3GPP TSG-RAN WG2 Meeting #124 R2-23xxxxx

Chicago, Illinois, USA, 13-17 November 2023

Source: Session Chair (MediaTek)

Title: Report from session on positioning and sidelink relay

# 4 EUTRA Rel-17 and earlier

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

## 4.4 Positioning corrections Rel-16 and earlier

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

This Agenda Item will be handled by email.

# 5 NR Rel-15 and Rel-16

Essential corrections only.

Tdoc Limitation: 5 tdocs in total for all sub agenda items.

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

## 5.3 NR Positioning Support

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

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

(NR TEI16 Positioning)

### 5.3.0 In Principle Agreed CRs

[R2-2312270](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312270%20Correction%20to%2038.331%20on%20GNSS-ID%20R16_final.docx) Correction to 38.331 on GNSS-ID Huawei, HiSilicon CR Rel-16 38.331 16.14.0 4417 - F NR\_pos-Core

* Agreed

[R2-2312271](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312271%20Correction%20to%2038.331%20on%20GNSS-ID%20R17_final.docx) Correction to 38.331 on GNSS-ID Huawei, HiSilicon CR Rel-17 38.331 17.6.0 4418 - A NR\_pos-Core

* Agreed

### 5.3.1 General and Stage 2 corrections

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

[R2-2312306](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312306-38305-multi-rtt-sequence-correction.docx) Sequence of Procedure for Multi-RTT positioning correction Apple CR Rel-16 38.305 16.9.0 0148 - F NR\_pos-Core

Discussion:

vivo think the change is essential as the existing typo could lead to real confusion with the on-demand PRS procedure.

Lenovo think we could do other cleanup corrections at the same time: Steps 5a/5b/5c are not properly identified in the procedure, and there is a spurious step 13.

* [AT124][410][POS] Rel-16 multi-RTT positioning sequence (Apple)

Scope: Update the CR in R2-2312306 and the shadow CR in R2-2312307 to take into account the comments on steps 5a/5b/5c and 13.

Intended outcome: Agreed CR (without CB if possible)

Deadline: Thursday 2023-11-16 1900 CST

[R2-2312307](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312307-38305-multi-rtt-sequence-correction-r17.docx) Sequence of Procedure for Multi-RTT positioning correction Apple CR Rel-17 38.305 17.6.0 0149 - A NR\_pos-Core

### 5.3.2 Stage 3 corrections (RRC/LPP/MAC/capabilities)

[R2-2313241](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313241%20REL-16%20CR%2037355%205_3_2%20Positioning%20Frequency%20Layer.docx) Definition of Positioning Frequency Layer Nokia, Nokia Shanghai Bell CR Rel-16 37.355 16.12.0 0483 - F NR\_pos-Core

* Not pursued (issue can be addressed in Rel-18 running LPP CR)

Discussion:

Ericsson think this is not needed, and if any clarification is needed it should come from a RAN1 spec.

Huawei think the CR is OK, but the definition can be simplified; they consider that a PFL is just a collection of DL-PRS configurations with similar characteristics. They would like to clarify if there is something different in the Rel-17 CR.

Samsung support introducing the definition, but they see a need to send an LS to RAN1 to check the content.

Intel agree with Ericsson that nothing is broken and the CR is not essential.

vivo also agree with Ericsson, and they see some issues with the definition in the CR.

Nokia think it is useful to have a definition of a term we use. They understand the Rel-17 CR could be a category A, and they think no check with RAN1 is necessary since the definition came from 38.214.

ZTE agree with Ericsson and others, and they think RAN1 already have the definition and we should not duplicate it in LPP.

Xiaomi think the term is used throughout LPP, so they support the CR.

OPPO think we could refer to the RAN1 spec. CATT would like to check offline.

Nokia think we could refer to 38.214 from some of the places where it is used.

Huawei think adding RAN1 references would be more work than just adding a definition. Nokia agree.

Ericsson think we could just put a reference in the first place it is used.

Intel think we should not take this change in Rel-16 and we should not define everything.

Ericsson think it could be handled in the Rel-18 LPP rapporteur CR. Intel would prefer to see a TEI18. CATT understand that the change is partly related to CPP, so it would be reasonable to take in the Rel-18 WI CR.

Qualcomm checked and we use “positioning frequency layer” 41 times; they think we should have a definition.

Nokia indicate that the intention is not specific to CPP.

Intel think a definition would be better.

Nokia think the concept is important and it would be good to have an explicit definition.

# 6 NR Rel-17

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

## 6.2 NR Sidelink relay

(NR\_SL\_Relay-Core; leading WG: RAN2; REL-17; WID: [RP-212601](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_93e/Docs/RP-212601.zip))

Tdoc Limitation: 1 tdoc

### 6.2.0 In Principle Agreed CRs

[R2-2311885](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311885_38304_CR0353_(REL-17)%20-%20Correction%20on%20SIB%20and%20Preconfiguration%20applicability.docx) Correction on SIB/Preconfiguration applicability OPPO, ZTE CR Rel-17 38.304 17.6.0 0353 2 F NR\_SL\_enh-Core, NR\_SL\_relay-Core R2-2311379

* Agreed as R2-2313791 (coversheet descriptions)

Discussion:

Huawei would prefer to discuss the related contributions in this meeting first.

OPPO recall that we intentionally removed a change where there was no convergence, and this CR only contains the changes that really had consensus, so they think the discussion can be independent.

Ericsson think a coversheet update is needed.

[R2-2312688](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\38331_CR4389r1_(Rel-17)_R2-2312688%20RRC%20corrections%20for%20SL%20relay.docx) RRC corrections for SL relay Huawei, HiSilicon, CATT, Apple, ZTE, China Telecom, Philips International B.V., Lenovo, Xiaomi CR Rel-17 38.331 17.6.0 4389 1 F NR\_SL\_relay-Core R2-2311380

* Agreed

### 6.2.1 Other

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

SIB12 and preconfiguration

[R2-2312614](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312614%20Applicability%20of%20SIB12%20for%20remoteUE.docx) Considerations on applicability of SIB12 received via relay connection Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SL\_relay-Core

* Noted

Proposal 1: An out-of-coverage L2 U2N Remote UE may use its SL-PreconfigurationNR for non-relay SL communication/discovery without considering SIB12 received via a relay connection.

Proposal 2: Adopt the following text proposal in clause 8.1 of TS 38.304 as in the Annex of this document.

[R2-2312624](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312624.docx) Correction on pre-configuration usage Xiaomi Technology CR Rel-17 38.304 17.6.0 0360 - F NR\_SL\_relay\_enh-Core

* Postponed

[R2-2313477](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313477-Clarification%20on%20preconfiguration%20in%20U2N%20relay.docx) Clarification on preconfiguration usage in U2N relay Qualcomm Incorporated discussion Rel-17 NR\_SL\_relay-Core

* Noted

Proposal 1: UE is allowed to use preconfiguration if SIB12 does not provide configuration for the concerned frequency.

Proposal 2: Agree the text proposal for TS 38.304 change as following.

[R2-2313513](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\38304_CR0368_(Rel-17)_R2-2313513%20Clarification%20on%20the%20case%20SL%20frequency%20is%20not%20included%20in%20SIB12.docx) Clarification on the case SL frequency is not included in SIB12 Huawei, HiSilicon CR Rel-17 38.304 17.6.0 0368 - F NR\_SL\_relay-Core

* Postponed

Discussion (joint for above 4 documents):

Ericsson see some interaction with Rel-18 U2U. NEC do not see that there is a connection.

Huawei think it is not related to U2U because the coverage extension is specific to U2N. They see no impact to Rel-18 WI closure and think it would be OK to postpone.

Xiaomi also think there is no relation to U2U or Rel-18 generally. They think we could try to converge offline this meeting.

Qualcomm think it is not related to U2U and would be OK to postpone.

Other CRs

[R2-2312342](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312342%2038331_R17_relay_Correction_destinaiton_list%20_r1.docx) Correction on the SL destinaitons in SUI message Apple, Huawei, HiSilicon CR Rel-17 38.331 17.6.0 4424 - F NR\_SL\_relay-Core

Discussion:

NEC think the NOTE in Alt 1 is enough, but they think the wording can be improved.

Nokia prefer the normative solution, but they can live with the NOTE.

Lenovo think the NOTE is not needed because the same sentence is there in the field description.

* [AT124][412][Relay] Rel-17 CR on destinations in SUI message (Apple)

Scope: Implement Alt 1 of R2-2312342 and allow companies to check the wording.

Intended outcome: Agreed CR (without CB if possible)

Deadline: Thursday 2023-11-16 1900 CST

[R2-2313099](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Docs\R2-2313099.zip) Correction on SL relay RRC Philips International B.V. CR Rel-17 38.331 17.6.0 4466 - F NR\_SL\_relay-Core

Discussion:

Lenovo think the first change is not needed, because the behaviour is captured for the receiver side and not needed for the transmitter side. Philips think if the transmitter does not set the setup value, the receiver behaviour will never be invoked.

Huawei think the first change is functionally obvious and does not need to be documented; we do not always document the setup field. For the second change, they think there is a mistake in the current implementation and the change is OK, and the third change is editorial.

Xiaomi have some sympathy for the first change because the transmitter is a UE; it’s OK that we do not always document it on the network side, but this is different.

OPPO tend to agree with Huawei that the behaviour is obvious.

* [AT124][413][Relay] Sidelink RRC CR implementation correction (Philips)

Scope: Implement and check changes 2 and 3 of R2-2313099.

Intended outcome: Agreed CR (without CB if possible)

Deadline: Thursday 2023-11-16 1900 CST

[R2-2313354](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\38351_CR0028_(Rel-17)_R2-2313354%20Correction%20on%20SRAP%20for%20sidelink%20relay.docx) Correction on SRAP for sidelink relay ZTE, Sanechips CR Rel-17 38.351 17.6.0 0028 - F NR\_SL\_relay-Core

* Not pursued

Apple think the current text is clear because the whole paragraph applies to SRB1 and the missing corresponding channel can only happen for SRB1.

Huawei have the same understanding as Apple that there is no failure mode today, so they see the change as not essential.

[R2-2313458](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313458%20-%2038.300_CR0744_Rel17_Correction%20on%20the%20SidelinkUEInformationNR%20message.docx) Correction on the SidelinkUEInformationNR message Ericsson, Apple, Vivo CR Rel-17 38.300 17.6.0 0744 - F NR\_SL\_relay-Core

* “Then” to be removed in the first added sentence
* Agreed as R2-2313798

Discussion:

NEC think there is already a similar description in 38.331 and the CR is redundant. Ericsson agree but think the stage 2 should be aligned.

NEC doubt if the updated wording is in the correct place; they understand that the SUI should be sent earlier. Apple think this is only applicable for the RRC\_CONNECTED case; NEC agree and think the update is OK for idle/inactive.

Apple suggest removing “Then” in the first added sentence. NEC could be OK with this.

OPPO agree that the SUI does not have a relationship with RRC setup for the remote UE. Ericsson think the SUI has to be triggered by the time the relay UE forwards the first message, but they think removing “Then” can clarify that there is no strict causal relationship.

Not available/Withdrawn

R2-2312932 Correction on the SidelinkUEInformationNR message Ericsson, Apple, Vivo CR Rel-17 38.300 17.6.0 0719 1 F NR\_SL\_relay-Core R2-2311220 Withdrawn

## 6.4 NR positioning enhancements

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

Tdoc Limitation: 1 tdoc

### 6.4.0 In Principle Agreed CRs

[R2-2311868](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311868%20Clarification%20on%20the%20field%20description%20of%20dl-prs-ResourceSetPeriodicityReq.docx) Clarification on the field description of dl-prs-ResourceSetPeriodicityReq vivo CR Rel-17 37.355 17.6.0 0477 - F NR\_pos\_enh-Core Revised

* Revised in R2-2313538 (coversheet)

[R2-2313538](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313538%20Clarification%20on%20the%20field%20description%20of%20dl-prs-ResourceSetPeriodicityReq.docx) Clarification on the field description of dl-prs-ResourceSetPeriodicityReq vivo CR Rel-17 37.355 17.6.0 0477 1 F NR\_pos\_enh-Core R2-2311868

* Agreed

[R2-2312445](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312445%20Correction%20on%20LocationMeasurementIndication%20procedure%20for%20positioning.docx) Correction on LocationMeasurementIndication procedure for positioning ZTE Corporation, Ericsson CR Rel-17 38.331 17.6.0 4336 2 F NR\_pos\_enh-Core R2-2311377

* Agreed

[R2-2313418](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313418%20HAGNSS.docx) Field description correction for HA-GNSS metrics Ericsson CR Rel-17 37.355 17.6.0 0474 2 F NR\_pos\_enh-Core R2-2311378

* Agreed

[R2-2313555](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313555_(TEG%20Capability).docx) Correction to UE TEG Capability Qualcomm Incorporated CR Rel-17 37.355 17.6.0 0475 1 F NR\_pos\_enh-Core R2-2310909

* Agreed

Not available/Withdrawn

R2-2312935 Field description correction for HA-GNSS metrics Ericsson CR Rel-17 37.355 17.6.0 0479 - F NR\_pos\_enh-Core Withdrawn

### 6.4.1 Other

A single CR per TS (RRC, LPP, MAC, UEcap 306) with miscellaneous corrections is encouraged. Small editorial corrections should be sent directly to the CR rapporteur. Larger open issues can be discussed with contributions (limited time).

Including outcome of [Post123bis][402][POS] BDS B1C corrections (CATT)

Incoming LS with “take into account” action

[R2-2311718](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311718_R1-2310675.doc) Reply LS on support of multiple location estimate instances in a single measurement (R1-2310675; contact: ZTE) RAN1 LS in Rel-17 NR\_pos\_enh-Core To:RAN2

* Noted

Additional incoming LS

[R2-2311703](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311703_C4-234472.docx) LS Out Sub One Second Report Period for Deferred Location over SBI (C4-234472; contact: Ericsson) CT4 LS in Rel-17 5G\_eLCS\_ph2 To:RAN2, RAN3

* Postponed

Discussion:

Qualcomm think this is independent of LPP and NRPPa; it only relates to how often the UE evaluates the events. They understand that the SS message has been changed and no LPP change is needed.

Huawei are not sure why this comes up in Rel-17; they understand that the SA2 agreement was for Rel-18. Qualcomm indicate that CT4 took their agreement for Rel-17 (and the LS is labelled for Rel-17).

ZTE note that Ericsson provided a related proposal in Rel-18 integrity. Ericsson indicate that the outcome would be the same but the context is different.

vivo agree with Qualcomm and understand that SA2 are discussing whether to use the periodic report to support deferred MT-LR; if they decide to do so, maybe the change is reasonable in Rel-19. Ericsson think we should avoid mixing discussions from different efforts in different groups, and they understand that it is a wider discussion than just deferred MT-LR.

Qualcomm think the LS is clear, but we need to see what the impact on LPP would be; they think we should not repeat the same discussion.

Nokia agree with Qualcomm.

Email discussion report and related CRs

[R2-2313344](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313344%20Report%20of%20%5bPost123bis%5d%5b402%5d%5bPOS%5d%20BDS%20B1C%20corrections%20(CATT).docx) Report of [Post123bis][402][POS] BDS B1C corrections (CATT) CATT discussion Rel-17 NR\_pos\_enh-Core

Proposal 1: unicast and broadcast of BDS B1C SSR data transmission are included in one Rel-17 CR set.

Discussion:

Ericsson do not see the need; they think some issues have been misunderstood, and there is no need for devices to get the newer signal to function; they understand that devices supporting B1C will also support the older signal.

CATT indicate that the correction data source in China is providing only B1C; there is no B1I correction data set in the China market and we need to meet the market requirement. They also indicate that the dual-frequency operation recommended with B1C is B2A, not B1I.

Swift understand that there is nothing prohibiting corrections being produced for B1C, but the issue is which ephemeris we use as reference. If there is a single-frequency B1C-only device, they are not sure how much use the corrections are, and today they understand that the BDS satellites carrying B1C always carry B1I, so referencing to the B1I ephemeris still works.

CATT understand that corrections based on B1I are not available in China, so there is an operator need to use the corrections based on B1C so that SSR with BDS can be supported.

Ericsson think adding options opens a can of worms, and we should be sure that it is absolutely necessary. They think networks need to consider the possibility of devices that only support one reference.

Chair does not see an alternative to supporting it if there are markets with only B1C corrections. Intel agree.

vivo think the issue is valid; if the source only provides B1C information, then B1C information needs to be distributed, and they do not see a compatibility problem with the change.

Ericsson think normally when there is a gap, market forces will close it. They wonder if the situation with B1C corrections only will remain.

CATT understand the changes meet compatibility requirements and they have not seen a big concern from companies; the CRs introduce a new posSIB, so there should be no impact on existing corrections.

Ericsson have a concern about the resource cost of deploying the changes for a network that needs to support both kinds of devices.

CATT understand that the data are optional from LMF perspective, and what is provided is out of control of 3GPP. They see no requirement for the network to support both.

Huawei agree with CATT that it is optional, and they do not think the resource cost is an issue considering that the posSIBs can be provided on-demand.

OPPO agree with Huawei and CATT.

Swift think there is not consensus yet on the details of the CRs, and they would like some more time to review. They acknowledge that there are services with multiple ephemeris types and a solution should be found, but if we generate a parallel SSR configuration, we should generalise how such cases can be handled.

Huawei have some confusion about the capability/compatibility issue. There is a UE capability in the CR, and they understand that this means the network can configure whatever it wants based on the UE capability, so they see no compatibility issue.

Proposal 2: A new capability should be defined in 37.355 for unicast.

Proposal 3: GNSS-ID should not be changed to keep consistence, otherwise different GNSS-ID definitions in 38.331 and 37.355 will bring confusion.

Proposal 4: A new posSibType (e.g. posSibType2-26) is defined to contain all SSR assistant data which refers to a non-default broadcast ephemeris, e.g. BDS B1C.

Discussion:

Qualcomm think P4 does not make sense, because it forces the new posSIB to be large to incorporate all the SSR assistance data. They see that the only aspect that depends on the ephemeris is the clocks, and they think extending the orbit corrections and adding a new posSIB for just that extension makes sense.

CATT indicate that only clock and orbit are required, so they are willing to reduce the assistance data.

Swift think there would be a backward compatibility issue if we included all the SSR assistance data, but clock and orbit should be OK. They would like time to review the CR.

Proposal 4a: Delta signalling is not used to avoid the complexity for server and devices and to avoid the discussion of unstable value ranges for each delta parameters.

Discussion:

Ericsson understand that if both posSIBs are broadcast, there could be an ambiguity in which data to apply, and the intention was to apply a delta. They think the discussion can be taken in CR review.

CATT understand that there will be no ambiguity because there are separate posSIBs, and they do not see the benefit of delta signalling in a market with no B1I corrections.

Agreements:

Unicast and broadcast of BDS B1C SSR data transmission are included in Rel-17.

A new capability should be defined in 37.355 for unicast.

GNSS-ID should not be changed to keep consistence, otherwise different GNSS-ID definitions in 38.331 and 37.355 will bring confusion.

A new posSibType (e.g. posSibType2-26) is defined to contain the clock and orbit corrections referenced to B1C.

Delta signalling against the B1I corrections is not used to avoid the complexity for server and devices and to avoid the discussion of unstable value ranges for each delta parameters. Details of the signalling formats can be discussed in CR review.

[R2-2313342](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\38331_CR4489_(Rel-17)-R2-2313342.docx) Correction on transmission of SSR Assistance Data based on BDS B1C CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc., OPPO, xiaomi, vivo, Spreadtrum CR Rel-17 38.331 17.6.0 4489 - F NR\_pos\_enh-Core

[R2-2313343](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\37355_CR0485_(Rel-17)-R2-2313343.docx) Correction on transmission of SSR Assistance Data based on BDS B1C CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc., OPPO, xiaomi, vivo, Spreadtrum CR Rel-17 37.355 17.6.0 0485 - F NR\_pos\_enh-Core

[R2-2313504](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\36331_CR4979_(Rel-17)-R2-2313504.docx) Correction on transmission of SSR Assistance Data based on BDS B1C CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc., OPPO, xiaomi, vivo, Spreadtrum CR Rel-17 36.331 17.6.0 4979 - F NR\_pos\_enh-Core

* [AT124][411][POS] BDS B1C corrections CR review (CATT)

Scope: Check the CRs in R2-2313342, R2-2313343, and R2-2313504 and produce revisions if necessary.

Intended outcome: Agreeable CRs

Deadline: Thursday 2023-11-16 1000 CST (for final CR availability)

Batch reporting

[R2-2312269](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312269%20Correction%20to%20UE%20capability%20for%20batch%20reporting.docx) Correction to UE capability for batch reporitng Huawei, HiSilicon CR Rel-17 37.355 17.6.0 0478 - F NR\_pos\_enh-Core

* Agreed

[R2-2313361](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313361%20capability.docx) Correction to UE capability for batch reporitng Ericsson CR Rel-17 37.355 17.6.0 0486 - F NR\_pos\_enh-Core

* Not pursued

Discussion:

Ericsson indicate that there is no RAN1 guidance for this feature. They understand that the multiple reporting was intended for measurements only.

Huawei think Ericsson’s point is out of step with the current spec, which already supports multiple location reporting; they understand that this is also in line with the Rel-17 parameter list, and the question is only whether there should be a capability.

vivo have the same view as Huawei and note that RAN1 did not revert the agreement to have multiple location estimates in the signalling.

Qualcomm have the same understanding as vivo and Huawei; the feature is there and the capability was forgotten.

OPPO agree with Ericsson that the scenario for reporting location multiple times is not valid, and if RAN1 cannot reach consensus, RAN2 should not pursue it.

CATT agree with vivo/Huawei/Qualcomm, and they understand that the LS was just about the capability, not the feature. Samsung also agree and think we do not need to revert the existing support.

ZTE support the CR from Huawei and think we should focus on how we implement the capability; they think we could address it in the field description rather than add a new capability.

Ericsson still think the use case is not justified.

Qualcomm think we implemented the RAN1 agreements and we are just discussing whether there should be a capability. Intel agree that the feature is already there and the question is just capability.

Apple could in theory agree with Ericsson, but realistically they think the way forward is to introduce a new capability.

Ericsson can accept the majority view and think Huawei’s approach is preferable to making the existing capability do double duty.

Other CRs

[R2-2313060](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313060.docx) Missing correction for SBAS ID presence in Rel-17 SI scheduling MediaTek Inc., Ericsson CR Rel-17 38.331 17.6.0 4462 - F NR\_pos\_enh-Core

* Revised in R2-2313797 (TEI17 tag)

Discussion:

Lenovo think strictly speaking this is a functional NBC. Chair thinks it does not break something that already worked.

Huawei are fine with the CR but think it should be connected to a TEI17 change ([SI\_Scheduling]?) Ericsson think it is a grey area.

Nokia also think it is an NBC and they wonder if we could do a field description.

[R2-2313100](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Docs\R2-2313100.zip) Correction on posSIB(s) acquisition Philips International B.V. CR Rel-17 38.331 17.6.0 4467 - F NR\_pos\_enh-Core

* Postponed

Discussion:

Ericsson think it is not necessary to describe behaviour for every extended field.

ZTE support the CR since the new extension field has a separate name as well as the “type1” and “type2” SIBs. They think the first paragraph of the change should include “containing type 2 SIB”.

OPPO think the conditions for at least some changes do not apply to the new scheduling list, and a revision may be needed.

Lenovo think a similar CR was previously not pursued in the main session. They also note that there are a lot of changes here and some clarification may be needed.

Nokia agree with ZTE that the CR is OK except for the type 2 qualifier.

Philips understand that the CR in the main session was technically different.

Huawei agree with Ericsson, and if something is needed it should start from Rel-16.

[R2-2313242](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313242%20REL-17%20CR%2037355%206_4_1%20Positioning%20Frequency%20Layer.docx) Definition of Positioning Frequency Layer Nokia, Nokia Shanghai Bell CR Rel-17 37.355 17.6.0 0484 - F NR\_pos\_enh-Core

=> Not pursued

# 7 Rel-18

## 7.2 Expanded and improved NR positioning

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

Time budget: 2 TU

Tdoc Limitation: 4 tdocs

### 7.2.1 Organizational

Including incoming LSs and rapporteur inputs.

Including, for each affected spec:

* Updated running CR
* List of open issues to be addressed by company contributions
* (where applicable) CR rapporteur input with proposals for stage-3 issues (e.g., signalling details, parameter values/ranges) where company contributrions should be avoided

Including report of [Post123bis][407][POS] Rel-18 positioning capabilities (Xiaomi)

Incoming LSs with RAN2 in Cc:

[R2-2311707](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311707_R1-2310478.doc) LS on PRS bandwidth aggregation (R1-2310478; contact: ZTE) RAN1 LS in Rel-18 NR\_pos\_enh2 To:RAN4 Cc:RAN2, RAN3

* Noted

[R2-2311734](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Docs\R2-2311734.zip) Reply LS on Authorization and Provisioning for Ranging/SL positioning service (R3-235933; contact: Xiaomi) RAN3 LS in Rel-18 Ranging\_SL, NR\_pos\_enh2 To:SA2 Cc:RAN2, CT4

* Noted

[R2-2311744](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311744_R4-2317389.docx) Reply LS to RAN1 on SRS and PRS bandwidth aggregation for positioning (R4-2317389; contact: ZTE) RAN4 LS in Rel-18 NR\_pos\_enh2 To:RAN1 Cc:RAN2, RAN3

* Noted

Incoming LSs with “take into account” action only and no draft reply

[R2-2311745](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311745_R4-2317390.docx) LS on report mapping for positioning measurements with PRS\_SRS bandwidth aggregation (R4-2317390; contact: Ericsson) RAN4 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2, RAN3 Cc:RAN1

* Noted

[R2-2311746](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311746_R4-2317391.docx) LS on SL positioning and carrier phase positioning measurements (R4-2317391; contact: CATT) RAN4 LS in Rel-18 NR\_pos\_enh2 To:RAN1, RAN2, RAN3

* Noted

Other incoming LSs and related documents

[R2-2311704](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311704_R1-2310402.docx) Reply LS on SL positioning MAC agreements (R1-2310402; contact: Huawei) RAN1 LS in Rel-18 FS\_eLCS\_Ph3, NR\_pos\_enh2 To:RAN2 Cc:SA2

* Noted

[R2-2312265](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312265%20Draft%20reply%20LS%20on%20L1%20priority.doc) Draft reply LS on L1 priority Huawei, HiSilicon LS out Rel-18 NR\_pos\_enh2 To:RAN1

[R2-2311765](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311765_S2-2311896.docx) Reply LS to Reply LS to SA2 on assistance information provided to UE (S2-2311896; contact: Xiaomi) SA2 LS in Rel-18 Ranging\_SL To:RAN2, CT1, CT4

* Noted

[R2-2313597](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Docs\R2-2313597.zip) Reply LS on security aspects for Ranging/Sidelink Positioning (S3-235078; contact: Xiaomi) SA3 LSin Rel-18 Ranging\_SL To:SA2, RAN2

* [AT124][401][POS] LS to SA3 on security for SL positioning (Xiaomi)

Scope: Draft an LS to SA3 in reply to R2-2313597 in accordance with our agreements.

Intended outcome: Approvable LS in R2-2313794

Deadline: Thursday 2023-11-16 1900 CST

Open issues list for WI

[R2-2313111](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313111%20Open%20issue%20list%20for%20Rel-18%20positioning%20WI.docx) Open issues list on Rel-18 positioning WI CATT,Intel Corporation, Ericsson, Huawei, Qualcomm Incorporated, xiaomi, discussion Rel-18 NR\_pos\_enh2

* Noted

Running CRs: stage 2

[R2-2311860](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311860%20Introduction%20of%20sidelink%20positioning%20in%2038300.docx) Introduction of sidelink positioning in 38300 vivo CR Rel-18 38.300 17.6.0 0722 - B FS\_NR\_pos\_enh2 Revised

* Revised in R2-2313543

[R2-2313543](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313543%20Introduction%20of%20sidelink%20positioning%20in%2038300.docx) Introduction of sidelink positioning in 38300 vivo CR Rel-18 38.300 17.6.0 0722 1 B FS\_NR\_pos\_enh2 R2-2311860

[R2-2312787](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312787_(Summary%20of%20%5bPost123bis%5d%5b411%5d%5bPOS%5d).docx) Summary of [Post123bis][411][POS] Rel-18 positioning 38.305 CR (Qualcomm) Qualcomm Incorporated discussion

[R2-2312786](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312786_(Stage%202%20CR%20NR_pos_enh2)_v06.docx) Introduction of 'Expanded and improved NR positioning' Qualcomm Incorporated (Rapporteur) CR Rel-18 38.305 17.6.0 0150 - B NR\_pos\_enh2

Running CRs: MAC

[R2-2312259](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312259%20Summary%20of%20email%20discussion%20%5bPost123bis%5d%5b409%5d%5bPOS%5d%20Rel-18%20positioning%20MAC%20CRs%20(Huawei).DOCX) Summary of email discussion [Post123bis][409][POS] Rel-18 positioning MAC CRs (Huawei) Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

[R2-2312258](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312258%20Summary%20of%20discussion%20on%20proposed%20WF%20for%20R18%20MAC%20spec%20drafting.docx) Summary of discussion on proposed WF for R18 MAC spec drafting Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

Proposal1: Revisit the formula for determining CG occasion when the RRC configuration is fully determined

Proposal2: There can be zero or one SR configuration for SL-PRS resource request MAC CE

Proposal3: At most one PUCCH resource for SR is configured for SL-PRS resource request MAC CE.

Proposed4: Come back to this issue of determining the number of SL-PRS retransmission when the signaling details, i.e, the RRC configurations and L1 parameters are completed

Proposal6: At SCI reception, the source ID in SCI for SL-PRS dedicated resource pool when configured as 12 bit is the 12 LSB of the destination ID of the peer UE.

Proposal7: The number of bits for destination ID is 5 bits, the same as in legacy SL-BSR and the number of bits for priority is 3 bits.

Proposal8: eLCID is adopted for SL-PRS request MAC CE.

Proposed5: SL-PRS’s priority is on the same level as data from STCH and lower than SCI reporting MAC CE, Sidelink Inter-UE Coordination Request MAC CE and Sidelink Inter-UE Coordination Information MAC CE, Sidelink DRX Command MAC CE and data from SCCH.

Agreements:

Revisit the formula for determining CG occasion when the RRC configuration is fully determined

There can be zero or one SR configuration for SL-PRS resource request MAC CE

At most one PUCCH resource for SR is configured for SL-PRS resource request MAC CE.

Come back to this issue of determining the number of SL-PRS retransmission when the signaling details, i.e, the RRC configurations and L1 parameters are completed

At SCI reception, the source ID in SCI for SL-PRS dedicated resource pool when configured as 12 bit is the 12 LSB of the destination ID of the peer UE.

The number of bits for destination ID is 5 bits, the same as in legacy SL-BSR and the number of bits for priority is 3 bits.

eLCID is adopted for SL-PRS request MAC CE.

SL-PRS’s priority is on the same level as data from STCH and lower than SCI reporting MAC CE, Sidelink Inter-UE Coordination Request MAC CE and Sidelink Inter-UE Coordination Information MAC CE, Sidelink DRX Command MAC CE and data from SCCH.

[R2-2312260](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312260%20Draft%20running%20MAC%20CR%20for%20CA%20positioning.docx) Draft running MAC CR for CA positioning Huawei, HiSilicon draftCR Rel-18 38.321 17.6.0 NR\_pos\_enh2

* Noted

[R2-2312261](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312261%20Draft%20running%20MAC%20CR%20for%20carrier%20phase%20positioning.docx) Draft running MAC CR for carrier phase positioning Huawei, HiSilicon draftCR Rel-18 38.321 17.6.0 NR\_pos\_enh2

* Noted

[R2-2312262](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312262%20Draft%20running%20MAC%20CR%20for%20LPHAP.docx) Draft running MAC CR for LPHAP Huawei, HiSilicon draftCR Rel-18 38.321 17.6.0 NR\_pos\_enh2

* Noted

[R2-2312263](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312263%20Draft%20running%20MAC%20CR%20for%20REDCAP%20positioning.docx) Draft running MAC CR for REDCAP positioning Huawei, HiSilicon draftCR Rel-18 38.321 17.6.0 NR\_pos\_enh2

* Noted

[R2-2312264](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312264%20Draft%20running%20MAC%20CR%20for%20sidelink%20positioning.docx) Draft running MAC CR for sidelink positioning Huawei, HiSilicon draftCR Rel-18 38.321 17.6.0 NR\_pos\_enh2

* Noted

[R2-2312257](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312257%20Summary%20of%20open%20issue%20list%20for%20MAC%20issues%20for%20R18%20positioning.docx) Summary of open issue list for MAC issues for R18 positioning Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

[R2-2312256](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312256%20Introduction%20of%20R18%20positioning%20to%20MAC%20spec.docx) Introduction of R18 positioning to MAC spec Huawei, HiSilicon CR Rel-18 38.321 17.6.0 1700 - B NR\_pos\_enh2

Running CRs: RRC

[R2-2313031](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313031%20RRCSummaryReport.docx) [Post123bis][410][POS] Rel-18 positioning RRC CR (Ericsson) Ericsson report Rel-18

[R2-2312998](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312998%20RedCap.docx) RRC Positioning RedCap Changes Ericsson draftCR Rel-18 38.331 17.6.0 B NR\_pos\_enh2

* Noted

[R2-2312999](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312999%20SL.docx) RRC Positioning Sidelink Changes Ericsson draftCR Rel-18 38.331 17.6.0 B NR\_pos\_enh2

* Noted

[R2-2313000](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313000%20BWA.docx) RRC Positioning Bandwidth Aggregation Changes Ericsson draftCR Rel-18 38.331 17.6.0 B NR\_pos\_enh2

* Noted

[R2-2313446](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313446%20CPP.docx) Rapporteur CR for CPP Positioning RRC Changes Ericsson draftCR Rel-18 38.331 17.6.0 B NR\_pos\_enh2

* Noted

[R2-2312941](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312941%20MainLPHAP.docx) Introduction of NR Positioning Ericsson CR Rel-18 38.331 17.6.0 4454 - B NR\_pos\_enh2

Running CRs: LPP

[R2-2313112](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313112%20Report%20of%20%5bPost123bis%5d%5b408%5d%5bPOS%5d%20Rel-18%20LPP%20running%20CRs%20(CATT).docx) Report of [Post123bis][408][POS] Rel-18 LPP running CRs (CATT) CATT discussion Rel-18 NR\_pos\_enh2

[R2-2313113](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313113%20Introduction%20of%20RAT-dependent%20integrity.docx) Introduction of RAT-dependent integrity CATT draftCR Rel-18 37.355 17.6.0 NR\_pos\_enh2

* Noted

[R2-2313114](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313114%20Introduction%20of%20bandwidth%20aggregation.docx) Introduction of bandwidth aggregation CATT draftCR Rel-18 37.355 17.6.0 NR\_pos\_enh2

* Noted

[R2-2313115](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313115%20Introduction%20of%20Carrier%20Phase%20positioning.docx) Introduction of Carrier Phase Positioning CATT draftCR Rel-18 37.355 17.6.0 NR\_pos\_enh2

* Noted

[R2-2313116](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313116%20Introduction%20of%20LPHAP%20and%20Redcap%20positioning.docx) Introduction of LPHAP and Redcap positioning CATT draftCR Rel-18 37.355 17.6.0 NR\_pos\_enh2

* Noted

[R2-2313117](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313117%20Introduction%20of%20Expanded%20and%20improved%20NR%20positioning.docx) Introduction of Expanded and improved NR positioning CATT CR Rel-18 37.355 17.6.0 0481 - B NR\_pos\_enh2

CRs to specs without running CRs

[R2-2312267](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312267%20Introduction%20of%20R18%20positioning%20to%20IDLE%20mode%20procedure.docx) Introduction of R18 positioning to RRC\_IDLE mode procedure Huawei, HiSilicon CR Rel-18 38.304 17.6.0 0358 - B NR\_pos\_enh2

Discussion:

Intel think it is generally OK, but the ENs need to be removed; they think we can generally follow V2X practice.

Sony think some more work on the CR is needed for RRC\_INACTIVE.

CATT think we should check only the mandatory requirements, not further enhancements.

[R2-2312268](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312268%20Introduction%20of%20R18%20positioning%20to%20MR-DC.docx) Introduction of R18 positioning to MR-DC Huawei, HiSilicon CR Rel-18 37.340 17.6.0 0371 - B NR\_pos\_enh2

Discussion:

Lenovo think this is already clear since SL positioning requires discovery and communication.

Intel agree with Huawei and think it is clear that this cannot be done.

CATT are also fine with the change.

Ericsson have some sympathy with Lenovo’s comment and think we do not need a separate sentence. They also think we need to normalize on whether we say “SL positioning/ranging” or “NR sidelink positioning” or something else.

Agreement:

If the CR to TS 37.340 is agreed, the rapporteurs will add the TS to the WID for RAN#102.

* [AT124][402][POS] Rel-18 SL positioning CRs to 38.304 and 37.340 (Huawei)

Scope: Check the CRs in R2-2312267 and R2-2312268, collect detailed comments, and determine whether to have the CR to 37.340.

Intended outcome: Agreeable CR(s)

Deadline: Wednesday 2023-11-15 1900 CST

UE capabilities

[R2-2312762](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312762%20Open%20issue%20list%20for%20Rel-18%20positioning%20capability.doc) Open issue list for Rel-18 positioning capability Xiaomi discussion

NR\_pos\_enh2

Proposals for SL positioning:

Proposal 1 RAN2 to confirm the above understanding relating to the applicable positioning methods of each RAN1 feature.

Proposal 2 RAN2 to agree that positioning method specific capabilities are included in the positioning method specific capability IE.

Proposal 3 RAN2 to agree that periodical reporting capability is indicated per positioning mode per positioning method.

Proposal 4 RAN2 to agree that 10ms granularity response time is indicated per positioning mode per positioning method.

Proposal 9 Target UE needs to know the supported positioning methods of server UE.

Proposal 10 The supported positioning methods of server UE can be provided through metadata of discovery message.

Proposal 11 No capability signalling specific to server UE is needed.

Discussion:

Intel think P9 and P11 contradict each other. Xiaomi clarify that P10 unifies them. Intel think P10 belongs to the metadata discussion.

Lenovo wonder on P3/P4 why we need to report these per mode; they understand why it would be different per method. Xiaomi understand that this follows Uu positioning.

Agreements:

SL-PRS-related capabilities are grouped according to the table in R2-2312762.

Positioning method specific capabilities are included in the positioning method specific capability IE.

RAN2 to agree that periodical reporting capability is indicated per positioning mode per positioning method.

10ms granularity response time is indicated per positioning mode per positioning method.

Proposal 5 RAN2 agrees to have the following three SL positioning modes:

- UE assisted LMF based: an operation in which measurements are provided by the UE to the LMF to be used in the computation of a position estimate.

- UE assisted server UE based: an operation in which measurements are provided by the UE to the server UE to be used in the computation of a position estimate.

- UE based: an operation in which UE computes its own position.

Proposal 6 If scheduled location time is supported, corresponding capability is introduced and indicated per positioning mode per positioning method.

Proposal 7 Supported UE roles are included in the capability signalling.

Proposal 8 The UE roles in the capability signalling include anchor UE, anchor UE with location (i.e. located UE), server UE. UE can indicate the support of multiple UE roles.

Proposals for Uu positioning:

Proposal 12 Additional finer-grained capabilities for RAT dependent positioning integrity are not needed.

Proposal 13 Wait the progress on the alignment of PRS to fixed (e)DRX and then decides whether the corresponding capability is needed or not.

Proposal 14 The UE capability on supporting SRS with validity area request by RRC message is not needed.

[R2-2312761](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312761%20Report%20of%20%5bPost123bis%5d%5b407%5d%5bPOS%5d%20Rel-18%20positioning%20capabilities.docx) Report of [Post123bis][407][POS] Rel-18 positioning capabilities Xiaomi discussion

[R2-2312726](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312726%20306%20Running%20CR%20for%20SL%20positioning.doc) Running CR 38.306-SL positioning Xiaomi draftCR Rel-18 38.306 17.6.0 B

[R2-2312727](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312727%20TP%20for%20SLPP%20and%20RRC%20capability%20signalling%20for%20SL%20positioning.doc) TP for SLPP and RRC capability signalling for SL positioning Xiaomi discussion Rel-18

[R2-2312752](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312752%20Running%20CR%2038.306%20for%20R18%20Uu%20positioning.docx) Running CR 38.306 for R18 Uu positioning Xiaomi draftCR Rel-18 38.306 17.6.0 NR\_pos\_enh2

[R2-2312755](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312755%20TP%20for%20LPP%20capability%20signalling%20for%20Bandwidth%20Aggregation.doc) TP for LPP capability signalling for Bandwidth Aggregation Xiaomi discussion

[R2-2312756](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312756%20TP%20for%20LPP%20capability%20signalling%20for%20CPP.doc) TP for LPP capability signalling for CPP Xiaomi discussion

[R2-2312757](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312757%20TP%20for%20LPP%20capability%20signalling%20for%20LPHAP.doc) TP for LPP capability signalling for LPHAP Xiaomi discussion

[R2-2312758](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312758%20TP%20for%20LPP%20capability%20signalling%20for%20RAT-dependent%20positioning%20integrity.doc) TP for LPP capability signalling for RAT-dependent positioning integrity Xiaomi discussion

[R2-2312759](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312759%20TP%20for%20LPP%20capability%20signalling%20for%20RedCap.doc) TP for LPP capability signalling for RedCap Xiaomi discussion

[R2-2312760](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312760%20TP%20for%20RRC%20capability%20signalling%20for%20Uu%20positioning.doc) TP for RRC capability signalling for Uu positioning Xiaomi discussion

TS 38.355

[R2-2312020](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312020_%5bPost123bis%5d%5b412%5d%5bPOS%5d%20TS%2038.355%20(Intel)_v15_Summary%20Final.docx) Report of [Post123bis][412][POS] TS 38.355 (Intel) Intel Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2312021](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Docs\R2-2312021.zip) TS 38.355 v1.2.0 Intel Corporation draft TS Rel-18 38.355 1.2.0 NR\_pos\_enh2

Discussion:

Lenovo think there are some issues with parameter values, but they can be resolved in the next version. Intel agree that there are some details to be resolved.

* Endorsed [to be progressed during this meeting]

[R2-2312022](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312022%20%20SLPP%20related%20open%20issues.docx) Further Considerations on SLPP related open issues Intel Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2312023](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312023%20Draft%2038.355-130-rm.docx) Draft TS 38.355 v1.3.0 Intel Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2312028](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312028%20Capture%20SLPP%20related%20RAN1%20parameters.docx) Capture SLPP related RAN1 parameters Intel Corporation discussion Rel-18 NR\_pos\_enh2

* [AT124][403][POS] Progress TS 38.355 (Intel)

Scope: F2F offline to discuss R2-2312020 and R2-2312028 and identified open issues on the SLPP specification. Additional open issues identified by companies can be discussed if time is available.

Intended outcome: Report to CB session in R2-2313795

Schedule: Wednesday 1100-1130 in Brk3

Deadline: Thursday 2023-11-16 1100 CST

Draft outgoing LS

[R2-2313118](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313118%20Draft%20LS%20to%20SA2%20on%20introduction%20of%20RAT-Dependent%20integrity.docx) Draft LS to SA2 on introduction of RAT-Dependent integrity CATT LS out Rel-18 NR\_pos\_enh2 To:SA2

Discussion:

Ericsson think there are already related contributions in SA2, but they think an LS is needed and should include CT4 for the LCS client signalling.

Qualcomm do not see a need for an LS, but they think if it is to be sent, it should be precise, e.g., about what positioning methods are involved. Ericsson note that integrity is RAN2-led and think an LS detailing the agreements would be good.

CATT agree CT4 can be included.

vivo think since we agreed to reuse the legacy KPIs, there may not be impacts on CT4. They think CT4 should not be in To: but maybe Cc:. Qualcomm agree; they think the signalling is not dependent on positioning methods, and they see only that SA2 need to update a NOTE.

Ericsson are concerned about the transfer of the positioning result back to the LCS client. Qualcomm think this is a CT4 issue, not RAN2.

* [AT124][404][POS] LS to SA2 on RAT-dependent integrity (CATT)

Scope: Progress the LS in R2-2313118, aligning with agreements of this meeting if necessary and taking into account company comments. CT4 is in Cc: and expected action for SA2 is “take into account”.

Intended outcome: Approvable LS (without CB if possible) in R2-2313796

Deadline: Wednesday 2023-11-15 1900 CST

### 7.2.2 Sidelink positioning

Positioning architecture and unicast signalling procedures (e.g. configuration, measurement reporting, etc) to enable session-based sidelink positioning for a single target UE. Including measurements to enable RTT-based positioning, SL-AoA, and SL-TDOA; signalling and associated UE behaviour for support of unicast, groupcast (not including many-to-one) and broadcast of SL-PRS transmissions; reporting signalling and procedures to facilitate support of SL positioning between UEs and between UEs and LMF (the latter for in-coverage scenarios only and including joint PC5-Uu scenarios, and with the assumption that all UEs are served by the same LMF); and signalling to NG-RAN for SL positioning and service authorization as needed. No work on procedures for synchronization of the anchor UEs for SL-TDOA.

Companies are requested not to contribute documents on SLPP forwarding or discovery metafield contents. The corresponding email discussions will be treated under this agenda item.

Including report of [Post123bis][404][POS] SLPP forwarding (Intel)

Including report of [Post123bis][405][POS] Sidelink positioning discovery metafield (vivo)

Email discussion reports

[R2-2312019](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312019.docx) Report of [Post123bis][404][POS] SLPP forwarding (Intel) Intel Corporation discussion Rel-18 NR\_pos\_enh2

Proposal: SLPP forwarding functionality shall not be supported for Rel-18 and RAN2 understands that forwarding (if needed) will be handled by CT1 according to SA2 WF. RAN2 also agrees to provide support to other groups on this aspect as needed.

Discussion:

vivo think the “shall not be supported” part is confusing an dshould be clearly scoped to RAN2. Chair suggests “is not supported in RAN2”; Intel suggest “in SLPP specification”.

ZTE agree with Intel’s interpretation. They also understand that SA2 have agreed on forwarding and “(if needed)” could be deleted. Intel think SA2 still need to confirm this decision and it is not RAN2 business.

Xiaomi think we should clarify that it is for both network-involved and UE-only cases.

Apple think we should just agree that we do not support it, and assume SA2/CT1 will figure out what is needed from them.

Agreement:

SLPP forwarding functionality is not specified in SLPP spec. RAN2 will provide support to other groups on this aspect as needed.

[R2-2311863](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311863%20Report%20of%20%5bPost123bis%5d%5b405%5d%5bPOS%5d%20Sidelink%20positioning%20discovery%20metafield%20(vivo).docx) Report of [Post123bis][405][POS] Sidelink positioning discovery metafield (vivo) vivo report Rel-18 FS\_NR\_pos\_enh2

Proposal 1 (13/16): RAN2 to specify the RSPP metafield in SLPP specification as a separate PDU/ASN.1 module.

Proposal 2 (13/15): Introduce an unified RSPP metafield structure for all the discovery messages.

Proposal 3: Ask SA2 whether the metafield type (i.e., announced, required, satisfied) can be implicitly indicated by the discovery message that carries the metafield. If not feasible, introduce an explicit indication of the metafield type.

Proposal 4 (12/16): To distinguish the Reference UE/Anchor UE from Located UE, the UE announced as anchor UE in the RSPP metafield should also indicate the availability of known location (1-bit indication).

Proposal 5 (14/16): Multiple UE roles can be indicated in the RSPP metafield.

Proposal 6 (12/18): No need to explicitly indicate the SLPP support in the RSPP metafiled.

Proposal 7 (11/18): Include the Sidelink positioning methods (i.e., SL-RTT, SL-AoA, SL-TDOA, SL-TOA) of anchor UE in the RSPP metafiled.

Proposal 8 (9/17): No need to include Sidelink positioning methods of server UE in the RSPP metafiled. Can revisit this if server UE will expose its capability to other UEs via SLPP ProvideCapabilities message.

Proposal 9: During discovery, anchor UE should indicate whether it is in the coverage of a network supporting Ranging/SL Positioning. Ask SA2 whether the indication is inside or outside the RSPP metafield.

Proposal 10 (17/17): No need to include the serving PLMN in the RSPP metafiled.

Proposal 11 (10/17): No need to include the mobility status (Stationary or movable) of anchor UE in the RSPP metafiled. Can revisit this if SA2 decides it is needed.

Proposal 12: Reply LS to SA2 on the agreements and issues related to the RSPP metafield.

Discussion:

Lenovo think there was some doubt about which spec should capture the metafield in P1. They understand that TS 24.514 captures CT1 details for the discovery procedures and messages, and they think the content of the metafield could be captured there with a TP provided by RAN2.

Apple have a similar understanding that RAN2 were tasked to agree on the content but not actually specify it.

Intel understand that Lenovo are providing something like the RAN1 parameter list style. They have no strong view on which way we go.

Huawei tend to think RAN2 should specify the metafield to have it transparent to CT1/SA2 and capture only the RAN2-relevant parameters, so they agree with the proposal.

Xiaomi think we should specify in the RAN2 spec and avoid a lot of interaction with CT1.

Nokia agree that this is a RAN2 job given to us from SA2, and we do not have time to offload it to another group.

Qualcomm think this is not a PDU but a basic production IE; we could define an IE in SLPP that will be encoded in a bit string format by CT1.

Intel think the simple way is to define an SLPP message and let CT1 embed it in the discovery message.

Sony think the question is whether to define the format in ASN.1 in SLPP or let CT1 define it based on our parameters.

Apple suggest that we take the content discussion first; if the metafield is small, the ping-pong will be minimal.

Intel think if we use the PDU approach, it becomes difficult for the upper layer to generate the discovery message by itself, so they tend to agree with Lenovo’s proposal.

vivo think we cannot decouple the layers because the filtering is done by the SLPP layer after it gets the metafield information, so they do not see a problem with specifying it in SLPP.

Apple suggest we specify it in SLPP but not in ASN.1.

Ericsson would prefer it to be done by CT1.

Nokia think if we want CT1 to do the definition, we need to give them a detailed list of parameters, and the delta between that and defining it ourselves is small.

OPPO think normally we do not send such a request directly to CT1 but go via SA2., which would consume more time. So they think it is better to specify it as an SLPP IE.

ZTE think we should let CT1 do the formatting; if we design a separate IE in SLPP, they see it as weird that it would be defined but not used. However, they agree with Nokia that we should give a detailed list of parameters.

OPPO think the target UE needs to select the server UE and should know about the supported positioning methods. Ericsson think it is not necessary for this release and we should minimise spec impact.

Agreements:

To distinguish the Reference UE/Anchor UE from Located UE, the UE announced as anchor UE in the RSPP metafield should also indicate the availability of known location (1-bit indication).

Multiple UE roles can be indicated in the RSPP metafield.

To be discussed offline whether this information is captured as an SLPP IE, a parameter list in SLPP spec, or a parameter list sent to SA2/CT1 in an LS.

* [AT124][405][POS] Format of SL positioning discovery metafield (vivo)

Scope: F2F offline to discuss whether the discovery metafield is captured as an SLPP IE, a parameter list in SLPP spec, or a parameter list sent to SA2/CT1 in an LS.

Intended outcome: Report to CB session in R2-2313792

Schedule: Wednesday 1130-1200 in Brk3

Deadline: Wednesday 2023-11-15 1900 CST

* [AT124][406][POS] SL positioning MAC functional issues (Huawei)

Scope: F2F offline to narrow down MAC functional issues and establish consensus where possible.

Intended outcome: Report to CB session in R2-2313599

Schedule: Wednesday 1030-1055 in Brk1 (during coffee break)

Deadline: Wednesday 2023-11-15 1900 CST

R2-2313599 Offline discussion on the MAC layer for Sidelink positioning Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

P17-P31 (RRC issues)

[R2-2312255](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312255%20Remaining%20issues%20in%20the%20lower%20layer%20for%20Sidelink%20positioning.docx) Remaining issue for the lower layer for sidelink positioning Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

P3-P13 (MAC issues)

[R2-2312441](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312441%20Discussion%20on%20remaining%20issues%20for%20lower-layer%20related%20sidelink%20positioning.docx) Discussion on remaining issues for lower-layer related sidelink positioning ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2311861](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311861%20Remaining%20issues%20on%20higher%20layer%20aspects%20for%20sidelink%20positioning.docx) Remaining issues on higher layer aspects for sidelink positioning vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2311862](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311862%20Discussion%20on%20remaining%20issues%20of%20SL-PRS%20transmission.docx) Discussion on remaining issues of SL-PRS transmission vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2311929](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311929_Sidelink_Fraunhofer.docx) UE Positioning using Sidelink Fraunhofer IIS, Fraunhofer HHI discussion

[R2-2312024](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312024.docx) MAC related open issues on SL positioning Intel Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2312127](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312127%20SLPP%20and%20SLpos%20caps.doc) Further discussion on SLPP and SL positioning capabilities Lenovo discussion Rel-18 NR\_pos\_enh2

[R2-2312254](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312254%20Discussion%20on%20higher%20layer%20aspects%20for%20Sidelink%20Positioning.docx) Discussion on higher layer aspects for sidelink positioning Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

[R2-2312266](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312266%20Control%20plane%20open%20issues%20for%20R18%20sidelink%20poisitioning.docx) Control plane open issue for R18 SL positioning Huawei, HiSilicon, Ericsson discussion Rel-18 NR\_pos\_enh2

[R2-2312310](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312310-SL-POS-capabilities-v0.docx) SL Positioning Capabilities Apple discussion Rel-18 NR\_pos\_enh2

[R2-2312311](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312311-LS-discovery-v0.docx) [DRAFT] Reply LS on Sidelink positioning procedure Apple LS out Rel-18 NR\_pos\_enh2 To:SA2, CT1 Cc:RAN1, SA3

[R2-2312370](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312370%20Remaining%20issues%20on%20R18%20sidelink%20positioning.docx) Remaining issues on R18 sidelink positioning LG Electronics Inc. discussion Rel-18

[R2-2312442](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312442%20Discussion%20on%20remaining%20issues%20for%20higher-layer%20related%20sidelink%20positioning.docx) Discussion on remaining issues for higher-layer related sidelink positioning ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2312554](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Docs\R2-2312554.zip) Further discussion on sidelink positioning SLPP left issue OPPO discussion Rel-18 NR\_pos\_enh2

* Revised in R2-2313572

[R2-2313572](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313572%20Further%20discussion%20on%20sidelink%20positioning%20SLPP%20left%20issue.docx) Further discussion on sidelink positioning SLPP left issue OPPO discussion Rel-18 NR\_pos\_enh2

[R2-2312555](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312555%20Discussion%20on%20sidelink%20positioning%20leftover%20MAC%20issue.docx) Discussion on sidelink positioning leftover MAC issue OPPO discussion Rel-18 NR\_pos\_enh2

[R2-2312566](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312566%20Discussion%20on%20remaining%20issues%20for%20SL%20positioning.docx) Discussion on remaining issues for SL positioning Spreadtrum Communications discussion Rel-18

[R2-2312724](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312724%20Discussion%20on%20SL%20positioning%20open%20issues.doc) Discussion on SL positioning open issues Xiaomi discussion Rel-18

[R2-2312807](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312807_SLPosDiscussion.docx) Remaining issues on SL Positioning Lenovo discussion Rel-18

[R2-2312836](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312836_SL_Pos_Res_Final.docx) Considerations on multiplexing, congestion control and ARP Sony discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2312934](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312934%20(R18%20NR%20POS%20A722%20SL%20POS).docx) Discussion on sidelink positioning InterDigital, Inc. discussion Rel-18 NR\_pos\_enh2

[R2-2312937](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312937%20SL.docx) Remaining issue for NW involved Sidelink positioning Ericsson discussion Rel-18

[R2-2313059](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313059%20-%20Handling%20of%20Sequence%20ID.docx) Handling of SequenceID in SLPP Philips International B.V. discussion NR\_pos\_enh2

[R2-2313270](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313270%20Discussion%20on%20MAC%20open%20issues.doc) Discussion on MAC open issues Samsung discussion NR\_pos\_enh2-Core

[R2-2313329](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313329_(SLPP).docx) Further Considerations on SLPP Design Qualcomm Incorporated discussion

[R2-2313340](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313340%20open%20issue%20for%20SLPP%20design_v3.docx) Discussion on the selected remaining issues on SLPP design Samsung R&D Institute UK discussion

[R2-2313356](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313356-Further%20Discussions%20on%20Sidelink%20Positioning%20and%20Ranging.docx) Further discussion on SL positioning and ranging CEWiT discussion

[R2-2313484](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313484.docx) Discussion of MAC and resource allocation aspects Nokia Netherlands discussion Rel-18

[R2-2313503](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313503.docx) Discussion of SLPP signalling procedures Nokia Netherlands discussion Rel-18

[R2-2313539](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313539%20Providing%20Anchor%20UE%20location%20uncertainty.docx) Providing Anchor Location Uncertainty Philips International B.V. discussion NR\_pos\_enh2

Documents on SLPP forwarding or discovery metafield (disallowed topics)

[R2-2313480](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313480.docx) Discussion of SLPP forwarding aspects Nokia Netherlands discussion Rel-18

### 7.2.3 RAT-dependent integrity

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

[R2-2313119](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313119%20Remaining%20Issues%20for%20RAT-dependent%20integrity.docx) Remaining Issues for RAT-dependent integrity CATT discussion Rel-18 NR\_pos\_enh2

[R2-2312938](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312938%20Integrity.docx) Open issues for RAT-dependent integrity Ericsson discussion Rel-18

### 7.2.4 LPHAP

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

[R2-2313249](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313249_Remaining%20issues%20on%20LPHAP.docx) Remaining issues on LPHAP Samsung discussion Rel-18 NR\_pos\_enh2

[R2-2313319](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313319%20LPHAP%20SRS%20Config%20Release.docx) LPHAP issue of area-specific SRS configuration release Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_pos\_enh2-Core

P1 (access category)

[R2-2311864](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311864%20Discussion%20on%20remaining%20issues%20of%20LPHAP.doc) Discussion on remaining issues of LPHAP vivo discussion Rel-18 FS\_NR\_pos\_enh2

P1+P5 [WAs on resume causes]

[R2-2312025](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312025%20LPHAP.docx) Further considerations on LPHAP Intel Corporation discussion Rel-18 NR\_pos\_enh2

P14 (WA on PRS alignment capability)

[R2-2312440](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312440%20Discussion%20on%20remaining%20issues%20for%20LPHAP.docx) Discussion on remaining issues for LPHAP ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2311930](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311930_LPHAP_Fraunhofer.docx) Reliable LPHAP position with extended DRX cycle Fraunhofer IIS, Fraunhofer HHI discussion R2-2309579

[R2-2312253](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312253%20Discussion%20on%20LPHAP.docx) Discussion on LPHAP Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

[R2-2312401](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312401%20R18%20NR%20POS%20A724%20LPHAP.doc) Discussion on LPHAP InterDigital Inc. discussion Rel-18

[R2-2312465](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312465%20Discussion%20on%20low%20power%20high%20accuracy%20positioning.doc) Discussion on low power high accuracy positioning Lenovo discussion Rel-18

[R2-2312556](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312556%20Discussion%20on%20the%20leftover%20issues%20of%20LPHAP%20enhancement.docx) Discussion on the leftover issues of LPHAP enhancement OPPO discussion Rel-18 NR\_pos\_enh2

[R2-2312753](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312753%20Discussion%20on%20LPHA%20positioning.doc) Discussion on LPHA positioning Xiaomi discussion

[R2-2312803](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312803_(LPHAP).docx) Remaining issues for LPHAP Qualcomm Incorporated discussion

[R2-2312837](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312837_LPHAP_Final.docx) Remaining considerations on Low Power High Accuracy Positioning Sony discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2312939](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312939%20LPHAP.docx) Remaining issue on Low Power High Accuracy Positioning Ericsson discussion Rel-18

[R2-2313120](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313120%20Discussion%20on%20leftover%20issues%20of%20LPHAP.docx) Discussion on leftover issues of LPHAP CATT discussion Rel-18 NR\_pos\_enh2

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

RAN1 led objectives that may require progress in RAN1 before RAN2 can take decisions.

[R2-2313123](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313123%20Discussion%20on%20leftover%20issues%20of%20Carrier%20Phase%20Positioning.docx) Discussion on leftover issues of Carrier Phase Positioning CATT discussion Rel-18 NR\_pos\_enh2

[R2-2312804](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312804_(PRS%20Aggregation).docx) Remaining Issues for DL-PRS Aggregation Qualcomm Incorporated discussion

[R2-2312838](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312838_RedCap_Final.docx) Discussion on Frequency hopping for Positioning for RedCap Ues Sony discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2312082](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312082%20Discussion%20on%20RAN1%20led%20positioning%20topics.docx) Discussion on RAN1 led positioning topics Huawei, HiSilicon discussion

[R2-2312402](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312402%20R18%20NR%20POS%20A725_NRCP.doc) Discussion on positioning for NR Carrier Phase positioning InterDigital Inc. discussion Rel-18

[R2-2312403](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312403%20R18%20NR%20POS%20A725_RedCap.doc) Discussion on positioning for RedCap UE positionin InterDigital Inc. discussion Rel-18

[R2-2312443](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312443%20Discussion%20on%20remaining%20issues%20for%20BW%20aggregation%20and%20RedCap%20positioning.docx) Discussion on remaining issues for BW aggregation and RedCap positioning ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2312466](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312466%20Discussion%20on%20RedCap,%20carrier%20phase%20positioning%20and%20PRS,SRS%20bandwidth%20aggregation.docx) Discussion on RedCap positioning, carrier phase positioning and PRS/SRS bandwidth aggregation Lenovo discussion Rel-18

[R2-2312754](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312754%20Discussion%20on%20carrier%20phase%20positioning%20and%20bandwidth%20aggregation%20for%20positioning.doc) Discussion on carrier phase positioning and bandwidth aggregation for positioning Xiaomi discussion

[R2-2312805](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312805_(PRU).docx) Remaining Issues on PRU Operation Qualcomm Incorporated discussion

[R2-2312940](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312940%20RAN1LedTopic.docx) Discussion based upon RAN1 agreements on CPP, RedCap, Bandwidth aggregation Ericsson discussion Rel-18

[R2-2313121](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313121%20Draft%20LS%20to%20RAN1%20on%20positioning%20issues%20needing%20further%20input.docx) Draft LS to RAN1 on positioning issues needing further input CATT LS out Rel-18 NR\_pos\_enh2 To:RAN1 Cc:RAN3, RAN4

[R2-2313122](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313122%20Discussion%20on%20leftover%20issues%20of%20%20bandwidth%20aggregation.docx) Discussion on leftover issues of bandwidth aggregation CATT discussion Rel-18 NR\_pos\_enh2

[R2-2313223](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313223%20CPP%20in%2038.305.docx) Capturing carrier phase positioning in TS 38.305 Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_pos\_enh2-Core

[R2-2313250](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313250_Remaining%20issues%20on%20BW%20aggregation.docx) Remaining issues on BW aggregation Samsung discussion Rel-18 NR\_pos\_enh2

## 7.9 Enhanced NR Sidelink Relay

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

Time budget: 1.5 TU

Tdoc Limitation: 4 tdocs

### 7.9.1 Organizational

Including incoming LSs and rapporteur inputs.

Including, for each affected spec:

* Updated running CR
* List of open issues to be addressed by company contributions
* (where applicable) CR rapporteur input with proposals for stage-3 issues (e.g., signalling details, parameter values/ranges) where company contributrions should be avoided

Including outcome of [Post123bis][420][Relay] Rel-18 relay MAC identified open issues (Apple)

Incoming LS with RAN2 in Cc:

[R2-2311722](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311722_R3-235761.docx) LS on handling of location information in multi-path operation (R3-235761; contact: LGE) RAN3 LS in Rel-18 NR\_SL\_relay\_enh-Core, 5G\_ProSe\_Ph2 To:SA2 Cc:RAN2

* Noted

Incoming LS from SA3

[R2-2313595](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313595_S3-235005.docx) LS reply on Reporting of Relay UE C-RNTI and NCGI (S3-235005; contact: Huawei) SA3 LSin Rel-18 NR\_SL\_relay\_enh-Core To:RAN2

* Noted

Discussion:

Apple understand we have not discussed this yet in the context of scenario 2, where the security is outside 3GPP scope.

Huawei think companies have assumed that the connection between UEs is up to implementation, including assurance of security. They think SA3 conclusion aligns with the understanding in RAN2.

vivo think we do not need to discuss it and the assumption should be workable.

Ericsson wonder if we should capture something saying that this is necessary. NEC agree and think a NOTE in stage 2 could be sufficient.

Samsung agree with Ericsson and think we should capture something in stage 2.

Apple think it should be a normative requirement.

Agreement:

Capture in stage 2 a NOTE indicating that the link for scenario 2 must support security of this information.

Incoming LS and related TP

[R2-2311724](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311724_R3-235770.docx) Reply LS to RAN2 on mode 1 scheduling in inter-DU multi-path (R3-235770; contact: NEC) RAN3 LS in Rel-18 NR\_SL\_relay\_enh-Core To:RAN2

* Noted

[R2-2312219](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312219.docx) (TP for TS 38.300) on mode 1 RA for inter-DU U2N remote UE NEC other Rel-18 NR\_SL\_relay\_enh-Core

* Noted (to be handled in 38.300 CR discussion)

Discussion:

Ericsson think this can be left to the CR discussion.

Agreement:

Align in stage 2 with the RAN3 indication that mode 1 is supported only for the intra-DU case.

Running CRs to 38.331

[R2-2311857](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311857_Introduction%20of%20NR%20sidelink%20U2U%20relay.docx) Introduction of NR sidelink U2U relay vivo draftCR Rel-18 38.331 17.6.0 NR\_SL\_relay\_enh-Core Revised

* Revised in R2-2311934

[R2-2311934](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311934_Introduction%20of%20NR%20sidelink%20U2U%20relay.docx) Introduction of NR sidelink U2U relay vivo CR Rel-18 38.331 17.6.0 4400 - B NR\_SL\_relay\_enh-Core

[R2-2311970](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311970%20Introduction%20of%20Rel-18%20Multi-path.docx) Introduction of Rel-18 Multi-path Huawei, HiSilicon CR Rel-18 38.331 17.6.0 4403 - B NR\_SL\_relay\_enh-Core

[R2-2312499](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312499_38.331_Rel-18_SL_relay_service_continuity.docx) Introduction of Rel-18 SL relay service continuity MediaTek Inc. CR Rel-18 38.331 17.6.0 4432 - B NR\_SL\_relay\_enh-Core

R2-2312689 Introduction of Rel-18 SL relay enhancement Huawei, HiSilicon CR Rel-18 38.331 17.6.0 4441 - B NR\_SL\_relay\_enh-Core Late

Other running CRs

[R2-2311881](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\38351_CR0027_(REL-18)_R2-2311881%20-%20Introduction%20of%20NR%20sidelink%20relay%20enhancements.docx) Introduction of NR SL Relay enhancement OPPO CR Rel-18 38.351 17.6.0 0027 - B NR\_SL\_relay\_enh-Core

[R2-2312029](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312029-Rel-18%20relay%20stage%202%20draft%20CR_v2.doc) Draft running CR 38.300 (update) LG Electronics Inc. draftCR Rel-18 38.300 17.6.0 B NR\_SL\_relay\_enh-Core

[R2-2312182](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\38323_CR0127_Rel-18_R2-2312182_FeatureIntroduction.docx) Introduction of Enhanced NR Sidelink Relay InterDigital CR Rel-18 38.323 17.5.0 0127 - B NR\_SL\_relay\_enh-Core

[R2-2312337](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312337%20Running%20CR%2038.321_v1.docx) Introduction of NR sidelink relay enhancements Apple (Rapporteur) CR Rel-18 38.321 17.6.0 1703 - B NR\_SL\_relay\_enh-Core

[R2-2312625](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312625.docx) Introduction of enhanced NR sidelink relay Xiaomi CR Rel-18 38.322 17.3.0 0054 - B NR\_SL\_relay\_enh-Core

[R2-2312929](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312929%20-%2038.304_CR0365_Introduction%20of%20Rel-18%20support%20for%20SL%20Relay%20Enhancements.docx) Introduction of Rel-18 SL Relay Enhancements Ericsson CR Rel-18 38.304 17.6.0 0365 - B NR\_SL\_relay\_enh-Core

[R2-2313527](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313527%2038.306%20CR1011%20for%20SL%20relay%20enhancement.docx) Introduction of SL relay enhancement Samsung CR Rel-18 38.306 17.6.0 1011 - B NR\_SL\_relay\_enh-Core

[R2-2313528](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313528%2038.331%20CR4500%20for%20UE%20capability_SL%20relay.docx) Introduction of SL relay enhancement Samsung CR Rel-18 38.331 17.6.0 4500 - B NR\_SL\_relay\_enh-Core

MAC open issues email discussion report

[R2-2312336](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312336%20summary%20MAC%20open%20issues%20V18_Rapp_summary.docx) Summary of [Post123bis][420][Relay] Rel-18 relay MAC identified open issues (Apple) Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

Easy Proposals:

Proposal 1: [13/13] Only 1 leg is allowed in the indirect path for MP duplication (i.e., any e2e traffic cannot be duplicated either in PC5 hop or Uu hop in the indirect path) .

Proposal 6: [14/14] Only PDCP duplication in MCG is considered for Rel-18 Multi-path.

Proposal 7: [14/14] MP remote UE reports UL BSR and SL BSR respectively by following legacy procedure. No spec impact foreseen.

Proposal 8: [14/14] Removes the editor note “FFS whether the SL-BSR also reports Uu path traffic buffer“ in clause 6.1.3.33.

Proposal 9: [11/12] only introduce a single new LCID (e.g., LCID 55) for SCCH carrying end-to-end SL-SRB0/1/2/3 messages in L2 U2U relay in MAC spec.

Discussion:

NEC think P7 indicates no enhancement at all for UL BSR or SL BSR, and they think the PC5-RLF case may require some enhancements to the SL-BSR cancellation mechanism. LG do not see a problem with the current mechanism.

LG wonder if P7 also includes buffer size calculation.

Agreements:

Only 1 leg is allowed in the indirect path for MP duplication (i.e., any e2e traffic cannot be duplicated either in PC5 hop or Uu hop in the indirect path) .

Only PDCP duplication in MCG is considered for Rel-18 Multi-path.

MP remote UE reports UL BSR and SL BSR respectively by following legacy procedure, including, e.g., buffer size calculation. No new interdependency is introduced between UL and SL BSRs.

Remove the editor note “FFS whether the SL-BSR also reports Uu path traffic buffer“ in clause 6.1.3.33.

Only introduce a single new LCID (e.g., LCID 55) for SCCH carrying end-to-end SL-SRB0/1/2/3 messages in L2 U2U relay in MAC spec.

Proposals to be discussed:

Proposal 2: [9/13] RAN2 to discuss whether >1 leg (i.e., CA) can be allowed for direct Uu path in PDCP duplication for MP.

Discussion:

Apple understand that either option is feasible.

Xiaomi think there should be no additional impact to support it.

Samsung are OK to leave the current support on Uu for multiple legs, with no spec impact.

OPPO wonder if we support more than one leg, if we would need to discuss handling of the duplication MAC CE. Nokia think if we restrict the one leg, we may need to discuss switching from CA configurations to MP: Does the UE do something or do we rely on gNB implementation?

Apple think there is a little spec impact, as already captured in the running CR. vivo have a similar understanding.

OPPO think we would need a UE capability.

ZTE think some further checking on potential impact would be needed. They think RAN3 have assumed only two legs.

Xiaomi think it can be supported only if there is no spec impact, including no UE capability.

vivo ask about the ZTE comment: What is the potential impact in RAN3? ZTE think RAN3 have assumptions on the number of RLC entities and there could be impact on CU-DU interaction.

LG think the RAN3 issue is not new and they can design based on our existing CA functionality; they see limited spec impact to us. Nokia have the same understanding, and they think companies can coordinate internally about any RAN3 issues.

Samsung agree with LG and Nokia; they see no big issues in RAN3.

Agreement:

More than one leg (i.e., CA configuration with 2 or 3 legs) on direct Uu path in MP is supported. Capability for this feature to be discussed under the general capability discussion.

Open issues documents

[R2-2311858](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311858_%20RRC%20Open%20issues%20for%20U2U%20relay.docx) RRC Open issues for U2U relay vivo other Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312095](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312095_U2U%20relay%20proposals%20for%20stage-3%20issues.docx) U2U relay proposals for stage-3 issues vivo discussion

[R2-2311880](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311880%20-%20SRAP%20open%20issues%20for%20R18%20sidelink%20relay.docx) SRAP open issues for R18 sidelink relay OPPO other Rel-18 NR\_SL\_relay\_enh-Core

[R2-2311971](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311971%20RRC%20open%20issues%20for%20Rel-18%20Multi-path%20(Outcome%20of%20%5bPost123bis%5d%5b417%5d%5bRelay%5d).docx) RRC open issues for Rel-18 Multi-path (Outcomes of [Post123bis][417][Relay]) Huawei, HiSilicon report Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312018](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312018-Stage%202%20Draft%20CR%20Open%20Issues.docx) Stage 2 Open Issues LG Electronics Inc. other Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312180](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312180%20summary%20PDCP%20open%20issues.docx) Summary of [Post123bis][415][Relay] Rel-18 relay PDCP Identified open issues (InterDigital) InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312181](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312181%20PDCP%20open%20issues%20for%20Rel-18%20Relay.docx) PDCP Open Issues for Rel-18 Relay InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312507](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312507%20Remaining%20open%20issues%20for%20service%20continuity.docx) Remaining open issues for service continuity MediaTek Inc. report Rel-18

* Open issues documents are noted

UE capabilities

[R2-2312695](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312695%20UE%20capability%20for%20sidelink%20relay%20enhancement.doc) UE capability for sidelink relay enhancement Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1. RAN2 to confirm to reuse relayUE-Operation-L2-r17 for indicating the support of L2 U2U relay UE operation and to reuse remoteUE-Operation-L2-r17 for indicating the support of L2 U2U remote UE operation.

Discussion:

Samsung think there is some potential for confusion between Rel-17 and Rel-18 capabilities.

Nokia think U2U and U2N capabilities are independent; they can imagine a UE that supports U2U but not U2N or vice versa. ZTE also prefer to have separate capability indications. Qualcomm agree.

Proposal 2. RAN2 to confirm to reuse L3 sidelink relay UE operation for UE which supports L3 U2U relay UE operation and to reuse L3 sidelink remote UE operation for UE which supports L3 U2U remote UE operation.

Proposal 3. RAN2 to confirm that the capability parameters of U2U relay UE operation and U2U remote UE operation are not signalled to peer UE.

Discussion:

Qualcomm think we should clarify that this is for AS capability.

Proposal 4. RAN2 to confirm that U2U relay discovery capability is common to L3 U2U relay and L2 U2U relay, discovery models A/B and integrated discovery, and remote UE and relay UE.

Discussion:

Qualcomm wonder about models A and B, because they may cause different behaviour in AS layer.

OPPO understand that in legacy operation, we have only capabilities for communication and discovery.

Qualcomm wonder if we need a capability for U2U relay discovery.

OPPO wonder about integrated discovery, which seems tied to the communication capability for the DCR message.

Xiaomi are concerned about a UE that does not support integrated discovery.

Proposal 5. RAN2 to discuss to reuse the band combination list defined for Rel-17 NR Relay discovery as an indication for the support of U2U relay discovery.

Proposal 6. RAN2 to confirm that existing UE capability parameters of Release 17 L2 U2N relaying can be reused and no additional UE capability parameter is needed for Release 18 L2 U2N relay service continuity.

Proposal 7. RAN2 to define new two UE capability parameters to indicate the support of multi-path relaying via L2 U2N relay and to indicate the support of multi-path relaying via non-3GPP connection.

Proposal 8. RAN2 to confirm that the two UE capability parameters on multi-path relaying are signalled only to gNB.

Proposal 9. RAN2 to confirm to reuse L3 sidelink relay UE operation and L3 sidelink remote UE operation for UE which support multi-path relaying via L3 U2N relay.

Proposal 10. RAN2 to discuss whether the support of RRC\_IDLE/RRC\_INACTIVE target Relay UE for indirect path addition/change in MP scenario 1 is based on UE capability.

Proposal 11. If MP relay indirect path addition/change to an IDLE/INACTIVE target Relay UE is a UE capability, RAN2 to discuss whether to reuse the capability flag of Rel-17 U2N relay i.e., remoteUE-PathSwitchToIdleInactiveRelay-r17.

Proposal 12. RAN2 to confirm that existing UE capability parameters of Release 17 sidelink DRX can be reused and no additional UE capability parameter is needed for Release 18 SL DRX.

Agreements:

Separate capabilities for U2U and U2N relay functionality (for both remote and relay UEs, for L2 and L3).

Capability parameters of U2U relay UE operation and U2U remote UE operation are not signalled to peer UE in the AS capability.

A single new U2U relay discovery AS capability is common to L3 U2U relay and L2 U2U relay, discovery models A/B and integrated discovery, and remote UE and relay UE.

Integrated discovery requires AS capabilities for both U2U relay discovery and communication. No separate AS capability for integrated discovery; a UE that supports U2U relay discovery and communication is required to support integrated discovery from AS layer perspective.

* [AT124][407][Relay] Relay UE capability (Samsung)

Scope: F2F offline to progress major issues on Rel-18 relay UE capability (including the capability for multiple Uu legs in MP).

Intended outcome: Report to CB session in R2-2313793

Schedule: Tuesday 2023-11-14 1100-1130 in Brk3

Deadline: Wednesday 2023-11-15 1900 CST

Withdrawn/Not available

[R2-2312017](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312017-Rel-18%20relay%20stage%202%20draft%20CR.doc) Draft running CR 38.300 LG Electronics Inc. draftCR Rel-18 38.300 17.6.0 B NR\_SL\_relay\_enh-Core

* Withdrawn

### 7.9.2 UE-to-UE relay

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

P1-P6, P13-P24, subject to time constraints

[R2-2311877](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311877%20-%20Discussion%20on%20control%20plane%20procedure%20of%20U2U%20Relay.docx) Discussion on control plane procedure of U2U relay OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1 Define separate threshold parameters for U2U Relay (re)selection on top of those for U2N Relay.

Proposal 2 Upon reception of NotificationMessageSidelink indicating PC5-RLF from the U2U relay UE, it is up to U2U Remote UE ProSe layer implementation to decide whether to keep or release the PC5 link with the relay UE.

Discussion:

Qualcomm want to confirm that it is also up to upper layer whether to keep the e2e connection.

vivo think the remote UE should keep the link with the relay UE if it is shared with another peer remote UE, so they wonder if this should be captured. Apple have a similar understanding.

CATT think the shared case can also be left to implementation.

OPPO agree with CATT; relay reselection is handled by upper layer, so if there is another e2e link, the upper layer can take that into account.

Qualcomm think we can capture releasing the relay context for this remote UE instead.

Nokia think this is an upper layer issue. NEC agree, and they wonder what the “relay context” mentioned by Qualcomm is.

[End-to-end case]

Huawei note that in legacy communication, link failure results in the AS layer releasing the PC5-RRC connection and notifying upper layers.

Qualcomm think it should be possible to keep the e2e connection and do relay reselection.

Ericsson think the e2e link should be released because there is no access to the peer remote UE.

OPPO think PC5-RRC should be released as in legacy.

vivo think if we follow legacy, we should release the e2e link and potentially establish a new one.

Lenovo also think we should release the e2e link since there is no service continuity at relay change. LG agree and see the use of a new relay as creating a new link.

Proposal 3 Allow triggering of U2U Relay selection if the SL-RSRP and SD-RSRP measurement of the peer NR sidelink U2U Remote UE are unavailable”.

Discussion:

CATT wonder how to identify this case; they agree that relay selection can be triggered, but they think this can be done by upper layers and no AS requirement is needed.

OPPO indicate that in the current RRC running CR, there are some AS conditions on triggering relay selection, and if we do not include this case it will prevent the UE from triggering relay selection.

LG wonder if this relates to the case where the source and target remote UE are already connected, and in such a case they understand that the PC5 degradation can already trigger selection.

Nokia have a similar understanding to CATT that upper layers should trigger it.

Qualcomm think we do not need to specify this case.

ZTE understand that if the UEs already have a direct link, the link degradation will trigger relay selection, but if there is no link and the source UE can detect the discovery message at a very low RSRP, the remote UE should be able to trigger relay selection. vivo agree with ZTE and think the current running CR will cover this case.

Xiaomi understand that the decision should be made in upper layers, not AS layers.

Apple and NEC have some doubt if the link is needed in this case. OPPO agree; they intended for the proposal to address only the case where the measurement result is unavailable, not to introduce a new AS condition.

Proposal 4 Relay UE does not forward AS link quality degradation of one hop to the peer remote UE of the other hop.

Discussion:

LG think it can be considered by the peer remote UE. Apple have a similar view.

Qualcomm agree with the proposal; we allow both remote UEs to perform reselection, and they think that addresses the issue.

Kyocera agree with LG. InterDigital also agree.

NEC agree with the proposal and think if the link quality is poor enough, the peer remote UE will trigger relay reselection. vivo agree.

ZTE agree with LG and others; they think it allows the peer remote UE to trigger relay reselection more efficiently.

Nokia agree with Qualcomm and NEC and consider the forwarding as an optimisation.

LG think the measurement value can be different as seen by the two UEs.

Lenovo agree with LG and ZTE.

Huawei think the forwarding is beneficial.

OPPO think it is kind of an optimisation, and they do not see why forwarding this information will trigger early reselection, since the peer UE is the one that can identify the link degradation and it can already trigger reselection expediently. To LG’s comment on the measurement value, they understand this is a different mechanism which we have not discussed.

Qualcomm indicate that upper layers already specify that the source will send multiple candidate relays to the peer remote UE.

Chair thinks this is not a killer issue and we do not have consensus to introduce it. CATT agree.

Proposal 5 RAN2 does not pursue defining direct link unreachability as an AS-layer trigger for indirect to direct switching.

Proposal 6 Besides the AS layer trigger for U2U relay reselection, RAN2 not pursue additional AS-layer spec impact for relay reselection, but just rely on the higher layer procedure defined by SA2.

Proposal 13 RAN2 confirm that network will not provide dedicated SLRB configurations (including configuration for both end-to-end layers and per-hop layers) to RRC CONNECTED UE for the U2U service.

Discussion:

Samsung are OK to follow the legacy, in which the gNB can be involved when the UE is in RRC\_CONNECTED.

ZTE understand it includes both L2 and L3, and for L3, the gNB is not aware of the potential service and can still use the legacy mechanism to configure the SLRB, so in that case they think dedicated configuration should be allowed. They agree that some additional work may be needed for L2, but they see it as worthwhile.

InterDigital think looking at the legacy operation, the network is involved with the links, and this proposal would change it.

Apple think SLRB configuration is general to many services and it is not clear if we need something special for U2U.

Xiaomi understand that if we follow the Rel-16 framework, the network can configure dedicated SLRB configurations, and they think we should follow this.

NEC tend to agree with Xiaomi and see a relation to ID reporting.

Qualcomm think involving the gNB requires an enhancement, because it would require reporting e2e QoS information to the gNB.

Apple think the point is that the current RRCReconfiguration does not have information specific to e2e, so there would be signalling impact to support dedicated configuration for U2U.

vivo think the remote UE can report the split QoS to the gNB and the gNB can configure the per-hop bearers, but e2e configurations are not needed.

Ericsson are OK with the proposal, and they wonder what the gNB would do to determine an appropriate configuration; they see that the UE can do this itself. They also want to avoid opening up complexities from partial-coverage cases.

OPPO think the hop-by-hop and e2e cases cannot be split since they have to be compatible with each other. Huawei agree with OPPO.

Samsung think the hop-by-hop configuration needs gNB involvement.

Huawei think the network needs to provide the RLC channels for mode 1, and they prefer the reverse of the proposal.

InterDigital do not see an issue with the network providing the configurations; the UE will still provide the QoS to the network in the SUI as usual, the network is aware that this is relaying because of authorization, and they see that legacy operation works.

Qualcomm note that it is the last meeting and doubt if it is feasible to add a new solution for this, so they would prefer to take the proposal and rely on SI/preconfiguration. LG have the same understanding and think we need to prioritize completion.

vivo think if we do not allow dedicated configuration for hop-by-hop, we diverge from legacy.

InterDigital wonder about UE behaviour if it changes between direct link and U2U while in RRC\_CONNECTED. Qualcomm understand there is no service continuity in such cases.

LG think we could discuss it in maintenance.

Huawei wonder how we will make sure that the network knows the UE is performing U2U communication; they see that enhancements to the SUI will be needed.

OPPO see some spec impact in either case, and if we rely on dedicated configuration, they see impact to the RRCReconfiguration; however, they see a majority of companies wanting to maintain the legacy operation.

Ericsson would like to understand the spec impact: They anticipate that the UE would report in SUI the destination, and the network would configure the SLRBs as legacy, with no major spec impact. Qualcomm understand that the enhancement is reporting of both e2e and hop-by-hop QoS, followed by the network providing e2e and hop-by-hop configuration. NEC do not see this as an enhancement and they think the ASN.1 impact is minimal.

Huawei understand in legacy, the remote UE can report two sets of QoS parameters, one per destination ID, but now it needs to report them associated with each other so the network can provide a consistent configuration.

Ericsson wonder about differentiated handling in the network; what is the network really expected to do differently?

Proposal 14 For OOC/RRC\_IDLE/RRC\_INACTIVE/CONNECTED L2 U2U Remote UE, PDCP/SDAP setting for E2E SLRB is obtained via Pre-configuration/SIB by only referring to end-to-end QoS as in legacy.

Proposal 15 For OOC/ RRC\_IDLE/ RRC\_INACTIVE/CONNECTED L2 U2U Remote UE, SRAP/RLC/MAC setting for E2E SLRB is obtained via Pre-configuration/SIB by only referring to end-to-end QoS as in legacy.

Discussion:

OPPO understand that the difference between e2e and hop-by-hop is PDB, so the question here is really whether we need to consider the split PDB to configure the lower layers.

Qualcomm think the PDB is useful for the reTx number and polling timer. Xiaomi also think PDB should be considered for the hop-by-hop configurations.

Samsung agree with OPPO and think the PDB will not impact the lower layer parameters. They think reTx number is more a function of reliability.

OPPO wonder if companies wanting to use per-hop QoS want to introduce additional configurations. Qualcomm think we can reuse the existing configuration signalling for SI, and they continue to think that PDB can impact the reTx number. OPPO thought we would need an additional configuration in SI to take into account both QoS settings.

Proposal 16 The Tx Remote UE informs the flow-to-SLRB mapping (i.e., SDAP configuration) to the relay UE via PC5-RRC.

Proposal 17 The Tx Remote UE informs the SLRB configuration index (i.e., slrb-PC5-ConfigIndex) to the relay UE via PC5-RRC.

Discussion:

Apple wonder if P16 is really necessary since the relay UE will not see the QoS flow.

Xiaomi support P16 and think P17 is already existing behaviour.

Proposal 18 RAN2 to confirm in L2 U2U Relay, network implementation would ensure the SDAP (pre-)configuration of cell/coverage-boundary would be always compatible.

Proposal 19 For figure 16.12.x-1 in stage-2 running CR, RRCReconfigurationSidelink in step 8a/b cannot be merged in the per-hop PC5-RRC connection establishment procedure, the Editor’s NOTE can be removed directly.

Proposal 20 RAN2 to discuss capture “Communication resource pool is used for the DCR/DCA message with integrated-discovery.” in section 5.8.13.3 NR sidelink discovery transmission by additional restriction on integrated DCR cannot use the discovery dedicated pool.

Proposal 21 Remove “determine the submission of an xxx message to xxx” in clauses 5.8.9.1.2 and 5.8.9.1.9 for the transmission of RRCRconfigurationSidelink/ RRCRconfigurationSidelinkComplete.

Proposal 22 Introduce indication(s) for the network capability on U2U service in SIB message.

Proposal 23 RAN2 discuss how for L2/L3 U2U relay and remote UE to report communication/discovery traffic via SUI to network.

Proposal 24 In L2 U2U Relay, U2U Remote UE does not report E2E PC5-RLF with the peer remote UE to network.

Agreements:

Define separate threshold parameters for U2U Relay (re)selection on top of those for U2N Relay.

Upon reception of NotificationMessageSidelink indicating PC5-RLF from the U2U relay UE, it is up to U2U Remote UE ProSe layer to decide whether to keep or release the PC5 link with the relay UE.

Upon reception of NotificationMessageSidelink indicating PC5-RLF from the U2U relay UE, the U2U Remote UE AS layer releases the PC5-RRC connection with the peer U2U Remote UE and notifies upper layers.

Relay UE does not forward AS link quality degradation of one hop to the peer remote UE of the other hop.

For OOC/RRC\_IDLE/RRC\_INACTIVE L2 U2U Remote UE, PDCP/SDAP setting for E2E SLRB is obtained via Pre-configuration/SIB by only referring to end-to-end QoS as in legacy.

The Tx Remote UE informs the flow-to-SLRB mapping (i.e., SDAP configuration) to the relay UE via PC5-RRC.

The Tx Remote UE informs the SLRB configuration index (i.e., slrb-PC5-ConfigIndex) to the relay UE via PC5-RRC.

* [AT124][408][Relay] Dedicated configuration for U2U relay SLRBs (OPPO/Qualcomm)

Scope: F2F offline to:

* evaluate the spec impact of supporting/excluding dedicated configuration for U2U relay SLRBs for RRC\_CONNECTED remote UEs, and converge on a solution if possible based on the level of spec impact.
* evaluate the use of e2e/hop-by-hop QoS and SLRB configurations for idle/inactive/OOC remote UEs

Intended outcome: Report to CB session

Schedule: Wednesday 2023-11-15 1430-1500 in Brk3 (rapporteur to confirm time with secretary)

Deadline: Thursday 2023-11-16 1000 CST

* [AT124][409][Relay] QoS aspects for U2U (vivo)

Scope: F2F offline to discuss additional QoS topics (P6-P14 of R2-2312094) as time permits.

Intended outcome: Report to CB session

Schedule: Wednesday 2023-11-15 1500-1530 in Brk3 (rapporteur to confirm time with secretary)

Deadline: Thursday 2023-11-16 1000 CST

P5-P10

[R2-2312416](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312416%20Disussion%20on%20U2U%20Relay.docx) Discussion on U2U Relay CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 5: BEARER ID is set to the LSB 5 bits of PC5 configuration index.

Discussion:

Apple agree the configuration index can be used, but they think it will be the same number in the LSBs and the configuration index itself. They understand that the range of the index is actually 0..31 even though the field is wider.

vivo note that the index is 1..32, not 0..31, so it should be either the 5 LSBs or (configuration index - 1).

Proposal 6: Confirm the working assumption that Carry L2 ID and Local ID in RRCReconfigurationSidelink message with the assumption that the association between User Info and L2 ID is done at ProSe layer.

Proposal 7: RAN2 revise the last meeting’s agreement for PC5-RLF indication as below:

RAN2 confirm the following agreement applies to both source L2 remote UE and L2 target remote UE.

- When the remote UE receives PC5-RLF indication from the U2U relay UE, it would inform upper layers and rely on upper layers to trigger relay (re)selection (or not).

Proposal 8: RAN2 confirm the following agreement applies to both source L3 remote UE and L3 target remote UE.

- When the remote UE receives PC5-RLF indication from the U2U relay UE, it would inform upper layers and rely on upper layers to trigger relay reselection (or not).

Discussion:

Qualcomm think we do not need to do anything for the L3 case because the relay UE will release the connection and the peer UE will trigger relay reselection.

Proposal 9: In case that there is no SL-RSRP/SD-RSRP measurement of the peer remote UE available, the remote UE can be triggered to perform relay selection which is left to UE implementation.

Proposal 10: The U2N relay selection parameter is not reused to U2U relay selection.

Agreements:

Confirm the working assumption to carry L2 ID and Local ID in RRCReconfigurationSidelink message with the assumption that the association between User Info and L2 ID is done at ProSe layer. If SA2 come back with a different conclusion, it can be handled in maintenance.

The following previous agreement does not apply to the L3 case (there is no PC5-RLF indication in this case):

- When the remote UE receives PC5-RLF indication from the U2U relay UE, it would inform upper layers and rely on upper layers to trigger relay reselection (or not).

BEARER ID is set to the 5 LSBs of PC5 configuration index. Range definition between 4..31 vs. 5..32 to be checked in CR implementation.

P6-P14 if time (potentially offline)

[R2-2312094](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312094_Remaining%20issues%20on%20L2%20U2U%20relay.docx) Remaining issues on L2 U2U relay vivo discussion

Proposal 6: Whole Split QoS Profiles, e.g. in term of SL-QoS-Info-r16, are sent to the source Remote UE from the Relay UE. And it is left to Relay UE implementation on how to set the value of each QoS parameter in the Split QoS Profiles.

Proposal 7: The split QoS value doesn’t need to be delivered to the peer L2 U2U Remote UE, i.e. choosing the above Option-1.

Proposal 8: RRCReconfigurationSidelink and RRCReconfigurationCompleteSidelink are reused to deliver E2E QoS profile and split QoS profile between source L2 U2U remote UE and relay UE respectively.

Proposal 9: For an IDLE/INACTIVE/OOC source remote UE, E2E QoS profile should be used to decide E2E SLRB configuration and split QoS profile for RLC channel configuration of the first hop based on the configuration from SIB or pre-configuration. And it is up to source remote UE implementation to aggregate different E2E SLRBs with same/similar RLC channel configuration into one RLC channel.

Proposal 10: For a CONNECTED source remote UE, split QoS profile of the first hop should be reported to its serving gNB. Then legacy SLRB configuration & RLC bearer configuration of this hop (i.e., SL-RadioBearerConfig and SL-RLC-BearerConfig) are configured to source remote UE by gNB.

Proposal 11: For a CONNECTED source remote UE, it’s up to source UE implementation to derive each E2E SLRB with different target remote UE(s) based on configured SL RB configuration & RLC bearer configuration.

Proposal 12: For an IDLE/INACTIVE/OOC relay UE, split QoS profile and potential E2E SLRB configuration should be used to decide RLC channel configuration of the second hop from SIB or pre-configuration. And it is up to relay UE implementation to aggregate different E2E SLRBs with same/similar RLC channel configuration into one RLC channel.

Proposal 13: For a CONNECTED relay UE, split QoS profile of the second hop should be reported to its serving gNB. Then legacy RLC bearer configuration and SLRB configuration are configured to relay UE by gNB.

Proposal 14: For a CONNECTED relay UE, it’s up to relay UE implementation to derive mapping relationship between E2E SLRB and RLC channel based on configured SLRB configuration & RLC bearer configuration from gNB and E2E SLRB configuration from source remote UE.

[R2-2311878](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311878%20-%20Discussion%20on%20user%20plane%20procedure%20of%20U2U%20Relay.docx) Discussion on user plane procedure of U2U relay OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2311990](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311990+Remaining%20issues%20for%20L2%20U2U%20relay.doc) Remaining issues for L2 U2U relay China Telecom discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312007](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312007%20Discussions%20on%20U2U%20relay.doc) Discussion on U2U relay Fujitsu discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312173](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312173%20(R18%20SL%20Relay%20WI_AI792%20U2U%20Relays_OpenIssues).doc) Open Issues on UE-to-UE Relays InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312220](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312220%20Discussion%20on%20L2%20ID%20reporting%20of%20U2U%20relay.docx) Discussion on L2 ID reporting of U2U relay NEC discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312222](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312222-U2U-multi.docx) U2U relaying considering multi-hop Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312338](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312338%20Discussion%20on%20U2U%20relay%20issues.doc) Discussion on remaining issues on UE-to-UE Relay Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312426](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312426_Discussion%20on%20the%20gNB%20involvement%20in%20U2U%20relay.doc) Discussion on the gNB involvement in U2U relay ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312427](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312427_Discussion%20on%20remaining%20issues%20on%20U2U%20relay.doc) Discussion on remaining issues on U2U relay ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312434](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312434%20Discussion%20on%20remaining%20issues%20for%20U2U%20relay.docx) Discussion on remaining issues for U2U relay Xiaomi discussion

[R2-2312452](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312452%20Discussion%20on%20L2%20UE-to-UE%20relay%20v1.0.docx) Discussion on L2 UE-to-UE relay Lenovo discussion Rel-18

[R2-2312496](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312496-U2U.docx) Remaining issues for U2U relay Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312535](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312535-Our%20views%20about%20open%20issues%20for%20U2U%20relay.docx) Our views about open issues for U2U relay LG Electronics Inc. discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312567](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312567%20Remaining%20issues%20on%20UE-to-UE%20relay.doc) Remaining issues on UE-to-UE relay Spreadtrum Communications discussion Rel-18

[R2-2312615](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312615%20U2U%20reselection.docx) U2U relay (re)selection issues Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312616](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312616%20U2U%20QoS.docx) E2E RB configuration and QoS split for U2U Relays Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312687](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312687_U2U%20relay%20CR%20update%20for%20stage-3%20issues.docx) U2U relay CR update for stage-3 issues vivo draftCR Rel-18 38.331 17.6.0 B NR\_SL\_relay\_enh-Core R2-2311857

[R2-2312692](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312692%20Discussion%20on%20UE-to-UE%20relay.doc) Discussion on UE-to-UE relay Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312696](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312696%20Control%20plane%20issues%20for%20L2%20U2U%20relaying.doc) Control plane issues for L2 U2U relaying Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312697](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312697%20Discussion%20on%20remaining%20issues%20of%20U2U%20relay.docx) Discussion on remaining issues of U2U relay CMCC discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312842](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312842.doc) UE-to-UE relay (re)selection Sony discussion Rel-18 NR\_SL\_relay\_enh

[R2-2312868](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312868-%20Open%20issues%20on%20U2U%20Relay.docx) Open issues on U2U Relay Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2312882](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312882_U2U_relay.docx) Considerations for U2U L2 relay operations Kyocera discussion

[R2-2312924](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312924_Discussion_on_Relay_reselection_Discovery.docx) Discussion on Relay (re)selection and Discovery Ericsson discussion Rel-18

[R2-2312925](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312925_Control_Plane_Procedures_for_L2_U2U_relays.docx) Control Plane Procedures for Layer 2 UE-to-UE Relays Ericsson discussion Rel-18

[R2-2313192](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313192%20Remaining%20issues%20on%20AS%20layer%20configuration%20for%20L2%20U2U%20Relay.docx) Remaining issues on AS layer configuration for L2 U2U Relay ASUSTeK discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2313193](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313193%20Remaining%20issue%20on%20PC5%20radio%20link%20failure.docx) Remaining issue on PC5 radio link failure ASUSTeK discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2313232](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313232%20U2U%20triggers%20and%20thresholds.docx) Discussion on U2U relay (re)selection triggers and thresholds Beijing Xiaomi Mobile Software discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2313509](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313509%20SRAP%20design%20for%20U2U%20sidelink%20relay%20v2.docx) SRAP design for U2U Sidelink Relay: remaining issues Samsung R&D Institute UK discussion

[R2-2313542](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313542_SL%20Relay_U2U_OpenIssues_FhG.docx) Discussion on (re-)selection criteria for U2U relaying Fraunhofer IIS, Fraunhofer HHI discussion Rel-18 NR\_SL\_relay\_enh, NR\_SL\_relay\_enh-Core

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

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

[R2-2312617](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312617%20Remaining%20issues%20on%20service%20continuity.docx) SL Relay service continuity consideration Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1: RAN2 to agree to use Figure 1 and 2 as the baseline for inter-gNB path switching to indirect path.

Proposal 2: RAN2 to agree to allow early RRCReconfiguration message to the remote UE for path switching and to use the target relay UE to assist the remote UE’s inter-gNB path switching.

Proposal 3: RAN2 to discuss the enhancement on relay UE’s RRC connection establishment or resume for the relay UE in RRC\_IDLE/INACTIVE.

[R2-2312926](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312926_Discussion_on_Inter_gNB_Service_Continuity.docx) Discussion on Inter-gNB Service Continuity Ericsson discussion Rel-18

Proposal 1 For inter-gNB d2i and i2i scenarios, the following should be agreed about the paging-based mechanism to transit the target U2N relay UE in IDLE/INACTIVE state to the CONNECTED state:

a. In RRC\_INACTIVE state, RAN2 to confirm that it is up to gNB implementation to page the target U2N relay UE before the path switch command is sent to the remote UE, if the gNB can retrieve the target relay UEs context.

b. In RRC\_IDLE state, RAN2 to not pursue the enhancements required for the paging solution.

Proposal 2 Consider mandatory reporting of the source L2 ID i.e., sl-SourceIdentityRelayUE in the SidelinkUEInformationNR message.

[R2-2311872](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311872.docx) Discussion on service continuity Xiaomi discussion

[R2-2312417](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312417%20Further%20Consideration%20on%20Service%20Continuity%20Enhancements.docx) Further Consideration on Service Continuity Enhancements CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312428](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312428_Remaining%20issues%20on%20service%20continuity.doc) Remaining issues on service continuity for SL relay ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312497](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312497-SLR_enh_core%20Remaining%20issues%20for%20i2i%20path%20switching.doc) Remaining issues for i2i path switching Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312843](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312843.doc) Service continuity enhancements for UE sidelink relay Sony discussion Rel-18 NR\_SL\_relay\_enh

[R2-2313033](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313033.docx) Discussion on additional aspects for service continuity Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

### 7.9.4 Multi-path relaying

Mechanisms to support multi-path scenarios where a UE is connected to the same gNB using one direct path and one indirect path via 1) Layer-2 UE-to-Network relay, or 2) via another UE (where the UE-UE inter-connection is assumed to be ideal).

[R2-2313309](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313309%20Discussion%20on%20issues%20for%20Multi-path%20relaying.doc) Discussion on remaining issues for multi-path relaying LG Electronics Inc. discussion Rel-18 NR\_SL\_relay\_enh-Core

Discussed jointly (relay UE entering RRC\_CONNECTED)

[R2-2312870](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312870-Discussion%20on%20trigger%20Relay%20UE%20entering%20CONNECTED%20state-r1.docx) Issue#2-4-Discussion on trigger MP Relay UE entering CONNECTED state Qualcomm Incorporated, Huawei, HiSilicon, CATT, CMCC discussion NR\_SL\_relay\_enh-Core

[R2-2313213](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313213-%20Discussion%20on%20the%20release%20version%20indication%20of%20MP%20Relay%20UE.docx) Discussion on the release version indication of MP Relay UE OPPO, Interdigital, NEC, vivo, ZTE, Ericsson discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312175](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312175%20(R18%20SL%20Relay%20WI_AI794%20MultiPath_PDCP_OpenIssues).doc) Open Issues on PDCP for Multipath InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312429](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312429%20Remaining%20issues%20on%20the%20support%20of%20multi-path%20relaying.docx) Remaining issues on the support of multi-path relaying ZTE, Sanechips discussion Rel-18 NR\_SL\_relay\_enh-Core

P6 and P8 (relay handover and WA on T304)

[R2-2312339](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312339%20Discussion%20on%20remaining%20issues%20on%20Multi-path.doc) Discussion on remaining issues for Multi-path Relay Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2311873](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311873.docx) Discussion on multi-path Xiaomi discussion

[R2-2311879](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311879%20-%20Discussion%20on%20control%20plane%20procedure%20of%20multi-path%20Relay.docx) Discussion on control plane procedure of multi-path relay OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2311953](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311953_Discussion%20on%20CP%20Issues%20of%20Multi-path%20Relaying.docx) Discussion on CP Issues of Multi-path relay NEC discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2311954](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311954_Discussion%20on%20UP%20Issues%20of%20Multi-path%20Relaying.docx) Discussion on UP Issues of Multi-path relay NEC discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2311991](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311991%20Discussion%20on%20control%20plane%20remaining%20issues%20of%20multi-path%20relaying.docx) Discussion on control plane remaining issues of multi-path relaying China Telecom discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2311992](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2311992%20Discussion%20on%20user%20plane%20remaining%20issues%20of%20multi-path%20relaying.docx) Discussion on user plane remaining issues of multi-path relaying China Telecom discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312008](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312008%20Discussions%20on%20multi-path.docx) Discussions on multi-path Fujitsu discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312096](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312096_Remaining%20issues%20on%20Multi-path%20relay.docx) Remaining issues on Multi-path relay vivo discussion

[R2-2312174](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312174%20(R18%20SL%20Relay%20WI_AI794%20MultipathRemainingIssues).doc) Remaining RRC Issues for Multipath InterDigital discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312176](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312176%20(R18%20SL%20Relay%20WI_AI794%20DirectPathRelease.doc) Specifying the Direct Path Release in Multipath InterDigital, Apple, Ericsson, Xiaomi discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312418](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312418_Open%20Issues%20Specific%20for%20MP%20Scenario%201%20or%20Scenario%202.docx) Open Issues Specific for MP Scenario 1 or Scenario 2 CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312419](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312419_Open%20Issues%20Common%20for%20MP%20Scenario%201%20and%20Scenario%202.docx) Open Issues Common for MP Scenario 1 and Scenario 2 CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312453](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312453%20Failure%20handling%20in%20indirect%20path%20addition%20and%20change%20v1.0.docx) Failure handling in indirect path addition and change Lenovo discussion Rel-18

[R2-2312454](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312454%20Open%20Issue%232-1%20related%20to%20direct%20path%20additionchangerelease%20v1.0.docx) Open Issue#2-1 related to direct path addition/change/release Lenovo discussion Rel-18

[R2-2312498](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312498-MP.docx) Remaining issues for multi-path relay Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312540](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312540%20Remaining%20points%20in%20Multipath%20relaying.docx) Remaining points in Multipath relaying Lenovo discussion NR\_SL\_relay\_enh-Core

[R2-2312568](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312568%20Remaining%20issues%20on%20multi-path%20relaying.docx) Remaining issues on multi-path relaying Spreadtrum Communications discussion Rel-18

[R2-2312690](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312690%20CP%20remaining%20issues%20on%20multi-path%20operation.docx) CP remaining issues on multi-path operation Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312691](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312691%20UP%20remaining%20issues%20on%20multi-path%20operation.docx) UP remaining issues on multi-path operation Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312698](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312698%20Remaining%20issues%20on%20multi-path.docx) Remaining issues on multi-path CMCC discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312699](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312699%20Discussion%20on%20indirect%20path%20addition%20procedure%20for%20MP.docx) Discussion on indirect path addition procedure for MP CMCC discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312734](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312734_SLRelay_CP_v1.0.docx) Discussion on remaining CP issues on multiple path for sidelink relay Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312735](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312735_SLRelay_UP_v1.0.docx) Discussion on remaining UP issues on multiple path for sidelink relay Samsung discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2312844](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312844.doc) Multi-path relaying discussion Sony discussion Rel-18 NR\_SL\_relay\_enh

[R2-2312869](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312869-open%20issues%20for%20MP%20relay.docx) Open issues on multi-path relay Qualcomm Incorporated discussion NR\_SL\_relay\_enh-Core

[R2-2312883](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312883_multipath_relay.docx) Considerations for multipath relay operations for Scenario 1 Kyocera discussion

[R2-2312927](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312927_Discussion_on_multipath%20relays.docx) Discussion on Multipath Relays Ericsson discussion Rel-18

[R2-2313126](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313126%20Remaining%20isues%20on%20multipath%20relay.docx) Remaining issues for MP relay Nokia, Nokia Shanghai Bell discussion NR\_redcap\_enh-Core

### 7.9.5 DRX

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

## 7.24 TEI18

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

Time budget: 1 TU

### 7.24.0 In Principle Agreed CRs

[R2-2312107](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312107.docx) Positioning restrictions for UE-to-network remote UEs [PosL2RemoteUE] MediaTek Inc., CATT, Huawei, HiSilicon, Qualcomm Incorporated, Xiaomi, Intel Corporation, vivo, Ericsson CR Rel-18 38.305 17.6.0 0134 2 C TEI18 R2-2305852

[R2-2312108](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312108.docx) Capabilities of L2 UE-to-network relay UEs for positioning [PosL2RemoteUE] MediaTek Inc., CATT, Huawei, HiSilicon, Qualcomm Incorporated, Xiaomi, Intel Corporation, vivo, Ericsson CR Rel-18 38.306 17.6.0 0907 3 C TEI18 R2-2306828

[R2-2312109](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312109.docx) Support positioning of L2 UE-to-network remote UEs [PosL2RemoteUE] MediaTek Inc., CATT, Huawei, HiSilicon, Qualcomm Incorporated, Xiaomi, Intel Corporation, vivo, Ericsson, Samsung CR Rel-18 37.355 17.6.0 0444 2 C TEI18 R2-2305854

[R2-2312110](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312110.docx) Downlink positioning support and posSIB request for L2 UE-to-network remote UE [PosL2RemoteUE] MediaTek Inc., CATT, Huawei, HiSilicon, Qualcomm Incorporated, Xiaomi, Intel Corporation, vivo, Ericsson, Samsung, ZTE CR Rel-18 38.331 17.6.0 4066 5 C TEI18 R2-2306839

[R2-2312808](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312808_(LPP%20CR%20on%20local%20coordinates).docx) Support of Local Cartesian Coordinates in LPP [PosLocalCoords] Qualcomm Incorporated CR Rel-18 37.355 17.6.0 0447 1 C TEI18 R2-2305891

[R2-2313046](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313046_38331.docx) SSR Satellite PCV Residuals [Rel18PCV] Swift Navigation, Ericsson CR Rel-18 38.331 17.6.0 4296 2 C TEI18 R2-2309324

[R2-2313061](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313061_37355.docx) SSR Satellite PCV Residuals [Rel18PCV] Swift Navigation, Ericsson CR Rel-18 37.355 17.6.0 0465 2 C TEI18 R2-2309322

[R2-2313062](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313062_36331.docx) SSR Satellite PCV Residuals [Rel18PCV] Swift Navigation, Ericsson CR Rel-18 36.331 17.6.0 4955 2 C TEI18 R2-2309323

[R2-2313063](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313063_36305.docx) SSR Satellite PCV Residuals [Rel18PCV] Swift Navigation, Ericsson CR Rel-18 36.305 17.3.0 0118 2 C TEI18 R2-2309320

[R2-2313065](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313065_38.305.docx) SSR Satellite PCV Residuals [Rel18PCV] Swift Navigation, Ericsson CR Rel-18 38.305 17.6.0 0140 2 C TEI18 R2-2309321

[R2-2313583](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313583.docx) GNSS LOS/NLOS posSIB broadcast assistance information [GNSS LOS/NLOS] Vodafone, Spirent, Ericsson, Telecom Italia, Samsung CR Rel-18 36.331 17.6.0 4931 3 B TEI18 R2-2306786

[R2-2313584](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313584.docx) GNSS LOS/NLOS posSIB broadcast assistance information [GNSS LOS/NLOS] Vodafone, Spirent, Ericsson, Telecom Italia, Samsung CR Rel-18 38.331 17.6.0 4109 3 B TEI18 R2-2306787

[R2-2313585](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313585.docx) GNSS LOS/NLOS assistance information [GNSS LOS/NLOS] Vodafone, Spirent, Ericsson, Telecom Italia, Samsung CR Rel-18 37.355 17.6.0 0446 3 B TEI18 R2-2306788

=> Revised in R2-2313591 [AI 7.24.2]

### 7.24.1 TEI proposals by Other Groups

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

Including outcome of [AT123bis][018][CG-SDT TEI18] LS to RAN1 (Ericsson)

[R2-2312446](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312446%20Introduction%20of%201-symbol%20PRS%20in%2037.355%5b1symbol_PRS%5d.docx) Introduction of 1-symbol PRS in 37.355[1symbol\_PRS] ZTE Corporation CR Rel-18 37.355 17.6.0 0437 4 B TEI18 R2-2308141

[R2-2312447](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312447%20Introduction%20of%201-symbol%20PRS%20in%2038.331%5b1symbol_PRS%5d.docx) Introduction of 1-symbol PRS in 38.331[1symbol\_PRS] ZTE Corporation CR Rel-18 38.331 17.6.0 4014 4 B TEI18 R2-2308140

### 7.24.2 TEI proposals by RAN2

Items initiated in RAN2 for NR and LTE.

Tdoc limitation: 1 tdoc, limitation only applicable for non-previously-agreed-to-be-considered TEI proposals.   
proposals that has been agreed or agreed to be considered are not limited by the tdoc limitation.

Including outcome of [Post123bis][403][POS] BT AoA/AoD (Ericsson)

PosL2RemoteUE

[R2-2312129](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312129%20Further%20corrections%20on%20Positioning%20for%20remote%20UEs.doc) Further corrections to RRC CR on Positioning for remote UEs Lenovo discussion Rel-18 TEI18

[R2-2312444](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312444%20Clarification%20on%20remote%20UE%20behaviour%20when%20receiving%20SFN-DFN%20offset%20for%20positioning.docx) Clarification on remote UE behaviour when receiving SFN-DFN offset for positioning ZTE Corporation CR Rel-18 38.331 17.6.0 4431 - B TEI18

[R2-2312936](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312936%20posSIB.docx) Forwarding on posSIBs relaying to remote UE [PosL2RemoteUE] Ericsson CR Rel-18 38.305 17.6.0 0151 - B TEI18

MUSIM paging cause forwarding

[R2-2312195](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312195_38306_Rel_18_CR0978_MUSIM%20paging%20cause%20forwarding.docx) MUSIM paging cause forwarding vivo, Samsung CR Rel-18 38.306 17.6.0 0978 - B LTE\_NR\_MUSIM-Core, NR\_SL\_relay-Core

[R2-2312196](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312196_38331_Rel_18_CR4414_MUSIM%20paging%20cause%20forwarding.docx) MUSIM paging cause forwarding vivo, Samsung CR Rel-18 38.331 17.6.0 4414 - B LTE\_NR\_MUSIM-Core, NR\_SL\_relay-Core

BT-AoA-AoD

[R2-2312943](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312943%20BLESummary.docx) [Post123bis][403][POS] BT AoA/AoD (Ericsson) Ericsson report Rel-18

[R2-2312944](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312944%20stage2LTE.docx) Bluetooth AoA/AoD support [BT-AoA-AoD] Ericsson CR Rel-18 36.305 17.3.0 0119 - B TEI18

[R2-2312945](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312945%20stage2NR.docx) Bluetooth AoA/AoD support [BT-AoA-AoD] Ericsson CR Rel-18 38.305 17.6.0 0153 - B TEI18

[R2-2312946](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2312946%20BLELPP.docx) Bluetooth AoA/AoD support [BT-AoA-AoD] Ericsson CR Rel-18 37.355 17.6.0 0480 - B TEI18

GNSS LoS/NLoS revision of AIP CR

[R2-2313591](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202311%20-%20RAN2_124,%20Chicago\Extracts\R2-2313591%2037355%20CR%20rev4%20GNSS%20LOS-NLOS%20editorial.docx) GNSS LOS/NLOS assistance information [GNSS LOS/NLOS] Vodafone, Spirent, Ericsson, Telecom Italia, Samsung CR Rel-18 37.355 17.6.0 0446 4 B TEI18 R2-2313585

## 7.25 R18 Other

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

Impacts from Other RAN WGs and TSGs that has no separate TU budget in RAN2. LS ins for Rel-18 specific WIs/SIs that has no RAN WI.

Time budget: 2 TU

Tdoc Limitation: -

### 7.25.3 Other

RAN3, SA2, SA3, CT1 led items and others, e.g. eNPN, Slicing.

[R2-2312942](C:\\Users\\mtk16923\\Documents\\3GPP Meetings\\202311 - RAN2_124, Chicago\\Extracts\\R2-2312942 LCSUPP.docx" \o "C:\Users\mtk16923\Documents\3GPP Meetings\202311 - RAN2_124, Chicago\Extracts\R2-2312942 LCSUPP.docx) Introduction of LCS User Plane Ericsson CR Rel-18 38.305 17.6.0 0152 - B TEI18