3

[R2-2212809](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212809%20Discussion%20on%20LS%20from%20SA2%20on%20RAN%20dependency.doc) Discussion on LS from SA2 on RAN dependency Xiaomi discussion Rel-18

[R2-2212810](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212810%20Draft%20Reply%20LS%20on%20RAN%20dependency%20for%20Ranging%20&%20Sidelink%20Positioning.docx) Draft Reply LS on RAN dependency for Ranging & Sidelink Positioning Xiaomi LS out Rel-18 To:SA2 Cc:RAN1, RAN3

[R2-2212856](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212856_(Reply%20LS%20on%20RAN%20dependency%20for%20Ranging-Sidelink%20Positioning).docx) RAN dependency for Ranging/Sidelink Positioning Qualcomm Incorporated discussion

TP to TR 38.859

[R2-2211224](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211224%20Text%20Proposals%20of%20TR%2038.859%20for%20Expanded%20and%20Improved%20NR%20Positioning.docx) Text Proposals of TR 38.859 for Expanded and Improved NR Positioning CATT discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211225](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211225%20draft%20LS%20to%20capture%20Text%20Proposal%20for%20TR%2038.859.doc) draft LS to capture Text Proposal for TR 38.859 CATT LS out Rel-18 FS\_NR\_pos\_enh2 To:RAN 1 Cc:RAN3

### 8.2.2 Sidelink positioning

Study of positioning architecture and signalling procedures (e.g. configuration, measurement reporting, etc) to enable sidelink positioning covering both UE based and network based positioning. Considering relative positioning, ranging and absolute positioning.

AI summary

[R2-2213118](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2213118%20Summary%20of%20AI%208.2.2%20SL%20positioning.docx) Summary of agenda item 8.2.2 on sidelink positioning (CATT) CATT discussion Rel-18 FS\_NR\_pos\_enh2

Easy agreed

Proposal 1 Abbreviation of SLPP is used as the name of new protocol for sidelink positioning between UEs and inform other WGs, i.e. SA2 and RAN1:

- SLPP: Sidelink Positioning Protocol

Proposal 2 RAN2 to confirm either of UEs, except not all UEs, including target UE and one or multiple anchor UEs may be OOC in partial coverage scenarios. How to enable the procedures/signaling for supporting SL positioning in partial coverage will be further discussed in normative work.

Proposal 9 RAN2 to enable the support of SL-PRS configuration in normative work based on the progress in RAN1.

Proposal 12 RAN2 to discuss the details of functionalities of LMF for supporting SL positioning in normative work.

groupcast/broadcast aspect:

Proposal 13 RAN2 to confirm the applicability of at least the following positioning signaling for groupcast/broadcast (in addition to unicast):

• SL positioning capability (5)

• SL positioning assistance data (6)

Proposal 14 RAN2 to further discuss in normative work:

- the security issues on specific information of SL positioning capability and assistance data in groupcast/broadcast and consult to SA2 and SA3.

- the use cases for applying groupcast/broadcast.

To be discussed

Architecture aspect:

Proposal 3 RAN2 to discuss SL positioning architecture, including whether UE roles(target UE/ Anchor UE/ Server UE) are specified in SL positioning architecture, whether LTE PC5 is excluded for SL positioning.

Session-based and session-less aspect:

Proposal 4 RAN2 to confirm that a positioning session is characterized by a time-limited two-way link enabling interactive expression and information exchange between two or more communication devices, typically in presence of state (ie, information about session history).

Proposal 5 RAN2 to discuss if the session modification (adding or removing UEs to a session) is supported or not in session-based.

Proposal 6 RAN2 to discuss if session-less positioning is anything else than session-based positioning as per Proposal 5 (if agreed)”, or session-less positioning is best-effort positioning without QoS guarantees, FFS other necessary and satisfactory characteristics for its definition, including security and integrity.

Proposal 7 RAN2 to discuss the scenarios where the session-less SL positioning are applicable, including:

- at least for some positioning methods (e.g. single-sided RTT)

- If security is not required, session-less is applicable.

- SLPP should support session-less operation to enable sidelink positioning with no discovery, no UE associations and no SLPP session.

Distributed mode of operation aspect:

Proposal 8 RAN2 to discuss whether SLPP should support distributed (or decentralized) mode of operation, where each of the participating UEs perform the range and/or position computations on their own (based on the exchanged location information) and FFS the need of session-based/session-less in normative work.

Anchor UE (re)selection aspect:

Proposal 10 For anchor UE(s) (re)selection, AS layer criteria should be considered besides the high layer criteria.

Proposal 11 For anchor UE(s) (re)selection criteria, the following assistance data can be discussed:

- the intended positioning methods are supported by the UE;

- the UE is capable of being anchor UE;

- Serving cell ID.

- the UE is stationary/fixed (e.g. RSU/PRU) and/or mobile (e.g. vehicle).

- the UE is location known

More assistance data can be further discussed in normative work based on the progress including RAN1:

- travelling path.

- Battery status

- location accuracy.

- velocity and direction.

- dynamic measurements including signal strength measurements. FFS further details.

The following documents will not be individually treated

[R2-2211226](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211226%20Discussion%20on%20SL%20Positioning.docx) Discussion on SL Positioning CATT discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211230](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211230%20Discussion%20on%20sidelink%20positioning.docx) Discussion on sidelink positioning vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211252](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211252%20Discussion%20on%20sidelink%20positioning_final.docx) Discussion on Sidelink Positioning Huawei, HiSilicon discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211462](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211462.docx) Support of sidelink positioning Intel Corporation discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211661](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211661.docx) Server UE functions MediaTek Inc. discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211688](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211688-SL-POS-v0.docx) SLPP/RSPP protocol design Apple discussion FS\_NR\_pos\_enh2

[R2-2211839](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211839%20Further%20discussion%20on%20sidelink%20positioning.docx) Further discussion on sidelink positioning OPPO discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211917](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211917_SL_Pos.docx) Considerations on sidelink positioning Sony discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212082](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212082_Sidelink-Fraunhofer.docx) Considerations for UE Positioning using Sidelink Fraunhofer IIS, Fraunhofer HHI discussion

[R2-2212096](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212096_SLPos_Solutions.docx) On SL Positioning Protocol and Architecture Lenovo discussion Rel-18

[R2-2212109](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212109.docx) Discussion of session-based and session-less sidelink positioning Nokia Germany discussion Rel-18

[R2-2212112](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212112.docx) Protocol and coverage aspects of sidelink positioning Nokia Germany discussion

[R2-2212169](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212169%20Discussion%20on%20potential%20solutions%20for%20SL%20positioning.docx) Discussion on potential solutions for SL positioning Spreadtrum Communications discussion Rel-18

[R2-2212359](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212359%20SL.docx) NW Assisted Ranging and Protocol Name and terminologies Ericsson discussion Rel-18

[R2-2212470](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212470%20Study%20of%20signalling%20procedures%20and%20design%20considerations%20for%20sidelink%20positioning.docx) Study of signalling procedures and design considerations for sidelink positioning LG Electronics Deutschland discussion Rel-18

[R2-2212506](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212506%20(R18%20NR%20POS%20SI%20A822_SLPos).doc) Discussion on Sidelink Positioning InterDigital Communications discussion Rel-18

[R2-2212554](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212554.docx) Signaling procedures to enable sidelink positioning Sharp discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212647](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212647%20Discussion%20on%20SL-PRS%20resource%20allocation.docx) Discussion on SL-PRS resource allocation schemes Samsung discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212685](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212685%20Discussion%20on%20sidelink%20positioning.docx) Discussion on sidelink positioning ZTE Corporation discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212710](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212710%20Considerations%20on%20Sidelink%20positioning.doc) Considerations on Sidelink positioning CMCC discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212811](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212811%20Discussion%20on%20SL%20positioning.doc) Discussion on SL positioning Xiaomi discussion Rel-18

[R2-2212857](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212857_(Sidelink%20Positioning).docx) Study of Sidelink Positioning Architecture, Signaling and Procedures Qualcomm Incorporated discussion

[R2-2212883](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212883%20(8.2.2)%20Discussion%20on%20SL-POS%20protocol%20architecture%20design.doc) Discussion on SL-POS protocol architecture design Samsung Electronics Romania discussion

[R2-2212941](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212941_Protocol%20considerations%20for%20sidelink%20positioning_clean.docx) Protocol considerations for sidelink positioning Philips International B.V. discussion Rel-18 38.859 FS\_NR\_pos\_enh2 Late

### 8.2.3 RAT-dependent integrity

Study methodologies, procedures, signalling, etc for determination of positioning integrity for both UE-based and UE-assisted positioning. Focus on reuse of concepts and principles being developed for RAT-Independent GNSS positioning integrity, where possible. Identification of error sources may require input from RAN1.

AI summary

[R2-2213119](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2213119%20%5bPre120%5d%5b404%5d%5bPOS%5d%20Summary%20of%20agenda%20item%208.2.3%20on%20RAT-dependent%20integrity.docx) [Pre120][404][POS] Summary of agenda item 8.2.3 on RAT-dependent integrity InterDigital Communications discussion Rel-18

* Revised in R2-2213127

R2-2213127 [Pre120][404][POS] Summary of agenda item 8.2.3 on RAT-dependent integrity InterDigital Communications discussion Rel-18

Proposal 1: use DNU flag for RAT-dependent integrity

Proposal 2: UE sends capability info to LMF on integrity for the LMF-based integrity. Details of UE capabilities are discussed in the normative work.

Proposal 3: Remove steps 2a/2b from Figure 2, then Figures 1, 2 and 3 are updated with the UE capability signalling and the updated figures are captured in the TR as baseline. Exactly what messages are used are discussed in the normative work.

Proposal 4: Discuss integrity KPI/integrity results transfer procedures in normative work

Proposal 5: The mapping of integrity parameters should be handled by RAN1 instead of RAN2.

Proposal 6: RAN2 discuss the spec impact of RAT-dependent error sources based on the error sources found by RAN1.

Proposal 7: Integrity alert output is performed when some defined integrity information or events are detected for both UE-based and LMF -based integrity modes.

Proposal 8: Support both Mode 1 (PL reporting) and Mode 2 (integrity flag reporting) reporting of integrity result for RAT-dependent positioning

Proposal 9: The position calculation and integrity calculation shall be performed at the same entity.

The following documents will not be individually treated

[R2-2211227](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211227%20Discussion%20on%20RAT%20dependent%20integrity.docx) Discussion on RAT dependent integrity CATT discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211231](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211231%20Discussion%20on%20RAT-dependent%20positioning%20integrity.docx) Discussion on RAT-dependent integrity vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211251](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211251%20Discussion%20on%20RAT-dependent%20integrity_final.docx) Discussion on RAT-dependent Integrity Huawei, HiSilicon discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211463](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211463%20_support%20of%20RAT%20dependent%20integrity.docx) Integrity for RAT dependent positioning methods Intel Corporation discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211838](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211838%20Consideration%20on%20RAT-dependent%20integrity.docx) Consideration on RAT-dependent integrity OPPO discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211918](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211918_Integrity.docx) Considerations on some aspects for integrity of RAT dependent positioning Sony discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212050](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212050%20%20Discussion%20on%20RAT-dependent%20integrity.doc) Discussion on RAT-dependent integrity Lenovo discussion Rel-18

[R2-2212074](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212074%20Discussion%20on%20RAT-dependent%20positioning%20integrity.doc) Discussion on RAT-dependent positioning integrity Xiaomi discussion

[R2-2212170](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212170%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

[R2-2212242](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212242_(integrity).docx) Integrity of NR Positioning Technologies Qualcomm Incorporated discussion

[R2-2212358](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212358%20Integrity.docx) Text proposal and Signaling for Integrity Computation at LMF Ericsson discussion Rel-18

[R2-2212505](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212505%20DNU%20Integrity%20Alert.docx) Use of DNU flag for RAT-dependent positioning integrity Nokia, Nokia Shanghai Bell discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212509](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212509%20(R18%20NR%20POS%20SI%20A823_Integrity).doc) Discussion on RAT-dependent Integrity InterDigital Communications discussion Rel-18

R2-2212564 Discussion on RAT dependent integrity BUPT discussion Late

[R2-2212625](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212625.docx) Discussion on the integrity issues CMCC discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212684](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212684%20Discussion%20on%20RAT-dependent%20methods%20positioning%20integrity.docx) Discussion on RAT-dependent methods positioning integrity ZTE Corporation discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212884](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212884%20(8.2.3)%20Discussion%20on%20RAT-dependent%20integrity.doc) Discussion on RAT-dependent integrity Samsung Electronics Romania discussion

Withdrawn/Not available

R2-2212361 Text proposal and Signaling for Integrity Computation at LMF Ericsson discussion Rel-18 Withdrawn

### 8.2.4 LPHAP

Study the requirements on LPHAP as developed by SA1 and evaluate whether existing RAN functionality can support these power consumption and positioning requirements. Based on the evaluation, and, if found beneficial, study potential enhancements to help address any limitations.

AI summary

R2-2213120 Summary of AI 8.2.4 for LPHAP Huawei, HiSilicon discussion Rel-18 FS\_NR\_pos\_enh2

The following documents will not be individually treated

[R2-2211228](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211228%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP CATT discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211232](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211232%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211250](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211250%20Discussion%20on%20LPHAP_final.docx) Discussion on LPHAP Huawei, HiSilicon, CATT, China Unicom, Nokia, Spreadtrum discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211464](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211464_support%20of%20LPHAP.docx) Support of LPHAP Intel Corporation discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211840](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211840%20Further%20consideration%20on%20LPHAP.docx) Further consideration on LPHAP OPPO discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211919](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211919_LPHAP.docx) Considerations on some aspects for LPHAP Sony discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212051](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212051%20Discussion%20on%20low%20power%20high%20accuracy%20positioning.doc) Discussion on low power high accuracy positioning Lenovo discussion Rel-18

[R2-2212072](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212072_SRS_Configuration_Fraunhofer.docx) SRS Configuration for supporting LPHAP Fraunhofer IIS, Fraunhofer HHI discussion

[R2-2212075](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212075%20Discussion%20on%20LPHA%20positioning.doc) Discussion on LPHA positioning Xiaomi discussion

[R2-2212180](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212180%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP Spreadtrum Communications discussion Rel-18

[R2-2212230](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212230.docx) DL Positioning measurement report THALES discussion

[R2-2212243](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212243_(LPHAP).docx) Enhancements to Positioning in RRC\_INACTIVE State for LPHAP Qualcomm Incorporated discussion

[R2-2212360](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212360%20LPHAP.docx) UL SRS Inactive mode complexities and Sequence ID Management and Simulations Recommendations Ericsson discussion Rel-18

[R2-2212510](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212510%20DRX-related%20enhancement%20for%20LPHAP.docx) DRX related enhancement for LPHAP Nokia, Nokia Shanghai Bell discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212512](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212512%20(R18%20NR%20POS%20SI%20A824_LPHAP).doc) Discussion on LPHAP InterDigital Communications discussion Rel-18

[R2-2212648](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212648%20Discussion%20on%20the%20alignment%20between%20DRX%20and%20PRS%20configuration.docx) Discussion on the alignment between PRS and DRX Samsung discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212683](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212683%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP ZTE Corporation discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212711](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212711%20Further%20considerations on LPHAP.doc) Further considerations on LPHAP CMCC discussion Rel-18 FS\_NR\_pos\_enh2

### 8.2.5 RedCap positioning

Based on RAN1 evaluation, assess the necessity of enhancements, and, if needed, identify enhancements to help address limitations associated with RedCap UEs.

[R2-2211465](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211465%20_RedCap%20positioning.docx) Support of RedCap Intel Corporation discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2212228](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212228%20RedCap%20positioning%20requirements%20for%20Public%20Safety%20Personal%20Protection%20Equipment%20(PPE).docx) RedCap positioning requirements for Public Safety Personal Protection Equipment (PPE FirstNet, AT&T, UK Home Office, Erillisverkot, MINISTERE DE L’INTERIEUR, SyncTechno Inc., Softil, Nkom discussion

[R2-2211229](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211229-Discussion%20on%20RedCap%20Positioning.docx) Discussion on RedCap Positioning CATT discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211233](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211233%20Discussion%20on%20RedCap%20positioning.docx) Discussion on RedCap positioning vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2211270](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211270%20Discussion%20on%20REDCAP%20Positioning.docx) Discussion on RedCap Positioning Huawei, HiSilicon discussion

[R2-2212052](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212052%20Discussion%20on%20RedCap%20Positioning.doc) Discussion on RedCap positioning Lenovo discussion Rel-18

[R2-2212076](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212076%20Discussion%20on%20RedCap%20UE%20positioning.doc) Discussion on RedCap UE positioning Xiaomi discussion

[R2-2212362](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212362%20RedCap.docx) Positioning for RedCap UEs including Bluetooth and Text Proposal Ericsson discussion Rel-18

[R2-2212515](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212515%20(R18%20NR%20POS%20SI%20A825_RedCap).docx) Discussion on positioning for RedCap UE InterDigital Communications discussion Rel-18

[R2-2212682](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212682%20Discussion%20on%20RedCap%20positioning.docx) Discussion on RedCap positioning ZTE Corporation discussion Rel-18 FS\_NR\_pos\_enh2

## 8.9 Enhanced NR Sidelink Relay

(NR\_SL\_relay\_enh-Core; leading WG: RAN2; REL-18; WID: RP-221262)

Time budget: 1.5 TU

Tdoc Limitation: 4 tdocs

### 8.9.1 Organizational

Including incoming LSs and rapporteur inputs.

[R2-2211120](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211120_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

### 8.9.2 UE-to-UE relay

Single-hop Layer-2 and Layer-3 UE-to-UE relay for unicast. Focus for this meeting is on the common L2/L3 parts: relay discovery and (re)selection. Tdocs on other aspects of the objective may be submitted but will not be treated at this meeting.

AI summary

R2-2213121 Summary of agenda item 8.9.2 on UE-to-UE relay vivo discussion

The following documents will not be individually treated

[R2-2211279](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211279%20Disussion%20on%20U2U%20relay%20discovery%20and%20(re)selection.docx) Discussion on U2U Relay Discovery and (Re)selection CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211400](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211400%20Discussion%20on%20NR%20sidelink%20UE%20to%20UE%20relay_cl.docx) Discussion on NR sidelink UE to UE relay OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211401](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211401_U2U_Relaying_Discovery_Reselection_Intel.docx) Discovery and reselection with UE-to-UE relaying Intel Corporation discussion Rel-18 NR\_SL\_relay-Core

[R2-2211534](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211534_Remaining_Issues_Relay_reSelection_and_Discovery.docx) Remaining Issues on Relay (re)Selection and Discovery Ericsson España S.A. discussion Rel-18

[R2-2211630](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211630%20(R18%20SL%20Relay%20WI_AI892%20RelayDiscoverySelection).doc) Discovery and Relay Selection for UE-to-UE Relays InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211675](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211675_Discussion%20on%20the%20common%20L2%20L3%20parts%20for%20U2U%20relaying.docx) Discussion on the common L2 L3 parts for U2U relaying vivo discussion

[R2-2211697](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211697%20Discussion%20on%20U2U%20relay.doc) Discussion on UE-to-UE Relay Apple discussion NR\_SL\_relay\_enh-Core

[R2-2211753](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211753%20Discussion%20on%20UE-to-UE%20relay.doc) Discussion on UE-to-UE relay Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211781](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211781+Discussion%20on%20U2U%20relay.doc) Discussion on U2U relay China Telecom discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211785](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211785-U2U%20Relay%20open%20issues%20and%20coexistence%20with%20U2N%20Relay.docx) U2U Relay open issues and coexistence with U2N Relay Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2211816](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211816%20Discussion%20on%20U2U%20relay%20communication.docx) Discussion on U2U relay communication ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211821](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211821_UE%20to%20UE%20relay%20discovery%20and%20(re)selection.docx) UE to UE relay discovery and (re)selection NEC Corporation discussion NR\_SL\_relay\_enh-Core

[R2-2211849](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211849%20Relay%20selection%20and%20reselection%20triggers-v2.doc) Relay selection and reselection triggers Fujitsu discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211933](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211933.doc) UE-to-UE relay (re)selection Sony discussion Rel-18 NR\_SL\_relay\_enh

[R2-2212025](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212025%20Discussion%20on%20L2%20UE-to-UE%20relay%20v2.0.docx) Discussion on L2 UE-to-UE relay Lenovo discussion Rel-18

[R2-2212159](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212159.doc) Remaining issues on relay discovery and (re)selection for U2U relay Spreadtrum Communications discussion Rel-18

[R2-2212207](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212207%20Discussion%20on%20integrated%20U2U%20relay%20discovery.doc) Discussion on integrated U2U relay discovery Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212275](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212275_SL%20Relay%20Discovery%20and%20(Re-)Selection.docx) SL UE-to-UE Relay Discovery and (Re-)Selection Fraunhofer IIS, Fraunhofer HHI discussion Rel-18 NR\_SL\_relay\_enh

[R2-2212301](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212301_U2U_relay.docx) Considerations for U2U L2 relay operations Kyocera discussion

[R2-2212320](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212320%20Relay%20(re)selection%20for%20UE-to-UE%20relay.docx) Relay discovery and (re)selection for UE-to-UE relay MediaTek Inc. discussion Rel-18

[R2-2212321](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212321%20Connection%20management%20and%20procedures%20for%20L2%20UE-to-UE%20relay.docx) Connection management and procedures for L2 UE-to-UE relay MediaTek Inc. discussion Rel-18

[R2-2212404](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212404%20Further%20considerations%20on%20U2U%20relay.docx) Considerations on U2U relay (re)selection Nokia, Nokia Shanghai Bell discussion Rel-18

[R2-2212508](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212508%20Further%20U2U%20relay%20discovery%20reselection.docx) Further discussion on U2U relay discovery and relay selection Beijing Xiaomi Mobile Software discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212519](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212519-Relay%20(re-)selection%20and%20discovery%20for%20UE-to-UE%20relay.docx) Relay (re-)selection and discovery for UE-to-UE relay LG Electronics France discussion Rel-18

[R2-2212561](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212561_U2U_relay_reselection.doc) UE-to-UE relay (re)selection Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212610](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212610_AS%20condition%20for%20relay%20discovery%20message%20transmission.doc) AS condition for relay discovery message transmission Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212697](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212697%20Discussion%20on%20U2U%20relay.docx) Discussion on U2U relay CMCC discussion Rel-18 NR\_SL\_relay\_enh

Withdrawn/Not available

R2-2211830 Relay selection and reselection triggers Fujitsu discussion Rel-18 NR\_SL\_relay\_enh-Core Withdrawn

### 8.9.3 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.

[R2-2211786](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211786-Open%20issue%20on%20service%20continuity%20for%20UE-to-Network%20relay.docx) Open issue on service continuity for UE-to-Network relay Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2212698](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212698%20Discussion%20on%20service%20continuity.docx) Discussion on service continuity CMCC discussion Rel-18 NR\_SL\_relay\_enh

[R2-2211280](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211280%20Consideration%20on%20Service%20Continuity%20Enhancements%20for%20L2%20U2N%20Relay.docx) Consideration on Service Continuity Enhancements for L2 U2N Relay CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211399](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211399%20Discussion%20on%20further%20enhancement%20of%20service%20continuity_cl.docx) Discussion on further enhancement of service continuity OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211402](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211402%20-%20Service%20continuity%20enhancements%20for%20L2%20U2N%20relaying.docx) Service continuity enhancements for L2 U2N relay Intel Corporation discussion Rel-18 NR\_SL\_relay-Core

[R2-2211413](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211413_Considerations%20on%20Service%20Continuity%20Enhancement.docx) Considerations on Service Continuity Enhancement NEC Corporation discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211535](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211535_Further_Aspects_Inter_gNB_Service_Continuity.docx) Further Aspects on Inter-gNB Service Continuity Ericsson España S.A. discussion Rel-18

[R2-2211607](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211607%20%20Discussion%20on%20service%20continuity.docx) Discussion on Service Continuity Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211631](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211631%20(R18%20SL%20Relay%20WI_AI893%20Service%20Continuity).doc) Open Issues on Service Continuity InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211676](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211676_Remaining%20issues%20on%20service%20continuity%20enhancement%20for%20L2%20U2N%20relay.docx) Remaining issues on service continuity enhancement for L2 U2N relay vivo discussion

[R2-2211698](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211698%20Discussion%20on%20service%20continuity%20enhancement%20of%20L2%20U2N%20relay.doc) Discussion on Service continuity enhancement of L2 U2N relay Apple discussion NR\_SL\_relay\_enh-Core

[R2-2211782](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211782_Considerations%20on%20service%20continuity%20enhancements.docx) Considerations on service continuity enhancements China Telecom discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211786](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211786-Open%20issue%20on%20service%20continuity%20for%20UE-to-Network%20relay.docx) Open issue on service continuity for UE-to-Network relay Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2211875](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211875.docx) Discussion on service continuity enhancement Xiaomi discussion

[R2-2211897](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211897%20Service%20continuity%20for%20L2%20U2N%20relay.doc) Service continuity enhancement for L2 U2N relay ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211934](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211934.doc) Service continuity enhancements for UE sidelink relay Sony discussion Rel-18 NR\_SL\_relay\_enh

[R2-2212026](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212026%20Service%20continuity%20in%20L2%20U2N%20relay%20case%20v2.0.docx) Service continuity enhancements for L2 U2N relay Lenovo discussion Rel-18

[R2-2212155](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212155%20Service%20continuity%20enhancements%20support%20for%20L2%20U2N%20relay.doc) Service continuity enhancements support for L2 U2N relay Spreadtrum Communications discussion Rel-18

[R2-2212253](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212253%20U2N%20relay%20inter%20gNB%20path%20switch%20issues.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-Core

[R2-2212254](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212254%20RSRP%20issue.docx) SL-RSRP and SD-RSRP measurement issues Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212276](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212276%20U2N%20Relay%20UE%20operation%20Threshold%20Conditions%20-%20Impact%20of%20UE%20Mobility%20-%20Toulouse.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-Core R2-2208158

[R2-2212307](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212307_U2N_path_switch.doc) L2 U2N inter-gNB service continuity Kyocera discussion

[R2-2212322](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212322%20Inter-gNB%20path%20switch%20to%20Relay%20UE%20in%20RRC_Idle,%20RRC_Inactive.docx) Inter-gNB path switch to Relay UE in RRC\_Idle, RRC\_Inactive MediaTek Inc. discussion Rel-18

[R2-2212410](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212410%20(R18%20SL%20Relay%20WI_AI893%20Lossless%20Service%20Continuity).doc) Lossless path switching from indirect to indirect/direct InterDigital, Inc. discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212520](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212520-Service%20continuity%20enhancements%20for%20L2%20U2N%20relay.docx) Service continuity enhancements for L2 U2N relay LG Electronics France discussion Rel-18

[R2-2212570](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212570-Discussion%20on%20remaining%20issues%20for%20i2i%20path%20switch.doc) Discussion on remaining issues for i2i path switch Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

Withdrawn/Not available

R2-2211632 Lossless path switching from indirect to indirect/direct InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core Withdrawn

### 8.9.4 Multi-path relaying

Study the benefit and potential solutions for multi-path support to enhance reliability and throughput. Includes the cases 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).

PCell location

[R2-2211208](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211208%20-%20Discussion%20on%20PCell%20location%20for%20Multi-path%20Relay_V2.docx) Discussion on PCell location for Multi-path Relay OPPO, ZTE, Huawei, HiSilicon, MediaTek discussion Rel-18 NR\_SL\_relay\_enh-Core

AI summary

R2-2212964 Summary of agenda item 8.9.4 on multi-path relaying (Apple) Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

=> Withdrawn

[R2-2213122](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2213122%20summary%20of%20AI%208.9.4%20Multi-path%20relay_v3.docx) Summary of agenda item 8.9.4 on multi-path relaying (Apple) Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

Easy

Proposal 1 [Easy] RAN2 confirms the following WA for Scenario 2.

• 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. FFS how to configure the mapping.

• Without the adaptation layer over Uu link in scenario 2, a PDCP PDU can be delivered to an intended PDCP entity or RLC entity for support of more than one RB over Uu link e.g. by configuring 1:1 bearer mapping and different Uu RLC channels for relay UE local traffic and relay traffic for PDU delivery.

• Do not specify adaptation layer over Uu link for scenario 2 in RAN2.

Proposal 2 [Easy] How to configure 1:1 bearer mapping and potential spec impact can be discussed in normative phase.

Proposal 3 [Easy] In principle, Mode 1 RA can be supported for the remote UE configured with multi-path in Scenario 1.

Proposal 6 [Easy] If case B and case D are not supported for Scenario 2, PCell is always on the direct path for Scenario 2.

Proposal 7 [Easy] R2 confirms that split SRB can be configured with or without duplication as in legacy as a baseline. Further restrictions can be discussed in normative phase.

Proposal 13. [Easy]For scenario 2, non-split SRB1/2 is allowed to be configured on direct path.

Proposal 14 [Easy] Remote UE storing indirect path configuration and resuming directly into multi-path configuration is not supported for scenario 1.

Proposal 16 [Easy] If PCell is on direct path, and CSS for SI is configured within the active BWP, the remote UE can perform direct system information acquisition on PCell as currently specified in 38.331; Besides, dedicated signaling can be used to deliver SIB via SRB1 configured on direct and/or indirect path as currently specified in 38.331.

Proposal 17 [Easy] Upon detection of 3GPP-defined RLF failure in one path, remote UE (configured with MP) can report path failure via the alternative available path if SRB1 is configured on the alternative path or split SRB1 is configured.

Proposal 21 [Easy] Legacy PDCP Control PDU transmission mechanism is reused.

To be Discussed

Proposal 3a [RAN2 to discuss] Whether/how to allocate mode 1 SL resource when PCell is not in direct path.

Proposal 4 [RAN2 to Discuss] Whether PCell location is on direct path only or can be on either path.

Proposal 5 [RAN2 to Discuss] RAN2 discuss the technical justification of Per-CP “Primary path” concept before determining whether to support it or not.

Proposal 8 [RAN2 to discuss] data volume threshold for split bearer (DRB) is used or not.

Proposal 6a [RAN2 to discuss] case B and case D are not supported for Scenario 2.

Proposal 9 [RAN2 to discuss] For Scenario 2, Case E are not supported.

Proposal 10 [RAN2 to discuss] For Scenario 2, whether Case G is supported or not.

Proposal 12 [RAN2 to discuss] Whether SRB1/2 can be configured in different path for Scenario 1

Proposal 13a. [RAN2 to discuss] whether non-split SRB1/2 is allowed to be configured on indirect path for scenario 2

Proposal 13b. [RAN2 to discuss]whether split SRB1/2 is supported for scenario 2

Proposal 15 [RAN2 to discuss] Whether to support Remote UE storing indirect path configuration or not and use it to resume to MP configuration for Scenario 2.

Proposal 18 [RAN2 to discuss] Whether to initiate RRC re-establishment if RLF is detected on a path carrying non-split SRB, or if RLF is detected on a path and alternative path with split SRB is suspended.

Proposal 21 [RAN2 to discuss] For triggering IDLE/INACTIVE relay UE to enter CONNECTED state, down select from

-Option 1 (SL-RLC or UP-based approach (excluding SL-RLC1)),

-Option 3 (PC5-RRC approach)

-Option 4( RRCReconfigurationComplete-based approach),

-Option 5 (Discovery/PC5-S based approach)

Low priority

Proposal 11 [Low priority]Whether a single procedure can be supported for Case E and Case G.

Proposal 19 [low priority] RAN2 discuss whether/how to handle non-3GPP ideal link failure.

Proposal 22 [low priority] RNA2 to discuss signaling flow diagrams for path addition case A and case B in Scenario 1, based on input from R2-2211788, R2-2211814 and R2-2212699

Proposal 23 [low priority] RNA2 to discuss which option can be supported for reporting Inter-UE association in Scenario 2, when an indirect path is to be added:

Option 1: Remote UE reporting

Option 2: Relay UE reporting (either relay UE is in CONNECTED state or remote UE has triggered relay UE to enter CONNECTED via non-3GPP ideal link).

The following documents will not be individually treated

[R2-2211207](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211207%20-%20Discussion%20on%20multi-path%20Relay_V1.docx) Discussion on multi-path SL relay OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211281](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211281%20Discussion%20on%20Multi-path%20for%20Scenario1.docx) Discussion on Multi-path for Scenario 1 CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211282](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211282%20Leftover%20issues%20on%20Multi-path%20scenario2.docx) Leftover issues on Multi-path scenario 2 CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211403](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211403_Path%20management%20for%20Multi-path%20Relaying_Intel.docx) Path management for Multi-path Relaying Intel Corporation discussion Rel-18 NR\_SL\_relay-Core

[R2-2211414](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211414_Considerations%20on%20Multipath%20of%20Sidelink%20Relay.docx) Considerations on Multipath of Sidelink Relay NEC Corporation discussion NR\_SL\_relay\_enh-Core

[R2-2211536](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211536_Remaining_Issues_Multipath_Relays_Scenario1_Scenario2.docx) Remaining Issues on Multipath Relays for Scenario-1 and Scenario-2 Ericsson España S.A. discussion Rel-18

[R2-2211537](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211537_PCell_SRB_Handling_Multipath_Relays_Scenario1_Scenario2.docx) PCell and SRB Handling for Multipath Relays in Scenario-1, Scenario-2 Ericsson España S.A. discussion Rel-18

[R2-2211633](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211633%20(R18%20SL%20Relay%20WI_AI894%20MultipathAspects).doc) Design Aspects for Multi-path InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211677](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211677_%20Remaining%20Control%20Plane%20Issues%20for%20Multi-path%20Scenario%201&2.docx) Remaining Control Plane Issues for Multi-path Scenario 1&2 vivo discussion

[R2-2211678](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211678_%20Supporting%20Cases%20and%20Detailed%20Procedures%20for%20Multi-path%20Scenario-1%20and%20Scenario-2.docx) Supporting Cases and Detailed Procedures for Multi-path Scenario-1 and Scenario-2 vivo discussion

[R2-2211699](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211699%20Discussion%20on%20multi-path%20support.doc) Discussion on multi-path relaying support Apple discussion NR\_SL\_relay\_enh-Core

[R2-2211752](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211752%20Discussion%20on%20multi-path%20operation.docx) Discussion on multi-path operation Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211783](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211783%20Discussion%20on%20multi-path%20relaying.docx) Discussion on multi-path relaying China Telecom discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211787](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211787%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

[R2-2211788](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211788-Further%20discussion%20on%20multi-path%20relay%20for%20Scenario%201%20and%20Scenario%202.docx) Further discussion on multi-path relay for Scenario 1 and Scenario 2 Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2211814](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211814%20Discussion%20on%20the%20remaining%20issues%20of%20multi-path%20relaying.docx) Discussion on the remaining issues of multi-path relaying ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211815](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211815%20Further%20discussion%20on%20the%20UE%20aggregation.docx) Further discussion on the UE aggregation ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211874](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211874.docx) Discussion on multi-path Xiaomi discussion

[R2-2211935](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211935.doc) Multi-path relaying discussion Sony discussion Rel-18 NR\_SL\_relay\_enh

[R2-2212027](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212027%20Second%20path%20addition%20and%20failure%20recovery%20for%20Scenario1%20v2.0.docx) Second path addition and failure recovery for Scenario1 Lenovo discussion Rel-18

[R2-2212156](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212156%20Discussion%20on%20multi-path%20relaying.doc) Discussion on multi-path relaying Spreadtrum Communications discussion Rel-18

[R2-2212323](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212323%20MP%20modelling%20v01.docx) MP modelling MediaTek Inc. discussion Rel-18

[R2-2212562](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212562_C-plane_aspects_of_multi-path.doc) C-plane aspects of multi-path Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212563](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212563_discussion_on_scenario2_of_multi-path_relaying.doc) Discussion on scenario 2 of multi-path relaying Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212699](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212699%20Control%20plane%20issues%20in%20multi-path.docx) Control plane issues in multi-path CMCC discussion Rel-18 NR\_SL\_relay\_enh

[R2-2212700](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212700%20Protocol%20stack%20for%20multi-path.docx) Protocol stack for multi-path CMCC discussion Rel-18 NR\_SL\_relay\_enh

[R2-2212722](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212722%20Multipath%20relay.docx) Support of multipath relay Nokia Korea discussion

[R2-2212737](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212737_Control%20Plane%20aspects%20for%20multi-path%20Relaying_Intel.docx) Control plane aspects for multi-path relaying Intel Corporation discussion Rel-18 NR\_SL\_relay-Core

[R2-2212813](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212813_SLRelay_S1&2_v1.doc) Discussion on common features for scenario 1&2 in sidelink relay enhancement Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212814](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212814_SLRelay_S2_v1.doc) Discussion on specific issues for scenario 2 Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2212866](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212866%20Discussion%20on%20Multi-path%20relaying.docx) Discussion on Multi-path relaying Lenovo discussion NR\_SL\_relay\_enh-Core

### 8.9.5 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.

[R2-2212274](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212274_Motivation%20for%20SL%20U2N%20Relay%20DRX%20coordination.docx) Motivation for SL U2N Relay DRX coordination Fraunhofer IIS, Fraunhofer HHI discussion Rel-18 NR\_SL\_relay\_enh

[R2-2211700](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211700%20Discussion%20on%20SL-DRX%20for%20L2%20relay.doc) Discussion on SL DRX for L2 Relay Apple discussion NR\_SL\_relay\_enh-Core R2-2209774

[R2-2211754](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211754%20On%20sidelink%20DRX%20for%20L2%20U2N%20relay.doc) On sidelink DRX for L2 U2N relay Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2211789](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211789-SL%20DRX%20for%20L2%20U2N%20relay.docx) SL DRX for L2 U2N Relay Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2211876](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211876.docx) Discussion on SL DRX in U2N relay Xiaomi discussion

[R2-2211936](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2211936%20Relay_DRX.docx) Discussions on Sidelink Relay DRX Sony discussion Rel-18 NR\_SL\_relay\_enh

## 8.19 R18 Other

Misc Impacts from Other RAN WGs and TSGs (incl MC Enhancements). LS ins for Rel-18 topics that has no RAN WI.

Time budget: 0.5 TU

Tdoc Limitation: -

[R2-2212244](C:\\Users\\mtk16923\\Documents\\3GPP Meetings\\202211 - RAN2_120, Toulouse\\Extracts\\R2-2212244_(SL Relay).docx" \o "C:\Users\mtk16923\Documents\3GPP Meetings\202211 - RAN2_120, Toulouse\Extracts\R2-2212244_(SL Relay).docx) On Positioning Support for L2 UE-to-Network Remote UEs Qualcomm Incorporated discussion R2-2210367

[R2-2212372](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202211%20-%20RAN2_120,%20Toulouse\Extracts\R2-2212372%20RelayPos.docx) Relay based Positioning Procedure Ericsson discussion Rel-17