3GPP TSG-RAN WG2 Meeting #126 R2-240xxx

Fukuoka, Japan, 20-26 May 2024

Source: Session Chair (MediaTek)

Title: Report from session on positioning and sidelink relay

# At-meeting email/offline discussions

This subclause is not an agenda item. It documents the email and offline discussions scheduled during the meeting week. It will be moved to an Annex in the final version of the report.

* [AT126][401][POS] Rel-15 LTE positioning CR (Huawei)

 Scope: Check the CR in R2-2404749 (and mirrors in R2-2404750 / R2-2404751 / R2-2404752).

 Intended outcome: Agreed CRs (without CB if possible)

 Deadline: Thursday 2024-05-23 1000 JST

* [AT126][402][POS] Slot offset for positioning SRS configuration (Huawei)

 Scope: Update the CR in R2-2404753 (and its mirror CRs) to introduce the change in a field description for the field slotOffset-r16.

 Intended outcome: Agreeable CR (with CB) in R2-2405867 (Rel-16), mirror CRs in R2-2405868 (Rel-17) and R2-2405869 (Rel-18)

 Deadline: Thursday 2024-05-23 1000 JST

* [AT126][403][POS] Tx UE configuration as assistance data or location information (vivo)

 Scope: F2F offline to further discuss P1 of R2-2404304 and attempt to converge.

 Intended outcome: Report to CB session in R2-2405870 and approvable LS to RAN1 (to include responses to other SLPP issues where RAN1 need to be notified) in R2-2405871

 Schedule: Tuesday 2024-05-21 0930-1030 in Brk3

 Deadline: Thursday 2024-05-23 1000 JST

* [AT126][404][POS] LS to RAN4 on SL positioning measurements (Huawei)

 Scope: Revise the draft LS in R2-2404769 to include our agreement on AoA/ZoA measurements.

 Intended outcome: Approved LS (without CB if possible) in R2-2405872

 Deadline: Thursday 2024-05-23 1000 JST

* [AT126][405][POS] SLPP error causes (Lenovo)

 Scope: F2F offline to converge on a list of SLPP error causes. If possible, determine whether to capture them in a common or method-specific way.

 Intended outcome: Report to CB session in R2-2405873

 Schedule: Wednesday 2024-05-22 0930-1030 in Brk3

 Deadline: Thursday 2024-05-23 1000 JST

* [AT126][406][POS] Remaining SLPP issues (Intel)

 Scope: F2F offline to discuss remaining SLPP issues with ASN.1 impact.

 Intended outcome: Report to CB session in R2-2405874

 Schedule: Wednesday 2024-05-22 0900-0930 in Brk3

 Deadline: Thursday 2024-05-23 1000 JST

* [AT126][407][POS] Rel-18 SRSp enhancement fields in INMs (Huawei)

 Scope: Monitor RAN3 progress related to P5 of R2-2404764 and converge company views where possible.

 Intended outcome: Report to CB session in R2-2405875

 Deadline: Thursday 2024-05-23 1000 JST

* [AT126][408][Relay] Relay RRC proposals with ASN.1 impact (Huawei)

 Scope: F2F offline to check ASN.1 proposals on Rel-18 relay and determine if changes are needed. Critical proposals without ASN.1 impact can be checked if time permits.

 Intended outcome: Report to CB session in R2-2405876

 Schedule: Wednesday 2024-05-22 1700-1800 in Brk2

 Deadline: Thursday 2024-05-23 1000 JST

# 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.

Tdoc Limitation: 1 tdoc

R2-2404749 Correction to mandatory 80ms scheduling offset for positioning SI acquisition Huawei, HiSilicon, Ericsson CR Rel-15 36.306 15.11.0 1885 - F LCS\_LTE\_acc\_enh-Core

[R2-2404750](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404750%20Correction%20to%20mandatory%2080ms%20scheudling%20offset%20for%20positioning%20SI%20acquisition_r16.docx) Correction to mandatory 80ms scheduling offset for positioning SI acquisition Huawei, HiSilicon, Ericsson CR Rel-16 36.306 16.12.0 1886 - A LCS\_LTE\_acc\_enh-Core

[R2-2404751](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404751%20Correction%20to%20mandatory%2080ms%20scheudling%20offset%20for%20positioning%20SI%20acquisition_r17.docx) Correction to mandatory 80ms scheduling offset for positioning SI acquisition Huawei, HiSilicon, Ericsson CR Rel-17 36.306 17.6.0 1887 - A LCS\_LTE\_acc\_enh-Core

[R2-2404752](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404752%20Correction%20to%20mandatory%2080ms%20scheudling%20offset%20for%20positioning%20SI%20acquisition_r18.docx) Correction to mandatory 80ms scheduling offset for positioning SI acquisition Huawei, HiSilicon, Ericsson CR Rel-18 36.306 18.1.0 1888 - A LCS\_LTE\_acc\_enh-Core

* [AT126][401][POS] Rel-15 LTE positioning CR (Huawei)

 Scope: Check the CR in R2-2404749 (and mirrors in R2-2404750 / R2-2404751 / R2-2404752).

 Intended outcome: Agreed CRs (without CB if possible)

 Deadline: Thursday 2024-05-23 1000 JST

# 5 NR Rel-15 and Rel-16

Essential corrections only.

Tdoc Limitation: 2 tdocs in total for all sub agenda items NOTE: some agenda items have additional Tdoc limits.

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)

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.

Tdoc Limitation: 1 tdoc

AIP CRs

[R2-2405252](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405252%20capFRel16.docx) Missing Conditionally mandatory features without UE radio access capability parameters for 80ms scheduling offset for positioning SI acquisition Ericsson CR Rel-16 38.306 16.16.0 1087 2 F NR\_pos-Core R2-2403797

* Revised in R2-2405854

[R2-2405854](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405854.docx) Missing Conditionally mandatory features without UE radio access capability parameters for 80ms scheduling offset for positioning SI acquisition Ericsson CR Rel-16 38.306 16.16.0 1087 3 F NR\_pos-Core R2-2403797

* Agreed

[R2-2405251](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405251%20capARel17.docx) Missing Conditionally mandatory features without UE radio access capability parameters for 80ms scheduling offset for positioning SI acquisition Ericsson CR Rel-17 38.306 17.8.0 1088 2 A NR\_pos-Core R2-2403798

* Revised in R2-2405853

[R2-2405853](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405853.docx) Missing Conditionally mandatory features without UE radio access capability parameters for 80ms scheduling offset for positioning SI acquisition Ericsson CR Rel-17 38.306 17.8.0 1088 3 A NR\_pos-Core R2-2403798

* Agreed

[R2-2405250](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405250%20capARel18.docx) Missing Conditionally mandatory features without UE radio access capability parameters for 80ms scheduling offset for positioning SI acquisition Ericsson CR Rel-18 38.306 18.1.0 1086 2 A NR\_pos-Core R2-2403799

* Revised in R2-2405852

[R2-2405852](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405852.docx) Missing Conditionally mandatory features without UE radio access capability parameters for 80ms scheduling offset for positioning SI acquisition Ericsson CR Rel-18 38.306 18.1.0 1086 3 A NR\_pos-Core R2-2403799

* Agreed

Other documents

R2-2404753 Correction to Positioning SRS Configuration Huawei, HiSilicon CR Rel-16 38.331 16.16.0 4791 - F NR\_pos-Core

* Revised in R2-2405867

[R2-2404754](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404754%20Correction%20to%20Positioning%20SRS%20configuration-r17.docx) Correction to Positioning SRS configuration Huawei, HiSilicon CR Rel-17 38.331 17.8.0 4792 - A NR\_pos-Core

* Revised in R2-2405868

[R2-2404755](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404755%20Correction%20to%20Positioning%20SRS%20configuration-r18.docx) Correction to Positioning SRS configuration Huawei, HiSilicon CR Rel-18 38.331 18.1.0 4793 - A NR\_pos-Core

* Revised in R2-2405869

Discussion:

Lenovo agree with the intention but think it would be better to introduce new field descriptions instead of adding the behaviour in the resource type field description.

vivo think it should be clarified that the SRS configuration is for positioning. Ericsson think it should also apply for legacy; vivo understand that this case is specific to positioning.

Samsung agree with Lenovo.

Huawei indicate that the field descriptions are separate for legacy (resource set level) and positioning (resource level).

Intel also agree with Lenovo and Samsung and clarify that the intention is to introduce the field description for slotOffset-r16. Huawei think this is a bit divergent from MIMO SRS but possible to do.

Nokia felt the differing granularity between MIMO and positioning caused some confusion. They would like to see a revised CR.

* [AT126][402][POS] Slot offset for positioning SRS configuration (Huawei)

 Scope: Update the CR in R2-2404753 (and its mirror CRs) to introduce the change in a field description for the field slotOffset-r16.

 Intended outcome: Agreeable CR (with CB) in R2-2405867 (Rel-16), mirror CRs in R2-2405868 (Rel-17) and R2-2405869 (Rel-18)

 Deadline: Thursday 2024-05-23 1000 JST

[R2-2405867](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405867%20Correction%20to%20Positioning%20SRS%20configuration-r16.docx) Correction to Positioning SRS Configuration Huawei, HiSilicon CR Rel-16 38.331 16.16.0 4791 1 F NR\_pos-Core

* Styles to be corrected
* Revision history to be added in coversheet
* Agreed with this change as R2-2405983

Discussion:

Nokia think there are some formatting issues pointed out late in the discussion.

[R2-2405868](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405868%20Correction%20to%20Positioning%20SRS%20configuration-r17.docx) Correction to Positioning SRS configuration Huawei, HiSilicon CR Rel-17 38.331 17.8.0 4792 1 A NR\_pos-Core

* Styles to be corrected
* Revision history to be added in coversheet
* Agreed with this change as R2-2405984

[R2-2405869](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405869%20Correction%20to%20Positioning%20SRS%20configuration-r18.docx) Correction to Positioning SRS configuration Huawei, HiSilicon CR Rel-18 38.331 18.1.0 4793 1 A NR\_pos-Core

* Styles to be corrected
* Revision history to be added in coversheet
* Agreed with this change as R2-2405985

[R2-2405104](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405104.docx) Corrections on the prerequisite feature groups of NR-Multi-RTT-MeasurementCapability Xiaomi CR Rel-16 37.355 16.13.0 0505 - F NR\_pos-Core

* Not pursued

[R2-2405105](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405105.docx) Corrections on the prerequisite feature groups of NR-Multi-RTT-MeasurementCapability Xiaomi CR Rel-17 37.355 17.8.0 0506 - A NR\_pos-Core

* Not pursued

[R2-2405106](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405106.docx) Corrections on the prerequisite feature groups of NR-Multi-RTT-MeasurementCapability Xiaomi CR Rel-18 37.355 18.1.0 0507 - A NR\_pos-Core

* Not pursued

Discussion:

Lenovo agree with the intention but note that the IE has been extended in Rel-17 and -18 with contents that are not conditional, so it seems not right to have the condition at IE level. They think instead it should be in the field description.

CATT think there is no need for the new wording in light of the last two fields in the IE.

Qualcomm think the CR is not needed; the UE needs SRS for multi-RTT, of course, but they think this is obvious without stating it here.

Nokia also wonder why this change is in the LPP spec instead of being clarified in RRC.

CATT understand that the prerequisite capability is already captured by the last two fields.

Intel have some sympathy with the intention; they think normally we would capture it in the field description.

Huawei agree with Qualcomm that nothing is needed; the UL-SRSp capability is mandatory present in the multi-RTT capabilities, so this already implies that SRSp has to be supported and the current sentence is not wrong. Intel understand after checking that with the current structure, if the UE indicates support of multi-RTT, it always has to indicate support of the SRS capability.

Xiaomi think there is no technical impact if the CR is not agreed, but the precondition features should generally be aligned with the feature list. Intel think it is OK as long as there is no UE/NW misalignment.

[R2-2405574](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405574%20OAMF.docx) OAM solution for the provisioning PRS Assistance Data to LMF Ericsson CR Rel-16 38.305 16.10.0 0169 - F NR\_pos-Core

* Not pursued

[R2-2405573](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405573%20OAMA.docx) OAM solution for the provisioning PRS Assistance Data to LMF Ericsson CR Rel-17 38.305 17.7.0 0168 - A NR\_pos-Core

* Not pursued

[R2-2405572](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405572%20OAMAA.docx) OAM solution for the provisioning PRS Assistance Data to LMF Ericsson CR Rel-18 38.305 18.1.0 0167 - A NR\_pos-Core

* Not pursued

Discussion:

ZTE wonder what “DL-PRS related assistance data” means in this context; they think the mobile TRP information cannot be set by OAM.

vivo think the contribution is based on a RAN3 agreement and RAN3 could do the stage 2 change.

Nokia would also prefer for RAN3 to handle it, and they think that both OAM and implementation options are possible in any case and not precluded from RAN2 spec perspective.

Qualcomm think nothing is broken in Rel-16 with or without the NOTE.

Ericsson intended the NOTE mainly for the beam-related configuration. They also think there is some connection to the NTN text added in Rel-18. Qualcomm think this is a different situation and we already have everything specified in NRPPa, but not excluding the OAM solution, whereas NTN uses OAM for things that are not in NRPPa.

# 6 NR Rel-17

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

## 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

AIP CRs

[R2-2405365](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405365%20Miscellaneous%20RRC%20corrections%20for%20SL%20relay%20%28Rel-17%29.docx) Miscellaneous RRC corrections for SL relay Huawei, HiSilicon CR Rel-17 38.331 17.8.0 4682 2 F NR\_SL\_relay-Core R2-2403800

* Agreed

[R2-2405366](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405366%20Miscellaneous%20RRC%20corrections%20for%20SL%20relay%20%28Rel-18%29.docx) Miscellaneous RRC corrections for SL relay Huawei, HiSilicon CR Rel-18 38.331 18.1.0 4683 2 A NR\_SL\_relay-Core R2-2403801

* Agreed

[R2-2405408](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CDocs%5CR2-2405408.zip) Correction on SidelinkUEInformationNR Philips International B.V. CR Rel-17 38.331 17.8.0 4731 1 F NR\_SL\_relay-Core R2-2403398

* Agreed

[R2-2405412](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CDocs%5CR2-2405412.zip) Correction on SidelinkUEInformationNR Philips International B.V. CR Rel-18 38.331 18.1.0 4732 1 A NR\_SL\_relay-Core R2-2403400

* Agreed

Other documents

R2-2405349 Corrections for sidelink UE Information ZTE, Sanechips CR Rel-17 38.331 17.8.0 4828 - F NR\_SL\_relay-Core

* Not pursued

[R2-2405350](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405350%20Corrections%20for%20sidelink%20UE%20information-r18.docx) Corrections for sidelink UE Information ZTE, Sanechips CR Rel-18 38.331 18.1.0 4829 - A NR\_SL\_relay-Core

* Not pursued

Discussion:

Apple understand that the Tx resource request is a general case, and they are not sure we need to exclude all of this functionality from the relay case. They find the current text more flexible.

Ericsson think nothing is broken.

Nokia have some concern because the affected IE is also needed for the relay case.

ZTE indicate that if the relay and non-relay cases are not distinguished, sidelink communication behaviours may also cover the relay case. On Nokia’s concern, they understand that the first level 4 bullet only applies to the non-relay case and the second level 4 bullet applies to both.

Huawei understand the change is that for the relay case, the UE will not include the Tx resource request, which is covered under other branches for relays. They have some sympathy for the change but also agree with Ericsson that nothing is broken, because there is an “if needed” condition already. ZTE think the “if needed” applies only to the subfields.

CATT agree with Ericsson and Huawei.

[R2-2405363](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405363%20Clarification%20to%20s-MeasConfig%20for%20L2%20U2N%20relay%20case%20%28Rel-17%29.docx) Clarification to s-MeasConfig for L2 U2N relay case Huawei, HiSilicon, Sharp, CATT, LG CR Rel-17 38.331 17.8.0 4830 - F NR\_SL\_relay-Core

* Agreed

[R2-2405364](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405364%20Clarification%20to%20s-MeasConfig%20for%20L2%20U2N%20relay%20case%20%28Rel-18%29.docx) Clarification to s-MeasConfig for L2 U2N relay case Huawei, HiSilicon, Sharp, CATT, LG CR Rel-18 38.331 18.1.0 4831 - A NR\_SL\_relay-Core

* Agreed

## 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

AIP CR

[R2-2405255](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405255%20ECID.docx) Introduction of NR UE Rx-Tx time difference measurement in NR UL E-CID Ericsson, Polaris Wireless, China Telecom, NTT Docomo, AT&T, FirstNet, Intel, Comtech, Nokia, Nokia Shanghai Bell, Verizon Wireless, Huawei, ZTE CR Rel-18 38.305 18.1.0 0164 2 F NR\_pos\_enh-Core R2-2403740

* Agreed

Other documents

[R2-2404625](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404625%20Correction%20on%20SP%20SRS%20activation%20deactivation%20MAC%20CE%28R17%29.docx) Correction on SP SRS activation/deactivation MAC CE ZTE Corporation CR Rel-17 38.321 17.8.0 1840 - F NR\_pos\_enh-Core

* Postponed

[R2-2404626](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404626%20Correction%20on%20SP%20SRS%20activation%20deactivation%20MAC%20CE%28R18%29.docx) Correction on SP SRS activation deactivation MAC CE(R18) ZTE Corporation CR Rel-18 38.321 18.1.0 1841 - F NR\_pos\_enh-Core

* Postponed

Discussion:

Huawei understand the idea but think the correction does not completely resolve the problem, because there is also a cell ID. ZTE understand that the network would use the last serving cell ID. Huawei think SP-SRS in RRC\_INACTIVE in Rel-17 is not a big problem, because the RRCRelease can just configure periodic SRS.

Qualcomm note that there is subsequent DL data transfer; the UE can send MO-LR via SDT and SP-SRS can be activated with subsequent DL data. They also wonder if the cell ID by itself is enough.

ZTE intended that the cell ID would use the last serving cell, but they could revise the CR to make a similar change to the cell ID.

Intel think there is nothing wrong with the cell ID, just the BWP ID, and they think changing the behaviour for the cell ID might create a problem in Rel-18. Huawei wonder if we will reuse this MAC CE in Rel-18; Intel understand that we will not.

ZTE suggest that we change BWP ID now and see how the cell ID should be handled in light of the MAC CE decisions for aggregated SRS.

[R2-2404756](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404756%20Correction%20on%20the%20UL%20TEG%20report%20for%20R17.docx) Correction on the UL TEG report Huawei, HiSilicon, Ericsson CR Rel-17 38.331 17.8.0 4794 - F NR\_pos\_enh-Core

* Multi-RTT to be removed from the coversheet
* “a ue-TxTEG-ID” to be changed to “the ue-TxTEG-ID” in the last field description
* Remove duplicated field description table
* Add 6.2.2 to affected clauses
* Agreed with these changes as R2-2405862

[R2-2404757](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404757%20Correction%20on%20the%20UL%20TEG%20report%20for%20R18.docx) Correction on the UL TEG report Huawei, HiSilicon, Ericsson CR Rel-18 38.331 18.1.0 4795 - A NR\_pos\_enh-Core

* Multi-RTT to be removed from the coversheet
* “a ue-TxTEG-ID” to be changed to “the ue-TxTEG-ID” in the last field description
* Remove duplicated field description table
* Add 6.2.2 to affected clauses
* Agreed with these changes as R2-2405863

Discussion:

Qualcomm think the impacted functionality on the coversheet should not mention multi-RTT.

CATT think “a ue-TxTEG-ID” should be “the ue-TxTEG-ID” in the last field description.

Lenovo note there is a duplicated field description table, and 6.2.2 is missing from the affected clauses.

[R2-2405282](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405282%2037355%20Corrections%20REL-17.docx) Corrections to NR-On-Demand-DL-PRS-Information IE and ten-ms-unit-ResponseTime capability Nokia CR Rel-17 37.355 17.8.0 0508 - F NR\_pos\_enh-Core

* Postponed

[R2-2405283](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405283%2037355%20Corrections%20REL-18.docx) Corrections to NR-On-Demand-DL-PRS-Information IE and ten-ms-unit-ResponseTime capability Nokia CR Rel-18 37.355 18.1.0 0509 - A NR\_pos\_enh-Core

* Postponed

Discussion:

CATT think the fourth change is not accurate because OD-PRS is just a request for the configuration, not the transmission of PRS, so all the changes of the “transmission” wording are wrong.

Ericsson would also be fine with the removal of “transmission” in the fourth set of changes. They think the purpose does not need to be extensively described here since we already have it in the stage 2.

ZTE think there is nothing functionally wrong and it is somewhat editorial. They think the procedure is already clear from the stage 2 and stage 3 specs.

Nokia note that there are requests for start time/duration and PRS information, and the “transmission” changes were to disambiguate what the first one means. They agree there are no functional changes, but they think at least the “recommended” aspect is important for clarity of the spec.

Intel think there is nothing wrong, but they agree the changes clarify. ZTE understand that it is clear in the stage 2.

Qualcomm think the description of the QCL information is on the borderline of functional impact and should be in Rel-17.

ZTE think the QCL part is also clear without the CR.

[R2-2405405](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CDocs%5CR2-2405405.zip) Correction on posSIB(s) acquisition [SI-SCHEDULING] Philips International B.V., Ericsson CR Rel-17 38.331 17.8.0 4467 2 F NR\_pos\_enh-Core R2-2403387

* Work item to change to TEI17
* First change to be removed
* NE-DC and NR-DC should be impacted
* Filename format to be corrected (start with tdoc number)
* Agreed with these changes as R2-2405864

[R2-2405406](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CDocs%5CR2-2405406.zip) Correction on posSIB(s) acquisition [SI-SCHEDULING] Philips International B.V., Ericsson CR Rel-18 38.331 18.1.0 4725 1 A NR\_pos\_enh-Core R2-2403388

* Work item to change to TEI17
* First change to be removed
* NE-DC and NR-DC should be impacted
* Filename format to be corrected (start with tdoc number)
* Agreed with these changes as R2-2405865

Discussion:

Chair notes the WI code should be TEI17.

Lenovo think most of the changes are OK, but for change 1, the case is already covered because the type 2 SIB is discussed elsewhere in the existing text. They also think some coversheet changes are needed (NE-DC and NR-DC should be impacted).

Huawei note the filename should start with the tdoc number.

[R2-2405570](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405570%20MACF.docx) Correction of when to stop the triggered SR for positioning measurement gap activation/deactivation Ericsson, vivo CR Rel-17 38.321 17.8.0 1871 - F NR\_pos\_enh-Core

* Postponed

[R2-2405571](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405571%20MACA.docx) Correction of when to stop the triggered SR for positioning measurement gap activation/deactivation Ericsson, vivo CR Rel-18 38.321 18.1.0 1872 - A NR\_pos\_enh-Core

* Postponed

Discussion:

Ericsson indicate that some more offline time is needed.

Huawei think this has been discussed previously and they do not see that anything is wrong.

vivo think Huawei’s comment makes sense for the current spec, but they see that the MAC CE may not be cancelled, and they think the CR can be lightly modified to make sense. Ericsson indicate the CR has changed relative to vivo’s proposal.

Withdrawn/Not available

R2-2404617 Correction on SP SRS activation deactivation MAC CE(R17) ZTE Corporation draftCR Rel-17 38.321 17.8.0 F NR\_pos\_enh-Core Withdrawn

R2-2404618 Correction on SP SRS activation deactivation MAC CE(R18) ZTE Corporation draftCR Rel-18 38.321 18.1.0 F NR\_pos\_enh-Core Withdrawn

R2-2405608 Correction on internode message for posSRS in RRC\_INACTIVE Huawei, HiSilicon CR Rel-17 38.331 17.8.0 4849 - F NR\_pos\_enh-Core Withdrawn

R2-2405609 Correction on internode message for posSRS in RRC\_INACTIVE Huawei, HiSilicon CR Rel-18 38.331 18.1.0 4850 - A NR\_pos\_enh-Core Withdrawn

# 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: 0 TU

Tdoc Limitation: 3 tdocs

### 7.2.1 Organizational

Including incoming LSs and rapporteur inputs. CR rapporteurs are asked to continue maintaining an open issues list reflecting known issues to be handled during the maintenance phase.

Incoming LSs with RAN2 in Cc:

[R2-2404105](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404105_R1-2403539.docx) Reply LS on SRS BW aggregation impact on other channels/signals (R1-2403539; contact: Huawei) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN4 Cc:RAN2, RAN3

* Noted

[R2-2404140](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CDocs%5CR2-2404140.zip) LS reply on LCS user plane connection binding to the UE (S2-2405797; contact: CATT) SA2 LS in Rel-18 5G\_eLCS\_Ph3 To:CT1 Cc:CT4, RAN2

* Noted

Incoming LSs with “take into account” action and no related document

[R2-2404107](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404107_R1-2403577.docx) LS on UE’s reporting SL PRS CBR measurement to gNB (R1-2403577; contact: Qualcomm) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2

* Noted

[R2-2404118](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404118_R1-2403732.docx) LS on the dci-FormatsSL and DCI format 3\_2 (R1-2403732; contact: Qualcomm) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2

* Noted

Other incoming LSs and related documents

R2-2404104 Reply LS on positioning MAC agreements (R1-2403536; contact: Huawel) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2

* Noted

Discussion:

Huawei understand that the spec is in line with RAN1 understanding.

[R2-2404111](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404111_R1-2403622.doc) Reply LS on decisions on SLPP (R1-2403622; contact: vivo) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2

[R2-2404304](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404304%20Discussion%20on%20RAN1%20Reply%20LS%20regarding%20SLPP%20parameters.docx) Discussion on RAN1 Reply LS regarding SLPP parameters vivo discussion Rel-18 FS\_NR\_pos\_enh2

Proposal 1: Endorse TP in Annex1, to move sl-POS-ARP-ID-Tx into CommonSL-PRS-MethodsIEsProvideAssistanceData. Inform RAN1 about the decision.

Discussion:

Qualcomm think this does not make sense as assistance data. They think it works fine in the RequestLocationInformation and is only valid for a single UE, and they do not see from the contributions a strong motivation for making this change.

Intel think if we use the location request procedure, the Tx UE has to signal a requested positioning method, and this is a misuse of the procedure. Qualcomm still think the alternative does not work because the server talks only to a single UE (“UE1”), and there is no way for the server to know when the SL-PRS have been transmitted/measured.

Intel understand that the server can request assistance information from each anchor via CT1’s upper layer procedure.

vivo agree with Intel, and they think this information is subject to change with time and can also be provided as assistance data.

Qualcomm understand the procedures from SA2 are the same for the server UE and the LMF; it talks to the target UE, including SLPP messages for the anchor UEs, and the anchor UEs do not respond to the server directly. They also observe that the assistance data have no timestamp, and the measurement reports include the time when the signal was measured. They see no difference in procedures since the server (UE or LMF) only talks to UE1.

Intel understand we already agreed the server needs to get the sequence ID from each anchor UE.

ZTE understand Qualcomm’s argument is that the assistance data procedure should come first, but in their view there is no strict requirement on the order of the procedures.

Huawei wonder if the information might be needed in both RequestLocationInformation and ProvideAssistanceData. If the UE is acting like a gNB (DL-like), it looks more like ProvideAssistanceData, and in the UL-like case it may be more like assistance information.

vivo indicate that other WGs view this information as assistance data, and they see no technical issue about where to put it. They also understand that SLPP does not specify which role each UE is in; they are just endpoints.

Intel agree with vivo.

Qualcomm see it as similar to reporting TEGs as part of the measurement; this is information that will be used for position calculation, not to “assist” the measurement procedure. They understand that the ProvideAssistanceData is for a list of UEs.

Intel understand that the server will receive several SLPP messages via UE1, each for one anchor UE.

* [AT126][403][POS] Tx UE configuration as assistance data or location information (vivo)

 Scope: F2F offline to further discuss P1 of R2-2404304 and attempt to converge.

 Intended outcome: Report to CB session in R2-2405870 and approvable LS to RAN1 (to include responses to other SLPP issues where RAN1 need to be notified) in R2-2405871

 Schedule: Tuesday 2024-05-21 0930-1030 in Brk3

 Deadline: Thursday 2024-05-23 1000 JST

Proposal 2: Endorse TP in Annex2, to introduce a list of measurement elements, to support multiple Rx ARPs reporting in single measurement report. Inform RAN1 about the decision.

Discussion:

ZTE think the list size should be larger than 4 based on the RAN1 LS. Qualcomm have a different understanding and think we just need to repeat the measurement list multiple times if there are additional measurements; however, they think the request and capabilities also need to be modified.

vivo indicate there should be only one ARP ID corresponding to one SL-PRS resource in Rel-18, so they understand 4 is enough.

Agreement:

Introduce a list of 4 measurement elements, to support multiple Rx ARPs reporting in single measurement report. Implementation to be worked out in SLPP rapporteur CR (including request and potentially capability, to be discussed).

Proposal 3: Adopt Draft Reply LS to RAN1 in Annex3.

[R2-2405870](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405870%20Report%20of%20%5BAT126%5D%5B403%5D%5BPOS%5D%20Tx%20UE%20configuration%20as%20assistance%20data%20or%20location%20information.docx) Report of [AT126][403][POS] Tx UE configuration as assistance data or location information vivo discussion Rel-18 FS\_NR\_pos\_enh2

Proposal 1: Endorse TP in Annex1, to add sl-POS-ARP-ID-Tx into CommonSL-PRS-MethodsIEsProvideAssistanceData. Inform RAN1 about the decision.

Agreement:

Add sl-POS-ARP-ID-Tx into CommonSL-PRS-MethodsIEsProvideAssistanceData. Inform RAN1 about the decision. TP in Annex 1 of R2-2405870 can be used as implementation baseline.

[R2-2405871](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405871%20Reply%20LS%20on%20SLPP%20parameters%20provision.docx) Reply LS on SLPP parameters provision vivo LS out Rel-18 NR\_pos\_enh2-Core To:RAN1

* Approved as R2-2405986

Discussion:

ZTE note that it is still formatted as a draft (source should be RAN2).

[R2-2404112](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404112_R1-2403636.docx) Reply LS on questions on RAN1 parameter list (R1-2403636; contact: CATT) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2 Cc:RAN3, RAN4

* Noted

[R2-2404433](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404433%20TPs%20for%20the%20Reply%20LS%20on%20questions%20on%20RAN1%20parameter%20list.docx) TPs for the Reply LS on questions on RAN1 parameter list CATT discussion Rel-18 NR\_pos\_enh2

Proposal 1: RAN2 to agree the TP 1 above to support Rx hopping in DL-AoD.

Proposal 2: RAN2 to agree the TP 2 above for the aggregated report.

Discussion:

ZTE understand the LS indicates two cases, one where a single DL-PRS-ID is enough, another where multiple IDs are needed, and they think the TP does not address the first one, but the legacy DL-PRS-ID can be used for this case. They think this can be reflected in the field description.

CATT understand the TP from ZTE changes the DL-PRS-ID from mandatory to OPTIONAL.

Qualcomm think the DL-PRS-ID should still be mandatory, because the resource can never be identified uniquely with only the resource set ID. They understand we always need set ID / resource ID / DL-PRS-ID.

Huawei think it is OK to keep it optional, but if there is only one DL-PRS-ID it will be duplicated in multiple linkages.

Qualcomm think the point is that the IE should be included in the first measurement and the additional measurements, and as RAN1 indicated the subsequent measurements come from the same TRP and the ID is not needed there, so they think it makes sense to change it to OPTIONAL as proposed by CATT.

Ericsson think we could specify in the field description that it is always included for the first measurement.

ZTE think we can say “if the field is present and the DL-PRS-ID is present, the legacy DL-PRS-ID shall be ignored”. Qualcomm think this is wrong because the legacy DL-PRS-ID should always be there in the first measurement and would apply to the additional measurements.

Proposal 3: RAN2 to agree set the RIL H006 “Rejected”.

[Chair’s note: Issue N013 is also related to the TPs in this document.]

Agreements:

Rx hopping in DL-AoD is supported as indicated by RAN1, with TP 1 from R2-2404433 as baseline.

Aggregated measurement reports are supported as indicated by RAN1, with TP 2 from R2-2404433 as baseline (DL-PRS-ID changed to OPTIONAL, with an indication that it is always provided for the first measurement). TP to be checked as part of the LPP CR update.

H006 is rejected.

N013 is agreed.

[R2-2404117](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404117_R1-2403728.docx) LS on PRS resource ID for bandwidth aggregation (R1-2403728; contact: ZTE) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2

* Noted

[R2-2404611](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404611%20Discussion%20on%20reporting%20PRS%20resource%20ID%20in%20PRS%20BW%20aggregation.docx) Discussion on reporting PRS resource ID in PRS BW aggregation ZTE Corporation discussion Rel-18 NR\_pos\_enh2

Proposal 1: To achieve using the existing PRS resource ID for PRS aggregation, RAN2 to adopt the following LPP changes:

 Change nr-AggregatedDL-PRS-ResourceSetID-List-r18 from (SIZE (2.. 3)) to (SIZE (1.. 2));

 Change field description in nr-AggregatedDL-PRS-ResourceSetID-List-r18 to ‘if the field is present, the nr-DL-PRS-ResourceSetID-r16 should be present, and the nr-DL-PRS-ResourceID-r16 is taken as one of aggregated PRS resource ID’.

Adopt the corresponding TP.

Discussion:

Huawei would prefer to directly add the PRS resource ID into the linkage; they think this would be simpler. Intel agree. Samsung also agree.

ZTE clarify that this is intended to follow RAN1’s wording, but they agree that the exact structure from the LS is not mandatory; they can accept adding the resource ID to the linkage.

CATT understand that each measurement report includes the resource ID, but the TP from ZTE has only one resource ID. They understand that if there are several aggregated measurement reports there should be several resource ID. ZTE indicate that whether the PRS resources are aggregated depends on the configuration, and the LMF only needs to know one PRS resource ID; they understand this is why RAN1 said reuse is also workable.

Nokia are not sure how you can use one resource set to aggregate. ZTE clarify that it is aggregated with the legacy value, so the number of aggregated resource set IDs is still 2..3. However, companies seem to prefer putting the ID directly in the linkage.

Samsung understand that the field should be OPTIONAL since the LMF can infer the other aggregate resource sets.

Agreement:

Address PRS BW aggregation by adding the PRS resource ID to the linkage as an OPTIONAL field.

[R2-2404125](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404125_R4-2406386.docx) LS on SL positioning measurements (R4-2406386; contact: Huawei) RAN4 LS in Rel-18 NR\_pos\_enh2-Core To:RAN1, RAN2

[R2-2404770](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404770%20Discussion%20on%20the%20reply%20LS%20for%20SL%20positoning%20measurement.docx) Discussion on the reply LS for SL positoning measurement Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

Proposal1: Specify in the field description of SL-AOA measurement that either one of Azimuth and Zenith results or both shall be present in SL-AOA-MeasElement. Adopt the TP in Annex A

Proposal2: Reply to RAN4 that it is not possible for SL-AOA measurement to report only SL PRS-RSRP and/or SL PRS-RSRPP measurement (without SL AzimuthAoA or SL ZenithAoA measurement) for SL-AoA positioning. Adopt the rely LS in Annex B.

Discussion:

Intel think this is in line with company views and Qualcomm have a related TP.

Ericsson think the power measurements could make sense by themselves for SL “E-CID” if we had such a thing.

Agreements:

At least one angular measurement (AoA/ZoA) is mandatory in the measurement report for SL-AoA positioning.

[R2-2404769](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404769%20Draft%20reply%20LS%20to%20RAN4%20on%20SL%20positioning%20measurement.docx) LS on SL positioning measurements Huawei, HiSilicon LS out Rel-18 NR\_pos\_enh2 To:RAN4

* Revised in R2-2405866
* [AT126][404][POS] LS to RAN4 on SL positioning measurements (Huawei)

 Scope: Revise the draft LS in R2-2404769 to include our agreement on AoA/ZoA measurements.

 Intended outcome: Approved LS (without CB if possible) in R2-2405872

 Deadline: Thursday 2024-05-23 1000 JST

R2-2405872 LS on SL positioning measurements Huawei, HiSilicon LS out Rel-18 NR\_pos\_enh2 To:RAN4

Additional LSs received during meeting, to be treated on a time-available basis

[R2-2405928](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405928_R1-2405403.docx) LS on higher layer parameters for Rel-18 Positioning (R1-2405403; contact: Intel) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2

* Noted

[R2-2405929](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405929_R1-2405456.doc) Reply LS on SRS bandwidth aggregation (R1-2405456; contact: ZTE) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2 Cc:RAN3

* Noted

RIL and open issue lists

Note: RRC open issues document proposes resolutions for O800, H907, H908

[R2-2404432](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CDocs%5CR2-2404432.zip) LPP RIL list for Rel-18 Positioning CATT discussion Rel-18 NR\_pos\_enh2

* Noted

[R2-2405256](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405256%20RRCOpenIssueList.docx) Open issues list For RRC Positioning Ericsson discussion Rel-18

Proposal 1 Current text which follows legacy SL-Commuication “if the UE is configured with sl-RxPool and/or sl-PRS-RxPool included in RRCReconfiguration message with reconfigurationWithSync (i.e. handover)” is kept as it is; i.e O800 is set to PropDisagree.

Proposal 2 H905 is agreed.

Proposal 3 H907 and H908 are PropDisagree and O320 is removed from Positioning RIL.

Agreements:

O800 is set to Rejected.

H905 is set to Agreed.

H907/H908 are set to Rejected.

[R2-2405258](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CDocs%5CR2-2405258.zip) RIL For RRC Positioning Ericsson discussion Rel-18

* Noted

Agreement:

PropAgree and PropReject/PropDisagree RILs from R2-2405258 are confirmed as Agreed/Rejected respectively.

Rapporteur CRs (endorsed after RAN2#125bis)

[R2-2404434](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404434%20Corrections%20to%20TS%2037.355.docx) Corrections to TS 37.355 CATT CR Rel-18 37.355 18.1.0 0500 2 F NR\_pos\_enh2 R2-2403818

[R2-2405257](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405257.docx) Miscellaneous and RRC Positioning RILs based Corrections Ericsson CR Rel-18 38.331 18.1.0 4759 2 F NR\_pos\_enh2 R2-2403819

* [Post126][406][POS] Rel-18 positioning LPP CR (CATT)

 Scope: Update the CR in R2-2404434 in line with decisions of this meeting. Late-arriving parameter updates from RAN1 can be taken into account if possible.

 Intended outcome: Agreed CR in R2-2405883

 Deadline: Short (for RP)

* [Post126][407][POS] Rel-18 positioning RRC CR (Ericsson)

 Scope: Update the CR in R2-2405257 in line with decisions of this meeting, including implementation of constraints on configuration of SL-PRS carrier in SIB23/preconfiguration. Late-arriving parameter updates from RAN1 can be taken into account if possible.

 Intended outcome: Agreed CR in R2-2405884

 Deadline: Short (for RP)

* [Post126][408][POS] Rel-18 positioning stage 2 (305) CR (Qualcomm)

 Scope: Update the CR in R2-2405247 in line with decisions of this meeting.

 Intended outcome: Agreed CR in R2-2405885

 Deadline: Short (for RP)

* [Post126][409][POS] Rel-18 positioning stage 2 (300) CR (vivo)

 Scope: Develop a positioning CR to 38.300 in line with decisions of this meeting.

 Intended outcome: Agreed CR in R2-2405886

 Deadline: Short (for RP)

* [Post126][410][POS] Rel-18 positioning SLPP CR (Intel)

 Scope: Update the CR in R2-2404191 in line with decisions of this meeting. Late-arriving parameter updates from RAN1 can be taken into account if possible.

 Intended outcome: Agreed CR in R2-2405887

 Deadline: Short (for RP)

* [Post126][411][POS] Rel-18 positioning MAC CR (Huawei)

 Scope: Update the CR in R2-2404762 in line with decisions of this meeting.

 Intended outcome: Agreed CR in R2-2405888

 Deadline: Short (for RP)

* [Post126][412][POS] Rel-18 positioning RRC capability CRs (Xiaomi)

 Scope: Update the CRs in R2-2404623 and R2-2404624 in line with decisions of this meeting. Late-arriving parameter updates from RAN1 can be taken into account if possible.

 Intended outcome: Endorsed CRs in R2-2405889 (38.331) and R2-2405890 (38.306)

 Deadline: Very short (for merge into mega CRs)

* [Post126][413][POS] Rel-18 positioning LPP capability CR (Xiaomi)

 Scope: Update the CR in R2-2404595 in line with decisions of this meeting. Late-arriving parameter updates from RAN1 can be taken into account if possible.

 Intended outcome: Agreed CR in R2-2405981

 Deadline: Short (for RP)

* [Post126][414][POS] Rel-18 positioning SLPP capability CR (Xiaomi)

 Scope: Update the CR in R2-2404760 in line with decisions of this meeting. Late-arriving parameter updates from RAN1 can be taken into account if possible.

 Intended outcome: Agreed CR in R2-2405982

 Deadline: Short (for RP)

Agreements:

The Rel-18 positioning RRC ASN.1 is considered in condition to freeze upon conclusion of the email discussion on the rapporteur CR.

The Rel-18 LPP ASN.1 is considered in condition to freeze upon conclusion of the email discussion on the rapporteur CR.

The Rel-18 SLPP ASN.1 is considered in condition to freeze upon conclusion of the email discussion on the rapporteur CR.

### 7.2.2 Stage 2

Impact to 38.300, 37.340, and 38.305. For each specification, a single CR with miscellaneous corrections is requested from the CR rapporteur; minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

This agenda item may be handled at lower priority.

Rapporteur CR

[R2-2405247](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405247_%28Misc%20Stage%202%20Corrections%29.docx) Miscellaneous Stage 2 Corrections Qualcomm Incorporated CR Rel-18 38.305 18.1.0 0163 1 F NR\_pos\_enh2 R2-2403188

Impact to 38.300

[R2-2404765](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404765%20Remaining%20issues%20R18%20POS%20stage2%20for%20TS%2038.300.docx) Remaining issues R18 POS stage2 for TS 38.300 Huawei, HiSilicon, VIVO discussion Rel-18 NR\_pos\_enh2

Proposal1: Add the following descriptions for RAN stage2 spec for SL positioning, Adopt the TP in Annex A

 Resource allocation scehems for SL positionig, included scheme1 and scheme2

 Identities for scheduling in dedicated SL-PRS resource pool

Agreement:

Add the following descriptions for RAN stage2 spec for SL positioning:

 Resource allocation schemes for SL positioning, included scheme1 and scheme2

 Identities for scheduling in dedicated SL-PRS resource pool

Impact to 38.305

R2-2404435 Corrections on TS 38.305 for CPP CATT, Nokia, NSB, Ericsson CR Rel-18 38.305 18.1.0 0165 - F NR\_pos\_enh2

* Postponed

Discussion:

Qualcomm wonder if the note is correct; it says “carrier phase positioning”, but the general requirement for the UE and PRU measurements is already there in the section. CATT clarify that the note is not just for the measurement window but for the specific case of configuring a measurement window to the UE and the PRU.

Qualcomm think the mention of CPP should be removed.

Nokia think there was some confusion about which measurements the window applies to, and they can accept removing the mention of CPP, although they understand that the intention of the feature is specifically for CPP.

CATT do not see a RAN1 requirement that the window would be associated for the two devices for legacy measurements; this is why they identified CPP. Qualcomm agree but also think there is no such requirement for CPP, only the behaviour of a reasonable implementation.

Ericsson understood that CPP would not work without alignment of the window. Qualcomm do not see that this is a spec requirement.

Ericsson think we could check offline if there are RAN1 requirements to drive this.

Qualcomm note that we have not mentioned CPP in stage 2 before.

[R2-2404766](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404766%20Remaining%20issues%20R18%20POS%20stage2%20for%20TS%2038.305.docx) Remaining issues R18 POS stage2 for TS 38.305 Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

Proposal1: Add the following descriptions for RAN stage2 spec for LPHAP with pre-configured SRS when the UE sends RRC resume request. Adopt the TP in Annex A

 Event triggered when posSRS is pre-configured in RRC\_INACTIVE

 When positioning SRS tarnsmission is on-going in RRC\_INACTIVE:

 The UE moves from one validity area to another validity area

 The UE moves out of validity area

[R2-2405259](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405259%20stage2.docx) DRX and PRS alignment for positioning Ericsson CR Rel-18 38.305 18.1.0 0166 - F NR\_pos\_enh2

[R2-2405284](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405284%20Pos%20RRC_INACTIVE.docx) Further clarifications for Positioning in RRC\_INACTIVE state Nokia discussion Rel-18 38.305 NR\_pos\_enh2-Core R2-2403500

### 7.2.3 SLPP corrections

Impact to 38.355. A single CR with miscellaneous corrections is requested from the spec rapporteur; minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

Open issues list

Open RILs: Rapp022, Rapp023, Rapp024, Rapp025, Rapp026

R2-2404189 [Post125bis][406][POS] 38.355 update Open Issue list Intel Corporation discussion Rel-18 NR\_pos\_enh2-Core

* Noted

Rapporteur CRs (endorsed after RAN2#125bis)

[R2-2404191](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404191%20Miscellaneous%20corrections%20to%20SLPP%20specification%20v04.docx) Miscellaneous corrections to SLPP specification Intel Corporation CR Rel-18 38.355 18.1.0 0003 2 F NR\_pos\_enh2-Core R2-2403817

[R2-2404760](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404760%20CR%2038.355%20for%20SLPP%20capability.docx) CR 38.355 for SLPP capability Xiaomi CR Rel-18 38.355 18.1.0 0004 1 B NR\_pos\_enh2-Core R2-2403977

Rapp022, Rapp023, Rapp026

[R2-2404190](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404190%20SLPP%20related%20open%20issues.docx) Rapp022, Rapp023, Rapp026, Further Considerations on SLPP related open issues Intel Corporation discussion Rel-18 NR\_pos\_enh2-Core

Proposal 1: For SL-AoA-MeasElement, SL-RTT-MeasElement and SL-TDOA-MeasElement, change maxNrOfUE to maxNrOfARP (max number 256).

Proposal 2: reverse RAN2 agreements, the association information between ARP-ID and the already transmitted SL PRS resource(s) is still placed inside CommonSL-PRS-MethodsIEsRequestAssistanceData and SL-PRS-AssistanceData of CommonSL-PRS-MethodsIEsProvideAssistanceData;

Proposal 3: Server needs to inform the Rx UE of upcoming assistance data post SL PRS reception, i.e., the Rx UE should expect to receive this information subsequent to a SL PRS reception. Server should trigger the second round of assistance data transfer procedure to configure the association information for ARP-ID and already transmitted SL PRS to the Rx UE.

Proposal 4: introduce a new field to indicate the Tx UE to transmit SL-PRS immediately once resource is available. If this field is absent, the UE can store the SL-PRS-TxInfo for future SL-PRS transmission (e.g., triggered by SCI from a peer UE).

Discussion:

ZTE think one UE should not indicate in SLPP to another UE when to start transmitting SL-PRS; they understand that this is only used for the SL-RTT scenario, in which case the anchor UE should wait for the SCI, so they do not see the need to signal this explicitly. Intel clarify that the proposal is for the server to indicate to the Tx UE.

Huawei think from the resource allocation pov, this is not entirely feasible: For RA scheme 1, the UE requests resources from the network, and for scheme 2 it is uncertain when the UE can secure the resources. They also want to clarify that the peer UE should have started transmission before the ProvideAssistanceData.

Samsung think the intention of the proposal is to introduce a flag to indicate whether the SLPP message is for triggering transmission “right now” or providing Tx information for a future transmission triggered by SCI; they can accept the proposal.

vivo think the current Tx info can be used to trigger the UE to send SL-PRS and there is no need to indicate explicitly.

Qualcomm think the flag is needed for the TDOA scenario with anchor UEs that do not support Rx PRS, because such UEs will never receive an SCI, but we still need also the Tx parameters in SLPP in both cases.

ZTE think if the UE receives SCI after transmitting, it can always transmit it again; they see no restriction that if the UE sends according to SLPP it cannot send it according to a later SCI, so they think the current spec is OK. They agree with Qualcomm’s scenario, but they think it can be done without an explicit flag.

Samsung think without the flag, the UE would always transmit the SL-PRS at least once, even though it might not be needed. They think the 1-bit indication can just be used to indicate “transmit now” or not, with no restriction on future transmission.

vivo think we already have an agreement that the SL-PRS transmission parameters are provided by upper layer by implementation, so they do not see that the provision of transmission parameters is relevant to this scenario.

Intel understand that the server should provide bandwidth, delay budget, etc. to allow the UE to select resources properly, and the anchor does not know what positioning method is in use, so the Tx UE should be informed of when to transmit. ZTE think the anchor does know based on which IEs were used to configure it. Intel indicate we did not structure the assistance data in this way with different IEs per positioning method.

ZTE checked the assistance data and understand that the Tx UE can distinguish which method the assistance data are being configured for. Intel indicate that the assistance data found by ZTE are location calculation assistance for the Rx UE.

Agreement:

Introduce a new field in the ProvideAssistanceData to indicate to the Tx UE to transmit SL-PRS once resource is available. If this field is absent, the UE can store the SL-PRS-TxInfo for future SL-PRS transmission (e.g., triggered by SCI from a peer UE).

Rapp025

[R2-2404518](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404518%20TP%20on%20error%20messaging%20in%20SLPP.doc) Text proposal on error messaging in SLPP Lenovo discussion Rel-18 NR\_pos\_enh2

Proposal 1: Agree on the initial set of SL-specific error cause values as listed in Table 1.

[Chair’s note: Error causes as follows:

General::undefined

Measurements::notAllRequestedMeasurementsPossible

Assistance data::assistanceDataMissing

Assistance data::assistanceDataNotSupportedByServer

Assistance data::assistanceDataSupportedButCurrentlyNotAvailableByServer

Assistance data::notAllRequestedAssistanceDataAvailableByServer

]

Discussion:

Qualcomm think it is not clear why we need an explicit error for “not all measurements possible”, but they acknowledge we have it in LPP and we need a baseline set of values.

OPPO wonder if we need to capture something in stage 2. Lenovo think we could do it in the stage 3 field descriptions as in LPP.

Intel understand we only have field descriptions for fields where they are needed, and if the errors are already clear we don’t need them.

Nokia generally agree with Qualcomm and think we need a motivation for the codes and clear behaviour for what will happen when we receive them. Lenovo think if we do not agree an initial set we will just have a generic undefined error.

OPPO agree with Nokia.

Intel think some of the causes are not different from the device perspective, e.g., AD “not available” vs. “not supported”. They think we should have different causes when the UE behaviour is different.

Proposal 2: Discuss and decide on the option for introducing SL-specific error cause values in SLPP. [Common vs. method-specific IEs]

Discussion:

Qualcomm would somewhat prefer method-specific, in case we have method-specific error causes later.

* [AT126][405][POS] SLPP error causes (Lenovo)

 Scope: F2F offline to converge on a list of SLPP error causes. If possible, determine whether to capture them in a common or method-specific way.

 Intended outcome: Report to CB session in R2-2405873

 Schedule: Wednesday 2024-05-22 0930-1030 in Brk3

 Deadline: Thursday 2024-05-23 1000 JST

[R2-2405873](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405873%20%5BAT126%5D%5B405%5D%5BPOS%5D%20SLPP%20error%20causes%20%28Lenovo%29.doc) Report from offline discussion [AT126][405][POS] SLPP error causes (Lenovo) Lenovo discussion Rel-18 NR\_pos\_enh2

Proposal 1: Define type of error information similar to LPP (“Option 1”). That means, an error cause value in SLPP will indicate that an error occurred at an endpoint without exposing any further information.

Proposal 2: Introduce the following error cause values: “undefined”, “notAllRequestedMeasurementsPossible”, “assistanceDataMissing” and “assistanceDataNotAvailable”.

Proposal 3: Add the new error cause values in the common SL-PRS methods ProvideLocationInformation IE and ProvideAssistanceData IE, method-specific ProvideLocationInformation IE and ProvideAssistanceData IE. TP to SLPP can be found in Annex B.

Discussion:

Lenovo clarify that a question was received about whether to extend the SL-RTT-ProvideAssistanceData (currently an empty IE) with an error cause. They understand that we should have an error container.

Intel understand that there is no reason to have an error code where there is nothing that could cause an error, and any error on SL-RTT can be reported under the common IEs.

Qualcomm agree that we do not need an error code in an empty IE (and note that the request is also empty). Lenovo are OK with not adding it in these cases. Intel confirm that the empty IEs are extensible.

Agreements:

Define type of error information similar to LPP (“Option 1”). That means, an error cause value in SLPP will indicate that an error occurred at an endpoint without exposing any further information.

Introduce the following error cause values: “undefined”, “notAllRequestedMeasurementsPossible”, “assistanceDataMissing” and “assistanceDataNotAvailable”.

Add the new error cause values in the common SL-PRS methods ProvideLocationInformation IE and ProvideAssistanceData IE, method-specific ProvideLocationInformation IE and ProvideAssistanceData IE (except for SL-RTT-ProvideAssistanceData). TP to SLPP from Annex B of R2-2405873 can be used as implementation baseline.

Rapp024

[R2-2405268](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405268.docx) Open SLPP issues Nokia discussion Rel-18

Proposal 2: RAN2 to define relative velocity with uncertainty as defined in TS 23.032 based on

- absolute value of the radial speed component,

- vector of the traversal speed component, consisting of its absolute value, azimuth and elevation

while specifying

- independent uncertainty and confidence values for each radial / traversal component parameter.

Proposal 3: Application layer ID is used to define the reference point employed for relative velocity measurements.

Proposal 4: RAN2 to adopt the text proposal associated with Proposals 2 and 3 as section 2.2b below.

Proposal 5: RAN2 to decide if to send an LS to SA2 with the request to define the traverse velocity component as a vector specified by its absolute value, azimuth and elevation.

Discussion:

Huawei think this is OK as a baseline. They wonder why/how SA2 settled on defining relative to the horizontal plane of device A.

Qualcomm think there is some confusion about the term “velocity” since the unit is degrees/second rather than m/s. They think P5 does not define transverse velocity properly in this sense.

Nokia understand that the change of direction is a 3-D vector, irrespective of specific units.

Qualcomm think we do not need the application layer ID; the reference point is always the requesting device.

Agreement:

Define relative velocity with uncertainty as defined in TS 23.032 based on

- radial velocity component,

- angular velocity components (exact representation to be discussed in CR implementation)

while specifying

- independent uncertainty and confidence values for each radial / traversal component parameter.

Details to be further discussed in SLPP CR implementation.

* [AT126][406][POS] Remaining SLPP issues (Intel)

 Scope: F2F offline to discuss remaining SLPP issues with ASN.1 impact.

 Intended outcome: Report to CB session in R2-2405874

 Schedule: Wednesday 2024-05-22 0900-0930 in Brk3

 Deadline: Thursday 2024-05-23 1000 JST

[R2-2405874](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405874_%5BAT126%5D%5B406%5D%5BPOS%5D%20Remaining%20SLPP%20issues%20%28Intel%29-03.docx) [AT126][406][POS] Remaining SLPP issues (Intel) Intel Corporation discussion Rel-18 NR\_pos\_enh2-Core

[Proposals:]

 Rapp022, update the TP (P1 in R2-2405248) to treat sl-LCS-GCS-Translation in the same way as applicationLayerID. Capture the updated changes in Rapporteur CR. The field name of SL-AoA-MeasElementPerARP-ID-Rx can be reconsidered in next meeting.

 introduce “sl-AoA-Request ENUMERATED { aoa, zoa, both },” in SL-AoA-RequestLocationInformation

 Delete the two-level structure and the applicationLayerID in SL-TOA-SignalMeasurementInformation., i.e. P3 from R2-2404612

 Rapp024 Introduce relative velocity, capture the TP P3 from R2-2405248 into Rapporteur CR for relative velocity.

 Send LS to SA2, indicate the differences between RAN2 TP on relative velocity and SA2 definition (Nokia).

Discussion:

Nokia want to clarify exactly what we are asking SA2. Intel understand that we should just describe our implementation and its differences from SA2 design and ask them to take it into account.

Qualcomm think we should tell them how we interpreted their requirements and ask if they have any comments.

 P1 multiple UE capabilities in ProvideUECapabilties of R2-2404763 is not pursued.

 Send LS to CT4 and CC SA2, indicate the maximum devices supported in SLPP is 256. Ask CT4 to take it into account in their future work (Huawei).

Discussion:

Huawei wonder exactly what we indicate. Intel think we can just say that in our specs there can be up to 256 devices.

vivo wonder if we should clarify that there may be multiple messages for a UE. Huawei think this is already supported in the CT1/CT4 specs.

 P2 of R2-2404763 on synchronization is not pursued

 positioning method for server in Metadata (R2-2404869) is not pursued.

Agreements:

Rapp022 moves to Agreed. Update the TP (P1 in R2-2405248) to treat sl-LCS-GCS-Translation in the same way as applicationLayerID. Capture the updated changes in Rapporteur CR. The field name of SL-AoA-MeasElementPerARP-ID-Rx can be reconsidered in next meeting.

Introduce “sl-AoA-Request ENUMERATED { aoa, zoa, both },” in SL-AoA-RequestLocationInformation.

Delete the two-level structure and the applicationLayerID in SL-TOA-SignalMeasurementInformation., i.e. P3 from R2-2404612.

Rapp024 moves to Agreed. Introduce relative velocity, capture the TP P3 from R2-2405248 into Rapporteur CR for relative velocity. Send LS to SA2 to indicate the agreed RAN2 TP on relative velocity, and invite SA2 to comment (Nokia).

P1 of R2-2404763 on multiple UE capabilities in ProvideUECapabilties is not pursued.

Send LS to CT4 and CC SA2, indicate the maximum devices supported in SLPP is 256. Ask CT4 to take it into account in their future work (Huawei).

P2 of R2-2404763 on synchronization is not pursued.

Positioning method for server in Metadata (R2-2404869) is not pursued.

* [Post126][415][POS] LS to SA2 on relative velocity (Nokia)

 Scope: Draft an LS to SA2 in line with the conclusion of RIL Rapp024, indicating what RAN2 have agreed on relative velocity and inviting SA2 to comment.

 Intended outcome: Approved LS in R2-2405987

 Deadline: Short (not for RP)

* [Post126][416][POS] LS to CT1/CT4 on maximum devices supported in SLPP (Huawei)

 Scope: Draft an LS to CT1/CT4, Cc: SA2, indicating our requirement in SLPP to support up to 256 devices and requesting them to take it into account.

 Intended outcome: Approved LS in R2-2405988

 Deadline: Short (not for RP)

Other contributions

[R2-2404305](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404305%20Discussion%20on%20open%20issue%20of%20SLPP%20specification.docx) Discussion on open issue of SLPP specification vivo discussion Rel-18 FS\_NR\_pos\_enh2

[R2-2404612](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404612%20Discussion%20on%20remaining%20corrections%20in%20SLPP.docx) Discussion on remaining corrections in SLPP ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2404742](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404742%20Discussion%20on%20SLPP%20relative%20velocity.doc) Discussion on SLPP relative velocity Xiaomi discussion Rel-18 NR\_pos\_enh2

[R2-2404763](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404763%20Discussion%20on%20the%20remaining%20issues%20for%20R18%20SLPP.docx) Discussion on the remaining issues for R18 SLPP Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

[R2-2404869](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404869%20Discussion%20on%20the%20necessity%20of%20including%20the%20server%20UE%20positioning%20method%20in%20the%20discovery%20message.docx) Discussion on the necessity of including the server UE positioning method in the discovery message OPPO discussion Rel-18 NR\_pos\_enh2

[R2-2405248](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405248_%28Remaining%20SLPP%20Issues%29.docx) Remaining issues for SLPP Qualcomm Incorporated discussion

[R2-2405390](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405390_Discussion%20on%20SL-PRS%20triggering%20via%20SLPP.docx) Discussion on SL-PRS Tx triggering by SLPP Samsung discussion Rel-19 NR\_pos\_enh2 Late

Withdrawn/Not available

[R2-2404710](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404710.docx) Open SLPP issues Nokia France discussion Withdrawn

### 7.2.4 LPP corrections

Impact to 37.355. A single CR with miscellaneous corrections is requested from the CR rapporteur; minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

Rapporteur CR on capabilities (endorsed after RAN2#125bis)

[R2-2404595](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404595.docx) Miscellaneous corrections on LPP for Rel-18 positioning UE capabilities Xiaomi CR Rel-18 37.355 18.1.0 0503 1 F NR\_pos\_enh2-Core R2-2403978

ToDo RILs: M001, H006, N013

Note: H006 and N013 are addressed in R2-2404433

[R2-2404510](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404510.docx) [M001] Inclusion of PRU as an LPP endpoint MediaTek Inc., Ericsson draftCR Rel-18 37.355 18.1.0 F NR\_pos\_enh2-Core

Discussion:

Samsung agree with the principle but wonder if it should go from Rel-17, since we already have the PRU concept in stage 2 there. Qualcomm think this is true but we have no stage 3 impact from PRUs in Rel-17.

Huawei think it depends on how we interpret “target device”.

Nokia think the coversheet is a bit unclear about the PRU not being positioned; it needs to determine its location somehow.

Agreement:

Paragraph on PRUs from R2-2404510 to be captured in the LPP rapporteur CR.

M001 is Agreed.

ASN.1 impact

Measurement time window (P1,P2)

Failure cause for RSCP/RSCPD measurements (P3)

Failure cause for location information (P4 first, then detailed proposals in P5/P6/P7 if agreeable; also related to R2-2404235 P1)

[R2-2405261](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405261%20LPP.docx) Removing Legacy terminology for Correction on Time Window Config and other CPP corrections and PRU Error cause Ericsson discussion Rel-18

Proposal 1 Replace supportOfLegacyMeasurementInTimeWindow by supportOfMeasurementInTimeWindowForDL-TDOA and similarly for other methods.

Proposal 2 Adopt the text proposal from section 2.2 signal which measurements are to be performed in the configured time window.

Discussion:

Nokia wonder why an explicit measurement needs to be part of the time window configuration instead of relying on the requested measurements. Ericsson wonder if it is clear that the UE is always intended to perform all requested measurements in the time window. Qualcomm understand that the Ericsson proposal would decouple the measurements in the time window from the UE capability to perform legacy measurements in the time window, and they are not sure if there is a use case for it; however, they find Ericsson’s proposal a bit safer in case a use case is found.

Qualcomm think some details are missing from the TP.

Xiaomi think the terminology can be changed, but there is no need for an explicit list.

Proposal 3 Allow UE to report failure (error cause) for RSCP, RSCPD measurements when timing estimation are unrerliable.

Discussion:

Qualcomm think this is not needed and we have no definition of “unreliable” timing. The UE will always report the measurements it is able to make, and if it cannot measure, it is clear from the report that the measurement is absent. They see a new UE requirement if we would expect it to detect the reliability of the timing, and this would be RAN4 scope.

Intel think we should not introduce a new failure cause for each measurement result; they have the same understanding as Qualcomm about the missing measurement.

Ericsson think the UE will have to take timing measurements, and it will inherently determine what positioning error it has; they think there is no point if the UE’s timing is not good enough to do phase estimation. They understand that existing DL-TDOA requirements already force the UE to do this timing evaluation.

Qualcomm understand that the UE is just reporting measurements, not resolving the integer ambiguity, and the UE should report what it can report, with whatever quality it achieves.

Nokia wonder what the LMF would do with this information.

Lenovo think the premise is that feedback may be needed when the measurement is not possible, and it would be reasonable to provide something so the LMF can declare failure of the positioning operation.

OPPO think the TDOA method also requires synchronization and the issue is not specific to CPP.

Huawei wonder if there is a clear way for the UE to make the judgement or if it would be left to UE implementation. Ericsson understand that the UE always derives timing quality, and from there it could decide whether the phase measurement is feasible to do; they are not sure if there is a corresponding RAN4 requirement.

MediaTek think we would need a definition of “unreliable” from RAN4.

Proposal 4 Allow the UE configured as a PRU and configured with the locationInformatioType locationEstimateAndMeasurementsRequired-r18 to indicate a specific error when it is able to provide location measurements but not a location.

Discussion:

Qualcomm think if the PRU omits the location in the report, it is clear that something happened and it cannot provide its location. They also think the common IEs should not be used for this error case.

Ericsson wonder if absence of the location means the UE will not report anything or report with the location absent. They can accept moving this indication outside of the common IEs.

CATT wonder if we should specify an error cause for the location estimate, and if we need to specify how the PRU provides the location. Qualcomm think there is no other choice since we use the location information for this report; the location estimate cannot be separated from the measurements.

CATT understand that the current requirement is that the PRU should provide its location, but this does not mean it should calculate its location according to the indication from the LMF. They are not sure what the LMF will use this error for. Ericsson indicate that the LMF could filter its choice of PRUs. Chair wonders if this is different from omitting the location.

CATT also think the PRU should report an error, but they think it should not be specific to the positioning method.

Ericsson think we could clarify in the field description that absence of the location indicates that the PRU could not provide it. Qualcomm think we have a statement in other places saying that information not provided means the information was not available; they could accept it here but wonder if we should start adding such comments everywhere.

Proposal 5 Agree to add a specific error to represent indications of failed location estimates from a PRU when configured with the locationInformatioType locationEstimateAndMeasurementsRequired-r18

Proposal 6 Add a specific location source for the location estimate part for the UE configured as a PRU and configured with the locationInformatioType locationEstimateAndMeasurementsRequired-r18.

Proposal 7 Agree to the text proposal in Appendix.

Agreements:

Replace the field name supportOfLegacyMeasurementInTimeWindow by supportOfMeasurementInTimeWindowForDL-TDOA and similarly for other methods.

Adopt the principle of the text proposal from section 2.2 to signal optionally which measurements are to be performed in the configured time window. Details to be checked in CR implementation.

Capture in field description that the absence of a PRU location indicates that the PRU was unable to provide it. Exact wording to be determined in CR implementation.

PFL indication for CPP

[R2-2404872](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404872%20Discussion%20on%20DL%20RSCPD%20RSCP%20measurement%20on%20single%20DL%20PFL.docx) Discussion on DL RSCPD RSCP measurement on single DL PFL OPPO discussion Rel-18 NR\_pos\_enh2

Proposal : RAN2 to discuss which of following option should be adopted:

1. LMF could configure on which PFL the UE shall perform DL RSCPD/RSCP measurement in the NR-Multi-RTT- RequestlocationInformation/NR-DL-TDOA-RequestLocationInformation message

2. UE reports the information of the PFL on which it performs the DL RSCPD/RSCP measurement in the NR-Multi-RTT- ProvideLocationInformation/NR-DL-TDOA-ProvideLocationInformation message

Discussion:

ZTE think this should be a RAN1 discussion, and they think it is not necessary because the measurement will be taken on the same PFL as the other measurements.

CATT indicate that the existing protocol already allows the LMF to tell the UE which PFL to measure, and RAN1 agreed that RSCPD and RSTD should be measured on the same PFL. Huawei agree.

Xiaomi think it is needed for PRS aggregation. CATT understand CPP cannot work with carrier aggregation, and if the LMF wants the UE to perform aggregation, the LMF will not request CPP measurements.

OPPO understand that nothing stops the LMF from configuring more than one PFL and requesting RSCPD.

Nokia understand RAN1 indicated that there is no impact on reporting if the UE is supposed to use one PFL, so they think it can be left to UE implementation unless RAN1 give us a requirement.

Huawei think for CA, there are cases where it is not feasible for different carriers to be phase-synchronized, and in this case CPP would be incompatible with CA.

Ericsson think if option 1 is supported, we do not need to discuss that point further, but the broader discussion of CPP with CA is different; they understand that the view of most companies is that they are incompatible. They think the intention of the proposal is a bit unclear.

Qualcomm think deciding the compatibility is RAN1 business. Nokia have the same view and think we cannot decide anything here.

DL-AoD capability issue

[R2-2404870](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404870%20Discussion%20on%20support%20of%20bandwidth%20aggregation%20by%20the%20DL-AOD.docx) Discussion on no support of bandwidth aggregation by the DL-AOD OPPO discussion Rel-18 NR\_pos\_enh2

Proposal 1: RAN2 to agree to delete nr-DL-AoD-OnDemandPRS-ForBWA-Support-r18 IE from NR-DL-AoD-ProvideCapabilities.

Discussion:

Xiaomi think it is OK to remove.

Qualcomm wonder about the case that RSRP/RSRPP measurements would be made in aggregated form; they do not see why this is not compatible with DL-AoD.

CATT understand RAN1 do not support bandwidth aggregation for DL-AoD, so there is no need for the capability; also there is no such capability in the feature list.

ZTE agree with CATT about the state of RAN1 agreements; aggregation is supported only for timing measurements. They also wonder why this capability is connected with OD-PRS support.

Xiaomi clarify that this capability was introduced by RAN2, not from the RAN1 feature list. Huawei wonder if OD-PRS is per positioning method in any case; they think it is not specified this way.

Agreement:

Delete nr-DL-AoD-OnDemandPRS-ForBWA-Support-r18 IE from NR-DL-AoD-ProvideCapabilities.

ASN.1 impact, but may be covered by other discussions

[R2-2404235](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404235%20Discussion%20on%20the%20remaining%20LPP%20issues.docx) Discussion on the remaining LPP issues CATT discussion Rel-18 NR\_pos\_enh2

[R2-2404761](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404761%20Discussion%20on%20the%20remaining%20issues%20for%20R18%20LPP.docx) Discussion on the remaining issues for R18 LPP Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

Other documents

R2-2404613 Discussion on PRS bandwidth aggregation in LPP ZTE Corporation discussion Rel-18 NR\_pos\_enh2

[R2-2404871](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404871%20Discussion%20on%20UE%20capability%20on%20bandwith%20aggregation%20positioning.docx) Discussion on UE capability on bandwith aggregation positioning OPPO discussion Rel-18 NR\_pos\_enh2

Proposal 1: RAN2 to agree to delete the words “within a MG” from both of the IE names and the field descriptions for the IEs prs-BWA-TwoContiguousIntrabandInMG-RRC-IdleAndInactive and prs-BWA-ThreeContiguousIntrabandInMG-RRC-IdleAndInactive.

Discussion:

Lenovo think it is OK for the field names but not the IE names, because they are also used for common capabilities. Xiaomi have the same understanding.

Qualcomm wonder if the reporting really is intended to be the same in connected and idle/inactive. Xiaomi confirm this is the intention; Lenovo have the same understanding but clarify that the values can be set differently for different RRC states.

Xiaomi think we could restructure the IEs to have separate versions for the different states.

Agreement:

Delete the words “within a MG” from the field descriptions for the IEs prs-BWA-TwoContiguousIntrabandInMG-RRC-IdleAndInactive and prs-BWA-ThreeContiguousIntrabandInMG-RRC-IdleAndInactive.

### 7.2.5 RRC corrections

Impact to 38.331, except for UE capabilities. A single CR with miscellaneous corrections is requested from the CR rapporteur; minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

G117 (status unclear)

[R2-2405323](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405323.docx) Correction on srs-PosRRC-Inactive handling Google CR Rel-18 38.331 18.1.0 4822 - F NR\_pos\_enh-Core

Discussion:

Ericsson think this is a bit a matter of taste, and since it has no ASN.1 impact we could come back and follow what is decided for other WIs.

Google understand that the conclusion was that we only need to include explicit handling for specific important cases, and they think we could evaluate whether this is one of the important cases.

Huawei think there is value in the handling of the legacy vs. Rel-18 fields, but they think it could be left for the rapporteur to decide.

Intel understand that we have no autonomous release for Rel-18, so the changes as drafted are not correct. They understand that Rel-17 is a different behaviour.

Agreements:

G117 is marked as Rejected.

Rapporteur to consider in CR implementation how much explicit handling of release branches is useful to have.

Rel-17 behaviour can be discussed separately based on contributions if needed.

Additional RILs (closed but with contributions)

[R2-2404306](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404306%20%5BV800%5D%20Correction%20on%20UE%20not%20supporting%20NR%20sidelink%20positioning%20in%20the%20limited%20service%20state.docx) [V800] Correction on UE not supporting NR sidelink positioning in limited service state vivo draftCR Rel-18 38.331 18.1.0 F FS\_NR\_pos\_enh2

* Endorsed (to be merged into rapporteur CR)

Discussion:

vivo clarify that other instances of “positioning” should be removed in the same bullet.

[R2-2404764](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404764%20Discussion%20on%20the%20remaining%20issues%20for%20R18%20RRC%20%5BH905%5D%5BH920-921%5D.docx) Discussion on the remaining issues for R18 RRC [H905][H920-921] Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

Proposal2: The application of the pre-configured positioning SRS is not dependent on the pre-configuration set to "setup". [H920] Adopt the TP below:

Proposal3: Clarify in the cell selection/reselection that the srs-PosConfigValidityArea corresponds to the SRS configuration being applied for the on-going positioning SRS transmission. [H921] Adopt the TP below

Discussion:

ZTE think for P2, in Rel-17 we have a NOTE saying that the network always provides full SRS configuration to the UE in RRCRelease, and they think the same principle applies here: Only when the network configures SRS can the UE apply the preconfiguration. So they think the current form of the spec is good.

Samsung understand Huawei’s concern and proposed a wording change previously; they are OK with the change if the current wording is still considered confusing.

Huawei clarify that this is not about delta configuration but just when the UE should send the activation request.

Intel think there are two issues being discussed, when the configuration can be applied and when the SRS can be activated. They understand that Huawei want to avoid linking the two, so they see the proposal as valid.

Ericsson think the UE should store the configuration when provided, and for the other part, the UE should only start transmitting when an event occurs; they are not sure how best to capture this, e.g., “if the UE has a stored configuration and an event from the upper layer arrives”.

ZTE, Intel, and Huawei think the new bullet can be at level 1, so it does not depend on including the suspendConfig in this RRCRelease.

Proposal4: Add the RRC fields for R18 enhancements for positioning SRS transmission in RRC\_INACTIVE in R18 into a container. Adopt the TP in Annex A.

Discussion:

Huawei understand that this aligns with other features in RRC\_INACTIVE.

Ericsson do not see that any new configuration is needed in Rel-18 over Rel-17 in this respect, but maybe some offline time is needed.

Huawei understand that the new field in the NCE for Rel-18 is not in a container.

Intel agree with the proposal.

Proposal5: Add the RRC fields for R18 enhancements for positioning SRS transmission in RRC\_INACITVE in R18 in the internode message HandoverPreparationInformation

Discussion:

Ericsson think RAN3 are also discussing this and have a well-defined procedure for the context transfer; they do not see why there should be RAN2 impact. They also note that the handover preparation is not used in RRC\_INACTIVE.

Huawei think it is analogous to other contents of the INMs: RAN3 does not have visibility to our enhancements. However, they agree that there is related RAN3 discussion.

ZTE think we left this to RAN3 last meeting and we should not add something in RAN2 at this stage.

Intel think we could take the issue as homework. Huawei think it would be safest to add the field now and we can dummify later if needed. Ericsson think the extension marker will be available.

Samsung think we could come back at the end of the meeting.

Agreements:

The application of the pre-configured positioning SRS is not dependent on the pre-configuration set to "setup". Details of implementation to be discussed in rapporteur CR (no ASN.1 impact).

H920 is set to Agreed [rapporteur to confirm if a change in the RIL is needed].

Add the RRC fields for R18 enhancements for positioning SRS transmission in RRC\_INACTIVE in R18 into a container. [Chair’s note: This agreement is superseded by the agreements under R2-2405875.]

* [AT126][407][POS] Rel-18 SRSp enhancement fields in INMs (Huawei)

 Scope: Monitor RAN3 progress related to P5 of R2-2404764 and converge company views where possible.

 Intended outcome: Report to CB session in R2-2405875

 Deadline: Thursday 2024-05-23 1000 JST

[R2-2405875](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405875%20Summary%20for%20%5BAT126%5D%5B407%5D%5BPOS%5D%20Rel-18%20SRSp%20enhancement%20fields%20in%20INMs%20%28Huawei%29_v05_Rapp.docx) Summary for [AT126][407][POS] Rel-18 SRSp enhancement fields in INMs (Huawei) Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

Proposal1: Confirm that RAN2 discusses the issue of whether to include R18 LPHAP SRS configuration in INM for RRC\_INACTIVE in RAN2.

Porposal2: SRS configurations for LPHAP introduced in RRCRelease message in R18 is added to the internode message HandoverPreparationInformation.

Discussion:

Huawei indicate that RAN3 had an offline that concluded to leave the issue to RAN2, but it is not an official decision yet.

Nokia understand that the RAN3 offline produced a proposed WF, and they think it is a bit strange that RAN3 pass it back to RAN2.

Huawei think it is a RAN2 feature and should be transparent to RAN3; they understand that the functionality is not controversial and we just need to decide where to include it.

ZTE agree that the issue is in RAN2, but they see the spec impact in RAN3 because it is gNB-gNB signalling.

Ericsson think the container in handover is target to serving, and this goes in the opposite direction. So they agree with ZTE that Xn may be better.

CATT agree that the issue should be fixed and there are RAN2 and RAN3 potential solutions. They understand that there was a majority in the email discussion for the RAN2 solution, and RAN3 can move ahead once we agree.

Samsung also think that preconfiguration forwarding from the last to serving gNB is essential for completion; we left it to RAN3 last meeting, and RAN3 are now sending it back to us. Samsung support using the handover preparation.

Nokia wonder if this is not exchanged between gNBs, if it would be OAM to ensure preconfiguration is consistent across gNBs. They also wonder if RAN3 will accept RAN2 conclusion if we ask for an Xn-based solution.

Intel understand that the target gNB needs to learn the configuration from the source gNB, so an OAM solution would not fully address the issue; on the solution itself, they think similar behaviours historically have used the INMs.

Huawei indicate that the INM already exists, and since this is a Uu configuration they think it makes sense in the container.

Agreements:

Confirm that RAN2 discusses the issue of whether to include R18 LPHAP SRS configuration in INM for RRC\_INACTIVE in RAN2.

SRS preconfigurations for LPHAP introduced in RRCRelease message in R18 is added to the internode message HandoverPreparationInformation.

ASN.1 impact

[R2-2404614](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404614%20Discussion%20on%20remaining%20corrections%20in%20RRC.docx) Discussion on remaining corrections in RRC ZTE Corporation discussion Rel-18 NR\_pos\_enh2

Proposal 1: RAN2 to rename srs-PosRRC-Inactive-v1800 to avoid conflict with srs-PosRRC-Inactive-r17.

Discussion:

Huawei understand that the Rel-18 field is an NCE. Intel point out that the Rel-17 and Rel-18 behaviours are different, so they think we should change the name.

Proposal 2: Add ‘sl-TxPoolSelectedNormal, sl-TxPoolScheduling, sl-TxPoolExceptional’ in section 5.3.5.14 to cover the case that UE can use shared pool to transmit SL-PRS. Adopt the corresponding TP.

Proposal 3: Add in the field description in sl-PRS-ResourcesSharedSL-PRS-RP-r18 that ‘The UE can use the resource pool to transmit or receive SL-PRS only if this field is present’, in order to distinguish legacy SL data pool and shared pool. Adopt the corresponding TP.

Proposal 4: Deleting sl-PRS-starting-symbol from SL-ResourcePool. Adopt the corresponding TP.

Discussion:

Ericsson wonder if this is related to the parameter list. ZTE indicate it is not.

Huawei think the change is reasonable.

Proposal 5: Add a new IE to include the RAN1 requested DCI formats. Take the example TP.

Proposal 6: Add a condition tag for SRS-PosRRC-AggBW-InactiveConfigList-r18 that ’This field is optionally present if SRS-PosRRC-InactiveConfig-r17 is included; otherwise it is not present’. Adopt the corresponding TP.

Proposal 7: Change the size of SRS-PosResourceSetLinkedForAggBWList-r18 from ‘SIZE(1..maxNrOfLinkedSRS-PosResourceSet-r18)’ to ‘SIZE(2..maxNrOfLinkedSRS-PosResourceSet-r18)’.

Agreements:

Delete sl-PRS-starting-symbol from SL-ResourcePool.

Add in the field description for SRS-PosRRC-AggBW-InactiveConfigList-r18 that the field is included only if SRS-PosRRC-InactiveConfig-r17 is configured. Wording to be polished in CR implementation.

Change the size of SRS-PosResourceSetLinkedForAggBWList-r18 from ‘SIZE(1..maxNrOfLinkedSRS-PosResourceSet-r18)’ to ‘SIZE(2..maxNrOfLinkedSRS-PosResourceSet-r18)’.

Rename srs-PosRRC-Inactive-v1800 to srs-PosRRC-InactiveBW-AggFH-r18 avoid conflict with srs-PosRRC-Inactive-r17.

Add ‘sl-TxPoolSelectedNormal, sl-TxPoolScheduling, sl-TxPoolExceptional’ in section 5.3.5.14 to cover the case that UE can use shared pool to transmit SL-PRS.

Add in the field description in sl-PRS-ResourcesSharedSL-PRS-RP-r18 that ‘The UE can use the resource pool to transmit or receive SL-PRS only if this field is present’, in order to distinguish legacy SL data pool and shared pool.

[R2-2405249](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405249_%28RRC%20SL%20DCI%20CBR%29.docx) Addition of SL DCI Formats and SL PRS CBR measurement Results Qualcomm Incorporated discussion

* Noted

Other documents

R2-2404236 Activation of SRS when configured with validity area CATT discussion Rel-18 NR\_pos\_enh2

Proposal 1: The activation of srs-PosRRC-InactiveValidityAreaPreConfigList should be triggered by RRC layer rather than upper layer, and the access category should also be determined by RRC layer because upper layer does not know whether the UE has valid SRS and whether the SRS type is srs-PosRRC-InactiveValidityAreaPreConfigList or srs-PosRRC-InactiveValidityAreaNonPreConfig or R17 SRS configuration. Adopt the TP in Annex with name P1.

Discussion:

Huawei think this is an internal UE behaviour issue. Intel agree; they understand that the need for SRS is known by upper layers, but the upper layers do not know if there is an SRS configuration, but the inter-layer interaction should be able to do something without specification impact.

CATT think we should specify something that is possible for the activating layer to do.

Intel see that we only need to specify something if it is an interaction between nodes.

MediaTek agree with Intel that this is internal. Nokia also agree and think we should not get too detailed.

Proposal 2: For both srs-PosRRC-InactiveValidityAreaPreConfigList and srs-PosRRC-InactiveValidityAreaNonPreConfig, the transmission of SP SRS should be activated by MAC CE as legacy. There is no protocol impact.

Discussion:

Qualcomm understand that RAN3 are not dependent on this decision and they are discussing only the aggregated activation, which we will discuss under the MAC topic.

Huawei have the same view as Qualcomm and think this discussion can be triggered from the MAC email discussion. ZTE understand that the MAC CEs are different and this discussion is about activation of the legacy SP-SRS.

Huawei see a connection to aggregation and think the issue is the same for single and multiple carriers. Qualcomm also see it as the same issue.

Xiaomi think we could confirm that Rel-18 SP-SRS (aggregated or not) is activated by the MAC CE.

Ericsson understand the point is whether the validity area SP-SRS can be activated by the legacy MAC CE.

Working assumption:

For both srs-PosRRC-InactiveValidityAreaPreConfigList and srs-PosRRC-InactiveValidityAreaNonPreConfig (non-aggregated cases), the transmission of SP SRS is activated by MAC CE as legacy. Aggregated cases to be discussed under the MAC AI.

Proposal 3: For mechanisms of non-preconfigure SRS, if SP SRS is configured, the resume cause srs-PosConfigOrActivationReq can be used for RRC request activating the SP SRS. Adopt the TP in Annex with name P3.

Discussion:

ZTE think it would introduce a new purpose for sending Msg3 and it is not needed.

CATT understand that we have not discussed how to do the activation in this case.

Qualcomm wonder what the spec impact would be. CATT think the RRC procedure needs to specify that the resume cause is set in the resume request for this case.

Intel think we do not need to specify this; we already have a way to notify the gNB that the UE has moved to a new area, and the gNB may then decide to activate. CATT understand that for the SP case the UE needs to get network confirmation that it can use the SRS.

Qualcomm indicate that the RRC procedure does not distinguish the SRS type.

Huawei agree with others that there is no difference between the periodic and SP cases for this purpose; for SP, the gNB can send the MAC CE along with Msg4.

[R2-2405103](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405103.doc) Discussion on the activation of the semi-persistent SRS of preconfigured SRS Xiaomi discussion

### 7.2.6 MAC corrections

Impact to 38.321. A single CR with miscellaneous corrections is requested from the CR rapporteur; minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

Including outcome of [Post125bis][401][POS] Aggregated SP-SRS activation/deactivation MAC CE (ZTE)

Rapporteur CR (endorsed after RAN2#125bis)

[R2-2404762](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404762%20Rapporteur%20MAC%20CR%20for%20R18%20positioning.docx) Rapporteur MAC CR for R18 positioning Huawei, HiSilicon CR Rel-18 38.321 18.1.0 1844 - F NR\_pos\_enh2

Email discussion report

R2-2404615 Report of [Post125bis][401][POS] Aggregated SP-SRS activation deactivation MAC CE ZTE Corporation discussion Rel-18 NR\_pos\_enh2

Discussion:

ZTE think we should simplify the discussion by focussing only on the Rel-18 BW aggregation feature.

Easy proposal:

Proposal 1: One MAC CE can activate/deactivate only one aggregated combination within 32 aggregated combinations. (5/5)

proposal 2: Introduce a 5 bit field for aggregated combination in the new MAC CE. (5/5)

Proposal 3: Include the aggregation indication in the new MAC CE, where the aggregation indication is to activate/deactivate specific carriers within each aggregated combination.(5/5)

Proposal 8: The current designed SRS BW aggregation MAC CE can be used for RRC\_CONNECTED. Wait for RAN1’s reply LS to decide whether there should be a change for RRC\_INACTIVE. (5/5)

Discussion:

ZTE indicate that the RAN1 LS calls for 16 combinations for RRC\_INACTIVE, so they think the same MAC CE can be used.

Agreements:

One MAC CE can activate/deactivate only one aggregated combination within 32 aggregated combinations.

Introduce a 5 bit field for aggregated combination in the new MAC CE.

Include the aggregation indication in the new MAC CE, where the aggregation indication is to activate/deactivate specific carriers within each aggregated combination.

The currently designed SRS BW aggregation MAC CE can be used for RRC\_CONNECTED and RRC\_INACTIVE.

Need discussion:

Proposal 4: The aggregation indication in the MAC CE is 3 bits, in order to indicate the following conditions:

 1 carrier out of a 2-carrier-RRC-linkage;

 2 carriers out of a 2-carrier-RRC-linkage;

 1 carrier out of a 3-carrier-RRC-linkage;

 2 carriers out of a 3-carrier-RRC-linkage;

 3 carriers out of a 3-carrier-RRC-linkage.

Discussion:

Qualcomm agree with the proposal but wonder from the RRC configuration how the UE will know which configuration indication corresponds to which carrier. ZTE understand that in RRC\_CONNECTED, each combination contains the serving cell ID, and in RRC\_INACTIVE it contains a carrier parameter. Qualcomm think this means the UE needs to sort the list of combinations to know which entry in the list corresponds to which carrier.

Huawei wonder how to downselect one carrier out of three carriers with 3 bits. ZTE think it is just a bitmap. Qualcomm think this is fine but wonder what defines which carrier in the combination is bit 1/bit 2/bit 3.

Qualcomm think the structure can indicate a carrier unambiguously if there is a nested sequence in RRC. ZTE think there is an order already; the first 5 bits indicate the combination and the 3 bits correspond to the carriers that were indicated for that combination.

Ericsson indicate that there is a sequence of up to three carriers in the RRC signalling. ZTE think the sequence of bits in the MAC CE can align with the order of this sequence in the RRC. Ericsson think there is some alignment work needed in RRC.

Agreement:

The aggregation indication in the MAC CE is 3 bits, in order to indicate the following conditions:

 1 carrier out of a 2-carrier-RRC-linkage;

 2 carriers out of a 2-carrier-RRC-linkage;

 1 carrier out of a 3-carrier-RRC-linkage;

 2 carriers out of a 3-carrier-RRC-linkage;

 3 carriers out of a 3-carrier-RRC-linkage.

Aggregation structure will be reviewed in the RRC CR to make sure the three bits can map to a sequence of carriers in the combination as signalled in the RRC.

Proposal 5: The new MAC CE does not contain a A/D field, a 3 bit bitmap can indicate the activation or deactivation of the corresponding carriers, i.e., using ‘1’ as activation or ‘0’ as deactivation.

Discussion:

Qualcomm wonder if it works, in terms of a bit set to 0 meaning that the UE has to deactivate a carrier that may not have been previously activated. ZTE think this should be OK, but we may need to check the language.

Agreement:

The new MAC CE does not contain a A/D field separate from the 3-bit activation indication; the bitmap indicates the activation or deactivation of the corresponding carriers, i.e., using ‘1’ as activation or ‘0’ as deactivation. Deactivation is idempotent, i.e., deactivating an already deactivated carrier leaves it still in deactivated state.

Proposal 6: RAN2 to adopt up to 16 Spatial Relation for Resource IDi fields in the new MAC CE.

Discussion:

Huawei think the proposal is fine, but the more important issue is the related RRC configuration; there can be 16 resources within a resource set, and it might be easier to have the RRC handle the aggregation.

ZTE indicate this is analogous to PRS aggregation. They think the issue raised by Huawei is network implementation; the network will always put the aggregated resources in an order, and they do not see any spec impact to manage it.

Huawei think that there is a condition in the RAN1 spec on which resources can be aggregated, and there should be guidance in the RRC spec that the network does not aggregate resources that violate this condition. Huawei and Qualcomm understand that the UE should not need to check the condition.

ZTE think even in aggregated resource sets there can be non-aggregated resources, and there is no resource-level linkage indicated in RRC, so the UE needs to determine which resources can be aggregated. Huawei find this model unnatural and it is not clear how the spatial relation should be handled.

Ericsson want to understand if Huawei are proposing a new spatial relation for the aggregated carriers, or if it is field description impact only. Huawei think we can reuse the Rel-16 definition of the spatial relation, but the mapping from the spatial relation to the resource is not clear.

ZTE understand we could constrain the network to aggregate the resources in order, or we could reuse the Rel-17 MAC CE exactly and the UE knows the aggregated resource ID naturally. Qualcomm understand the UE should not be required to check this, and they think this is why the aggregation is on resource set level.

Huawei think the UE should not need to determine anything when it transmits SRS; it should not need to check if the aggregated resources satisfy the RAN1 condition but just follow the network configuration. ZTE agree with this as stated.

Ericsson would like to see a TP from Huawei for the field description, and they think we can continue fine-tuning the field description after the freeze since there is no ASN.1 impact.

CATT think in the legacy MAC CE, the gNB can change the spatial relation, but here the RRC configures the spatial relation to the UE on resource set level. They think if the gNB can change the spatial relation for a resource, the UE should be able to interpret it and change the aggregation status. ZTE think for this reason, the UE will have to determine which resources are aggregated based on the current configuration, and they think this was RAN1 intention.

Proposal 7: In the IE description of Spatial Relation for Resource IDi field, clarify that the SRS resource ID of the spatial relation comes from the first linked SRS resource set in this MAC CE. Other Spatial Relation for Resource IDi field design should remain as legacy.

Discussion:

ZTE intend to indicate the resource ID in the spatial relation field.

Qualcomm checked the RAN1 spec and think it is consistent with ZTE’s view. Huawei think the network configuration should ensure that the requirement cannot be violated.

Ericsson think this does not affect the design of the MAC CE.

Huawei interpret the RAN1 requirement as a constraint on the network.

Agreements:

Adopt up to 16 Spatial Relation for Resource IDi fields in the new MAC CE.

In the IE description of Spatial Relation for Resource IDi field, clarify that the SRS resource ID of the spatial relation comes from the first linked SRS resource set in this MAC CE. Other Spatial Relation for Resource IDi field design should remain as legacy.

The UE is expected to determine which resources can be aggregated based on the RRC configuration and the criteria defined by RAN1. This decision can be revisited based on contributions to determine if the expected UE behaviour is possible to simplify.

Other documents

[R2-2404741](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404741%20Discussion%20on%20positioning%20MAC%20open%20issues.doc) Discussion on SL positioning MAC open issues Xiaomi discussion Rel-18 NR\_pos\_enh2

Proposal 1 RAN2 to adopt the TP for LCP for SL-PRS (TP is provided in the document).

Proposal 2 To determine whether the SL grant is applicable for the transmission of the pending SL-PRS, the following condition is considered(TP is provided in the document):

- whether the bandwidth meets the SL-PRS requirement;

- whether the remaining delay budget of the SL-PRS can be met.

Proposal 3 For mode 2 resource allocation, the selected resource pool should meet the bandwidth requirement of SL-PRS(TP is provided in the document).

[R2-2404767](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404767%20Discussion%20on%20the%20remaining%20isues%20for%20MAC%20for%20R18%20POS.docx) Discussion on the remaining isues for MAC for R18 POS Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

Proposal1: Configure the same number of SRS resources for the aggregated SRS resource sets from different carriers and indicate the same number of spatial relations in the SP posSRS activation/deactivation MAC CE.

Proposal2: Confirm that the current spec already supports R18 RSRP-based TA validation for SRS positioning validity area and SRS bandwidth aggregation working together in RRC\_INACTIVE state. No spec impacts are needed

Discussion:

Huawei think P2 can be confirmed.

Agreement:

Confirm that the current spec already supports R18 RSRP-based TA validation for SRS positioning validity area and SRS bandwidth aggregation working together in RRC\_INACTIVE state. No spec impacts are needed\.

[R2-2405260](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405260%20MAC.docx) Addressing MAC open issues Ericsson discussion Rel-18

Proposal 1 5-bits are used for bandwidth request for SL-PRS aperidoc transmission.

Proposal 2 Allow peer UE to provide the priority, but if peer UE does not provide then only UE upper layers may select one.

Proposal 3 The priority and SL-PRS delay is determined based upon positioning QoS and is provided by NW node LMF for LMF involved cases.

Proposal 4 Add one octet with 3 Reserved bits and 5 bits to point out which out of 32 combinations for bandwidth aggregation is to be activated in the DL MAC CE for SRS carrier aggregation.

[R2-2405267](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405267.docx) Miscellaneous MAC issues Nokia discussion Rel-18

Proposal 1: If SL PRS transmission priority is not determined by own upper layers or not provided to them by explicit SLPP signaling, the lowest priority is selected by default to prevent accidental / malicious priority inflation and ensure worst-case compliance with priorities of other session members.

Proposal 2: RAN2 to consider the adoption of higher default priority in case SL PRS transmissions with narrower bandwidth, eg less than 50% of the resource pool bandwidth.

[R2-2405420](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CDocs%5CR2-2405420%20.zip) Corrections for SL-PRS transmission and reception ASUSTeK discussion Rel-18 NR\_pos\_enh2

* Noted

Proposal 1: Confirm that SL-PRS in shared resource pool should be always multiplexed with SL MAC PDU (PSSCH).

Proposal 2: (Option 1) In shared resource pool, Tx UE continues to transmit SL-PRS with the ACKed SL MAC PDU using the provided multiple resources until the maximum number of SL-PRS transmissions.

Discussion:

Huawei indicate that we agreed on SL-PRS transmission without MAC PDU for the case that the UE would otherwise have to wait for data forever.

ZTE understand that it should be possible to transmit SL-PRS without data bits and think P2 is correct.

ASUSTeK indicate that their understanding is that in shared pool the SL-PRS should always be multiplexed with data bits/padding bits.

vivo think this discussion is about P1.

OPPO think P2 is an optimization, and in the case that a MAC PDU has been acked, they think the retransmission should be avoided.

Huawei are not sure of the intention for P2, but they think the HARQ buffer could be flushed when the PSSCH is acked; however, they do not see that this requires a change from the current spec. They understand that the 2-stage SCI would still be transmitted but without the data.

vivo understand the intention of P2 is that if the peer UE of the Tx UE requested SL-PRS multiple times, and if there is no SL MAC PDU pending, it provides a way to transmit the SL-PRS.

Proposal 3: In shared resource pool, when Tx UE transmits SL-PRS, Rx UE should keep active for receiving the SL-PRS.

Proposal 4: If the higher layer triggers SL-PRS transmission of the peer UE, UE should set the SL-PRS request to request.

Proposal 5: Following RAN1 design, UE shall set the SL-PRS request to “request” in any PSSCH / SL-PRS transmission, if requested from the higher layer, regardless of initial transmission or re-transmission.

Discussion:

Huawei think the proposal confuses the triggers from higher layer and from SCI.

Agreement:

“to the peer UE” to be changed to “of the peer UE” in accordance with the TP for P4 from R2-2405420. To be implemented in rapporteur CR.

Proposal 6: (Option 1) Add a NOTE to clarify that the selected number of HARQ retransmissions is also applied for SL-PRS retransmissions, if available.

MAC CE design (overlap with email discussion)

[R2-2405504](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405504_MAC%20CE%20for%20activation_deactivation%20of%20aggregated%20SP%20SRS%20for%20positioning.docx) MAC CE for activation/deactivation of aggregated SP SRS for positioning Samsung discussion Rel-18 NR\_pos\_enh2 Late

Withdrawn/Not available

[R2-2404714](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404714.docx) Miscellaneous MAC issues Nokia France discussion Rel-18 Withdrawn

### 7.2.7 UE capabilities

Impact to 38.306 and capability-related impact to 38.331. A single CR with miscellaneous corrections is requested from the CR rapporteur; minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

Rapporteur CRs (endorsed after RAN2#125bis)

[R2-2404623](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404623.docx) Miscellaneous corrections for Rel-18 positioning UE capabilities Xiaomi CR Rel-18 38.331 18.1.0 4772 1 F NR\_pos\_enh2-Core R2-2403971

[R2-2404624](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404624.docx) Miscellaneous corrections for Rel-18 positioning UE capabilities Xiaomi CR Rel-18 38.306 18.1.0 1090 1 F NR\_pos\_enh2-Core R2-2403972

Other documents

[R2-2404768](file:///C%3A%5C%5CUsers%5C%5Cmtk16923%5C%5CDocuments%5C%5C3GPP%20Meetings%5C%5C202405%20-%20RAN2_126%2C%20Fukuoka%5C%5CExtracts%5C%5CR2-2404768%20Discussion%20on%20the%20remaining%20issues%20for%20UE%20capability.docx%22%20%5Co%20%22C%3AUsersmtk16923Documents3GPP%20Meetings202405%20-%20RAN2_126%2C%20FukuokaExtractsR2-2404768%20Discussion%20on%20the%20remaining%20issues%20for%20UE%20capability.docx) Discussion on the remaining issues for UE capability Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

Proposal 1: Delete the NOTE3 in the feature posSRS-BWA-IndependentCA-RRC-Connected-r18 and the NOTE4 in the feature posSRS-BWA-RRC-Connected-r18 in TS 38.306.

Proposal 2: Delete the signalling for the component in a FG without candidate values in TS 38.331.

Proposal 3: Delete the “optional” for the component in a FG with candidate values in TS 38.331.

Discussion:

Huawei think P2/P3 may need more discussion from RAN1 side.

Lenovo think the NOTEs in P1 are good to have. Intel think the NOTEs are from the feature list and should be kept. On P2, Intel understand RAN1 will update and ask us to delete this signalling.

Huawei indicate that on P1, the legacy NOTE says the UE only reports a certain number of bands, but this was for Rel-16 SRS, and it is not applicable here but should be in LPP.

Lenovo think P3 is not right because of the per-band signalling structure; FR2 should be able to omit an FR1-only capability. Huawei indicate updates are expected.

Agreement:

Delete the NOTE3 in the feature posSRS-BWA-IndependentCA-RRC-Connected-r18 and the NOTE4 in the feature posSRS-BWA-RRC-Connected-r18 in TS 38.306.

[R2-2404519](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404519%20NR%20positioning%20caps%20corrections.doc) Corrections on NR positioning capability signaling Lenovo discussion Rel-18 NR\_pos\_enh2

Proposal 1: In the CRs to RRC and SLPP replace the SEQUENCE type by CHOICE type for the components 1, 2, 3 of FG 41-1-1. Furthermore, in RRC CR remove OPTIONAL for component 4.

Proposal 2: In LPP CR revise the field descriptions of reducedNumOfSampleInMeasurementWithPRS-BWA-RRC-Connected and reducedNumOfSampleInMeasurementWithPRS-BWA-RRC-IdleAndInactive to make it condition to the support of component 1 of R1 FG 41-4-1.

Proposal 3: In LPP CR fix the editorial issues in the field descriptions of posSRS-Preconfigured-RRC-InactiveInitialUL-BWP, posSRS-Preconfigured-RRC-InactiveOutsideInitialUL-BWP, posSRS-ValidityAreaRRC-InactiveInitialUL-BWP, posSRS-ValidityAreaRRC-InactiveOutsideInitialUL-BWP and posSRS-TxFH-RRC-Inactive.

Discussion:

Xiaomi think the proposals can be taken into account in the rapporteur CRs.

Agreements:

In the CRs to RRC and SLPP replace the SEQUENCE type by CHOICE type for the components 1, 2, 3 of FG 41-1-1. Furthermore, in RRC CR remove OPTIONAL for component 4.

In LPP CR revise the field descriptions of reducedNumOfSampleInMeasurementWithPRS-BWA-RRC-Connected and reducedNumOfSampleInMeasurementWithPRS-BWA-RRC-IdleAndInactive to make it condition to the support of component 1 of R1 FG 41-4-1.

In LPP CR fix the editorial issues in the field descriptions of posSRS-Preconfigured-RRC-InactiveInitialUL-BWP, posSRS-Preconfigured-RRC-InactiveOutsideInitialUL-BWP, posSRS-ValidityAreaRRC-InactiveInitialUL-BWP, posSRS-ValidityAreaRRC-InactiveOutsideInitialUL-BWP and posSRS-TxFH-RRC-Inactive.

### 7.2.8 Corrections to other specifications

Impact to any specifications not identified above.

## 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: 0TU

Tdoc Limitation: 3 tdocs

### 7.9.1 Organizational

Including incoming LSs and rapporteur inputs. CR rapporteurs are asked to continue maintaining an open issues list reflecting known issues to be handled during the maintenance phase.

Incoming LS with “take into account” action and no related document

R2-2404134 Reply LS on L2ID and user info for L2 based U2U (S2-2405379; contact: OPPO) SA2 LS in Rel-18 NR\_SL\_relay\_enh-Core To:RAN2, CT1

* Noted

Incoming LS with “take into account” action and related document

[R2-2404136](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404136_S2-2405531.docx) Reply LS on U2U relay selection (S2-2405531; contact: OPPO) SA2 LS in Rel-18 NR\_SL\_relay\_enh-Core To:RAN2 Cc:CT1

[R2-2404251](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404251%20-%20Discussion%20on%20LS%20S2-2405531.docx) Discussion on LS S2-2405531 OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1 RAN2 not pursue specification effort regarding the reply LS from SA2 in S2-2405531.

Discussion:

Nokia agree with the proposal and think the LS does not require us to change anything.

Agreement:

RAN2 will not pursue specification effort regarding the reply LS from SA2 in S2-2405531.

Rapporteur CRs (endorsed after RAN2#125bis)

[R2-2405367](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405367%20RRC%20corrections%20for%20SL%20relay_Resubmission.docx) RRC corrections for Rel-18 SL relay enhancements Huawei, HiSilicon, Ericsson, ZTE, CATT, Sharp, Lenovo, OPPO, Nokia, Apple, MediaTek, Xiaomi, Samsung, ASUSTeK CR Rel-18 38.331 18.1.0 4684 2 F NR\_SL\_relay\_enh-Core R2-2403813

[R2-2405532](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405532%20CR4774r1%20Correction%20for%20SL%20Relay%20UE%20capability.docx) Correction for SL Relay UE capability Samsung CR Rel-18 38.331 18.1.0 4774 1 F NR\_SL\_relay\_enh-Core R2-2403975

[R2-2405533](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405533%20CR1091r1%20Correction%20for%20SL%20Relay%20UE%20capability.docx) Correction for SL Relay UE capability Samsung CR Rel-18 38.306 18.1.0 1091 1 F NR\_SL\_relay\_enh-Core R2-2403976

* [Post126][401][Relay] Rel-18 relay RRC CR (Huawei)

 Scope: Update the CR in R2-2405367 in line with decisions of this meeting.

 Intended outcome: Agreed CR in R2-2405877

 Deadline: Short (for RP)

* [Post126][402][Relay] Rel-18 relay capability CRs (Samsung)

 Scope: Update the CRs in R2-2405532 and R2-2405533 in line with decisions of this meeting.

 Intended outcome: Endorsed CRs in R2-2405878 (38.331) and R2-2405879 (38.306)

 Deadline: Very short (for merge into mega CRs)

* [Post126][403][Relay] Rel-18 relay stage 2 CR (LG)

 Scope: Develop and check a relay CR to 38.300 in line with decisions of this meeting, taking the endorsed CR from RAN2#125bis in R2-2403974 as baseline.

 Intended outcome: Agreed CR in R2-2405880

 Deadline: Short (for RP)

* [Post126][404][Relay] Rel-18 relay SRAP CR (OPPO)

 Scope: Update the CR in R2-2404247 in line with decisions of this meeting.

 Intended outcome: Agreed CR in R2-2405881

 Deadline: Short (for RP)

* [Post126][405][Relay] Rel-18 relay PDCP CR (InterDigital)

 Scope: Update the CR in R2-2405856 in line with decisions of this meeting.

 Intended outcome: Agreed CR in R2-2405882

 Deadline: Short (for RP)

Agreement:

The Rel-18 ASN.1 for the relay enhancements feature is considered ready to freeze (upon conclusion of the CR implementation discussion).

### 7.9.2 Stage 2 corrections

Impact to 38.300. A single CR with miscellaneous corrections is requested from the CR rapporteur. Minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

R2-2404254 Discussion on stage-2 corrections OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1 In clause 16.21.1, clarify that “For the indirect path, both L2 and L3 MP Relay architectures are supported for MP Relay using PC5 interface, and only L2 MP Relay architecture is supported for MP Relay using N3C interface.”.

Proposal 2 In clause 16.21.3.1, rewording the RRCRconfiguration transmission procedure in step-4 to make it clear that DL non-split SRB1 on indirect path only is not supported.

Discussion:

Huawei think P2 is no longer needed after the post-meeting discussion after RAN2#125bis. ZTE agree with Huawei.

Agreement:

In clause 16.21.1, clarify that “For the indirect path, both L2 and L3 MP Relay architectures are supported for MP Relay using PC5 interface, and only L2 MP Relay architecture is supported for MP Relay using N3C interface.”

[R2-2404326](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404326%20Candidate%20MP%20Relay%20UEs%20Reporting%20for%20N3C%20Remote%20UE.docx) Candidate MP Relay UEs Reporting for N3C Remote UE CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1: In 38.300, clarify the remote UE reports C-RNTI(s) of candidate relay UE(s) to gNB via the UEAssistanceInformation message for Multi-Path Scenario 2 in case of indirect path addition on top of direct path.

Discussion:

LG think the change is aligned with the current RRC CR.

Agreement:

In 38.300, clarify the remote UE reports C-RNTI(s) of candidate relay UE(s) to gNB via the UEAssistanceInformation message for Multi-Path Scenario 2 in case of indirect path addition on top of direct path.

### 7.9.3 RRC corrections

Impact to 38.331, except for capability-related issues (see agenda item 7.9.7). A single CR with miscellaneous corrections is requested from the CR rapporteur. Minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues where no clear conclusion was reached in [Post125][417] can be discussed based on contributions.

RIL list

[Chair’s note: Per offline discussion during the meeting, K008 should be ToDo]

[R2-2405369](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CDocs%5CR2-2405369.zip) RIL list for SL relay Huawei, HiSilicon report Rel-18 NR\_SL\_relay\_enh-Core

Agreements:

K008 is ToDo (subject to later decisions this meeting).

Other PropAgree/PropReject RILs from R2-2405369 are confirmed as Agreed/Rejected respectively.

ToDoRILs: N122, B109, O437, K008

[Chair’s note: O437 is expected to be handled under the capability agenda item]

[R2-2404803](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404803%20%5BB109%5D%20sidelink%20RRC%20reconfiguration%20failure%20for%20U2U%20v1.0.doc) [B109]Sidelink RRC reconfiguration failure for U2U Lenovo discussion Rel-18

Proposal 1: A U2U Relay UE transmits NotificationMessageSidelink message including an indication type to source remote UE upon reception of RRCReconfigurationFailureSidelink from target remote UE.

Discussion:

OPPO think we have discussed the issue before, and they do not think the reconfiguration failure needs to trigger relay reselection; they see it as different from the case in Rel-16 with SUI because the network is not involved here and the reconfiguration did not come from the source remote UE.

LG think the source remote UE knows the state of the second link, and to OPPO’s comment, they think if the previous configuration is valid there could be a fallback, but if it happens in the first reconfiguration they are not sure what happens.

Qualcomm understand that if there is no valid configuration in the second hop, the relay UE could reconfigure the RLC channel on the first hop, but they are not sure if the spec currently allows this.

Lenovo think the relay might be able to reconfigure the channel, but they doubt if the performance is good enough. Qualcomm think the relay can just release the first-hop configuration.

Huawei agree with OPPO and Qualcomm; they think if the reconfiguration fails on the second hop, the relay can try to reconfigure the second hop, then give up and release the link if it fails repeatedly, and the existing reselection trigger will be initiated.

ZTE think the source remote UE should be able to learn the status of the second hop and decide whether to reselect to another relay, so they support the proposal.

Lenovo think if Huawei’s comment is correct, we would not need the Rel-16 handling for reconfiguration failure. Huawei mean that the relay UE should not skip the existing reporting, but in the Rel-16 case, if the network is involved it should know about the failure, and in idle/inactive the relay can retry by itself.

Ericsson understood the intention was to let the source remote UE know that something is wrong with the second leg so it can trigger reselection, but they think it is already possible to do that by detecting the problem in upper layers, either with connection failure or with QoS failure. So they do not see the need for a new mechanism.

Agreement:

B109 moves to Rejected.

[R2-2405458](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405458%20%5BN122%5D%20and%20capability%20issue.docx) [N122] and capability issue Nokia discussion NR\_SL\_relay\_enh-Core

Proposal 1: No capability is introduced to indicate that the UE supports only one path in UL while two paths in DL for MP split RB.

Discussion:

Qualcomm think with the SRB, the intention was to enable DL-only duplication for a UE that does not support UL duplication, and this is why we have the capability as it is. So they think the existing capability makes sense.

Nokia think RAN3 have not discussed the UL split, only DL split, and without RAN3 input they see no need for the capability. From the network perspective the simplification of not having it is a benefit. Qualcomm clarify that RAN3 discussed it in the context of DC.

Huawei thought the capability would be helpful for the network, but they do not have a strong view.

Ericsson understand there is no need for the capability, and it would create a situation of supporting a subset of relay UEs. Qualcomm think if the UE does not support duplication with split SRB, the network cannot configure DL-only duplication.

Ericsson want to understand if this means the duplication capability would link UL and DL for SRB. Huawei think we would have to revert a previous agreement. Nokia clarify that if there is only one capability, it has to indicate both.

Proposal 2: Allow configuring split SRB1 without duplication and direct SRB1 even when either the remote UE or the relay UE does not support PC5-RRC trigger.

Proposal 3: Introduce an indication whether the remote UE sends RemoteUEInformationSidelink including connectionForMP or not (option 1). Alternatively, RAN2 considers allowing at least the direct SRB1 based on gNB implementation even when PC5-RRC trigger is not supported by either the remote UE or the relay UE (option 2).

Discussion:

Nokia suggest that when the gNB knows that the relay UE is in RRC\_CONNECTED, it should be possible to configure split SRB1 without duplication and direct SRB1.

Huawei think we have had a lot of discussion on the PC5-RRC trigger, and we should not change the UE behaviour for split SRB. Nokia do not think this is a new UE behaviour and rather intend that the UE is not required to duplicate when not necessary; they wonder if there is any harm from the proposal.

Qualcomm agree that there is no harm, but they also think nothing is broken without it.

OPPO wonder what the underlying issue is; they understand option 2 in P3 is the current specification. Nokia consider that in the current spec, if the UE does not support PC5-RRC trigger, the gNB always has to configure duplication.

Huawei understand that in the current spec, we did not capture such a network restriction about configuring duplication. Nokia agree that there is no explicit restriction, but the trigger for MP connection is based on SRB1, so for it to work, SRB1 would need to be configured with duplication.

Ericsson think this is not necessarily the case, because the gNB could infer when the relay UE is in connected and not do duplication; they do not see that the current spec restricts this, i.e., the current spec is consistent with P2.

InterDigital think we should not specify network behaviour.

Agreements:

No capability is introduced to indicate that the UE supports only one path in UL while two paths in DL for MP split RB.

If the UE does not support duplication with split SRB, the network cannot configure DL-only duplication for this UE.

Confirm that split SRB1 without duplication or direct SRB1 can be configured even when the remote or relay UE does not support PC5-RRC trigger (e.g., because the gNB knows the relay UE is in connected mode). No normative spec impact expected.

N122 moves to Agreed.

[R2-2405425](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405425%20%5BK008%5D%20How%20to%20set%20the%20contents%20of%20sidelink%20UE%20capability%20messages%20for%20L2%20U2U%20Relay.docx) [K008] How to set the contents of sidelink UE capability messages for L2 U2U Relay ASUSTeK discussion Rel-18 38.331 NR\_SL\_relay\_enh-Core

Proposal 1: NOTE 2 in section 5.8.9.2.3 is limited to unicast communication.

Proposal 2: Add a new NOTE in section 5.8.9.2.4 to leave it to UE implementation whether to include fields other than pdcp-ParametersSidelink in the UECapabilityInformationSidelink message for U2U Relay.

Discussion:

Apple think it would be more clear to talk about “direct” unicast communication, to distinguish from the relay case.

Agreements:

NOTE 2 in section 5.8.9.2.3 is limited to direct unicast communication.

Add a new NOTE in section 5.8.9.2.4 to leave it to UE implementation whether to include fields other than pdcp-ParametersSidelink in the UECapabilityInformationSidelink message for U2U Relay.

K008 moves to Agreed.

[R2-2404327](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404327%20Discussion%20on%20N122%2C%20B109%20and%20SA2%20LS%20Reply.docx) Discussion on N122, B109 and SA2 LS Reply CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2405286](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405286_On%20RIL%20B109.docx) On RIL B109 Ericsson discussion Rel-18

Rapporteur/multi-company corrections CR

[R2-2405601](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405601%20Rapp%20CR%20for%20SL%20relay_update.docx) RRC corrections for Rel-18 SL relay enhancements Huawei, HiSilicon, ASUSTeK, Nokia, OPPO CR Rel-18 38.331 18.1.0 4847 - F NR\_SL\_relay\_enh-Core

Discussion:

Huawei clarify this aligns with agreements already taken and is intended for merge into the rapporteur CR.

ASN.1 impact

[R2-2404732](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404732%20SLrelay%20RRC%20issues.docx) SL relay RRC correction proposals Nokia discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 4.1: RAN2 to agree that the indication of support of N3C MP is not essential for cell access, and thus it should not be in SIB1.

Proposal 4.2: Move the indication of support of N3C MP (n3c-Support-r18) from SIB1 to SIB12.

Discussion:

LG are fine with the proposals and think the information in SIB12 is all optional, but it would be good to add some clarifying description.

Huawei think other information besides cell access information is in SIB1, e.g., related to idle/inactive. They think for the use of SIB12, a network not supporting sidelink would now have to send SIB12 and there are some mandatory sidelink-specific fields that would have to be included.

LG indicate that the mandatory parameters can be an empty container.

ZTE think the gNB may support n3c and not want to provide SIB12, so they would rather keep it in SIB1.

Ericsson agree with Nokia that SIB1 is not ideal, but they also see that SIB12 may not be the ideal place, and the best solution might be a new SIB, but they acknowledge that a new SIB for one bit is not so sensible.

LG want to amend their previous comment, because there are some places where SIB12 would force the UE to provide the SUI message. So they think in principle a new SIB would make sense.

Huawei think a new SIB is not good if we only have one bit, so they would like to stick to the previous agreement to use SIB1.

Apple think we could remove the feature entirely.

OPPO agree with Huawei and note that SIB1 already contains some support indications for other features such as IAB. MediaTek have a similar view and think SIB1 may be the least bad option.

Nokia understand that SIB12 is not a good option, but they think it is regrettable for all networks to have to add a bit for a feature that may not be widely supported. They also understand that the existing support indications are for the UE to decide whether to select the cell.

InterDigital think neither SIB1 nor SIB12 is ideal, but a new SIB is not realistic, and SIB1 may be the lowest impact. Ericsson have a similar view.

Agreement:

The indication of N3C MP support is confirmed in SIB1.

[R2-2404733](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404733%20RSRP%20for%20U2N%20relay%20%28re-%29selection.docx) RSRP thresholds for U2N relay selection and re-selection Nokia discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2405237](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405237%20correction%20on%20the%20UE%20capability%20reporting%20in%20SUI.docx) Corrections on UE capability reporting in SUI for L2 U2U relay Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1: Clarify that the sl-CapabilityInformationSidelink-r18 in the SUI message indicates the UE capability of the L2 U2U Relay UE. Besides, add a new IE to indicates the UE capability of the target L2 U2U Remote UE indicated by the sl-TargetUE-Identity. Changes for these are shown in the text proposal in the Annex..

Discussion:

OPPO understand the intention, but they wonder if we should change the field description of a legacy IE; maybe we need to add a clarification for Rel-18.

Apple think the first change is correct, but they do not see the need for the new IE. Huawei understand that we need to provide the capability of the target UE, which cannot be done with the current structure.

Nokia also do not see that the new IE is needed; they think there is no case where both capabilities are needed in a single message, so we could use the legacy procedure.

Ericsson are not sure about the intention of the proposal to send the capability of the end UE; they understand that the configuration for the end UE is derived by the UE itself, and the network only needs the capability of the peer UE.

Qualcomm also think only one connection is established at a time towards one target, so they wonder if there is a case where multiple relay UE capabilities should be reported.

OPPO also think the new field for e2e capability is needed, since we left it to UE implementation to indicate the other capabilities; they think a separate capability indication is clearer.

Ericsson wonder why the gNB needs to know the destination UE capability, since the higher-layer configurations are done by the UE. OPPO understand at least the PDCP configuration comes from the network. Ericsson think this is done by UE implementation, not the network.

OPPO think the AS release indicator might be needed as well.

[R2-2405352](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405352_Discussion%20on%20n3c-BearerAssociated.doc) Discussion on n3c-BearerAssociated ZTE, Sanechips discussion NR\_SL\_relay\_enh-Core

* [AT126][408][Relay] Relay RRC proposals with ASN.1 impact (Huawei)

 Scope: F2F offline to check ASN.1 proposals on Rel-18 relay and determine if changes are needed. Critical proposals without ASN.1 impact can be checked if time permits.

 Intended outcome: Report to CB session in R2-2405876

 Schedule: Wednesday 2024-05-22 1700-1800 in Brk2

 Deadline: Thursday 2024-05-23 1000 JST

[R2-2405876](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405876%20Report%20of%20%5BAT126%5D%5B408%5D%5BRelay%5D.docx) Report of [AT126][408][Relay] Relay RRC proposals with ASN.1 impact (Huawei) Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1: to add the new field to indicate the UE capability of the target L2 U2U Remote UE, clarify only out-of-order delivery is included in the UE cap container.

Discussion:

Chair clarifies that the intention is to have a new container for just this field and future extensions. Huawei indicate that the existing capability can be reused.

Ericsson understood from the RRC rapporteur that an OCTET STRING can contain an IE and we could define a new format.

Proposal 2: In subclause 5.8.17.4 of TS 38.331, for integrated discovery, when remote UE perform SL-RSRP filtering, the SL-RSRP filtering parameters should be used instead of using SD-RSRP filtering parameters.

Discussion:

Nokia recall that there was an agreement to use the SD-RSRP threshold because we assume the measurement would have SD-RSRP characteristics, and they think this also means we should use the SD-RSRP filtering. They agree with the typo correction in the TP.

CATT agree with Nokia and think we can just fix the typo.

P3: remove the “according to association between User Info and L2 ID as specified in TS 23.304 [65],” for local ID pair setting procedure

Agreements:

Add the new field to indicate the UE capability of the target L2 U2U Remote UE, clarify only out-of-order delivery is included in the UE cap container. A new container format will be defined for this purpose containing only the out-of-order delivery and the extension marker, to be contained in an OCTET STRING.

Remove the “according to association between User Info and L2 ID as specified in TS 23.304 [65],” for local ID pair setting procedure.

Other documents

R2-2404252 Correction of local ID setting by U2U Relay UE OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2404328](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404328%20Clarification%20on%20the%20U2U%20Relay%20%28Re-%29selection%20Procedure.docx) Clarification on the U2U Relay (Re-)selection Procedure CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2404663](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404663%20Discussion%20on%20SUI%20end-to-end%20U2U%20bearer%20index%20.docx) Discussion on SLRB index in SUI for L2 U2U relay Apple discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2404678](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404678-Discussion%20on%20the%20remaining%20issues%20for%20U2U%20relay.docx) Discussion on the remaining issues for U2U relay LG Electronics Inc. discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2405238](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405238%20Discussion%20on%20the%20SLRB%20index%20in%20the%20SUI%20for%20U2U%20relay%20UE.doc) Discussion on the SLRB index in the SUI for U2U relay UE Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2405322](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405322.docx) Correction on setuprelease type sidelink fields handling Google CR Rel-18 38.331 18.1.0 4821 - F NR\_SL\_enh-Core

[R2-2405351](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405351_Relay%20UE%20traffic%20pattern%20reporting%20in%20UAI.doc) Discussion on relay UE traffic pattern reporting in UAI ZTE, Sanechips discussion NR\_SL\_relay\_enh-Core

[R2-2405628](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405628-U2U.docx) discussion on U2U relay related issues Sharp discussion Rel-18 NR\_SL\_relay\_enh-Core

Withdrawn/Not available

R2-2405368 Rapp RRC CR for Rel-18 SL relay enhancement Huawei, HiSilicon report Rel-18 38.331 NR\_SL\_relay\_enh-Core Withdrawn

### 7.9.4 SRAP corrections

Impact to 38.351. A single CR with miscellaneous corrections is requested from the specification rapporteur. Minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

Rapporteur CR (endorsed at RAN2#125bis)

R2-2404247 Corrections for NR sidelink relay enhancements OPPO, ZTE CR Rel-18 38.351 18.1.0 0034 2 F NR\_SL\_relay\_enh-Core R2-2403814

Other documents

[R2-2404253](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404253%20-%20Discussion%20on%20SRAP%20corrections.docx) Discussion on SRAP corrections OPPO discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1 For egress link determination at U2U Remote UE, R2 not pursue further detailed specification of UE implementation.

Proposal 2 For egress link determination at U2U Relay UE, not pursue the L2 ID-based link determination.

Discussion:

Apple think the impact of their CR is not very large, and without it there are restrictions on reusing IDs for different connected relay UEs that go beyond what we have agreed.

OPPO note that we agreed the local ID should be able to identify the source and target remote UE, so they understand that it should not also depend on disambiguation with the L2ID.

Huawei think nothing is broken without the changes. Apple agree that the system works.

Apple think on P1, the remote UE has to identify the relay UE by L2ID initially as provided by upper layer. They think some clarification would be useful.

Qualcomm understand the upper layer will use link IDs, not L2ID, so they assume the UE should maintain the L2ID mapping to link IDs and derive the L2ID for each link.

OPPO intend that there may be different internal UE implementations regarding the layer interaction, and we don’t need to specify the details.

Agreements:

For egress link determination at U2U Relay UE, RAN2 will not pursue the L2 ID-based link determination.

[R2-2404662](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404662%20Correction%20on%20egresss%20link%20determination%20in%20L2%20U2U%20relay_38351.docx) Correction for egress link determination in L2 U2U Relay UE Apple CR Rel-18 38.351 18.1.0 0036 - F NR\_SL\_relay\_enh-Core

* Not pursued

### 7.9.5 MAC corrections

Impact to 38.321. A single CR with miscellaneous corrections is requested from the CR rapporteur. Minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

### 7.9.6 RLC and PDCP corrections

Impact to 38.322 and 38.323. For each specification, a single CR with miscellaneous corrections is requested from the CR rapporteur. Minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

Rapporteur CR

[R2-2405856](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5C38323_CR0135_Rel-18_R2-2405856_MiscRelayCorrections.docx) Miscellaneous Rapporteur Corrections to 38.323 for SL Relay InterDigital, ZTE CR Rel-18 38.323 18.1.0 0135 2 F NR\_SL\_relay\_enh-Core Late

Other document

R2-2405353 Discussion on PDCP corrections for MP ZTE, Sanechips discussion NR\_SL\_relay\_enh-Core

Proposal 1: For duplicate PDU discard, add the following case for MP split DRB:

− If the primary path for a MP split DRB is on the indirect path, when deactivation of PDCP duplication is indicated for the DRB, the PDCP entity shall indicate to the RLC entities other than the primary path to discard all duplicated PDCP Data PDUs.

Discussion:

ZTE clarify the change may be needed if the primary RLC entity is not used for MP with primary path on the indirect path.

CATT think for scenario 1, the primary RLC entity can be used, but not for scenario 2, so they think some clarification is useful.

InterDigital understand that the primary RLC entity was used in the legacy specification to indicate the possibility of multiple RLC entities on the direct path, but on the indirect path we have only a single RLC entity. So they think it makes sense to exclude the terminology “primary RLC entity” on the indirect path.

Huawei are OK with the change and agree with InterDigital’s comment.

Nokia think we already tried to specify MP primary RLC in the rapporteur CR, and we should use the structure we have there. They also think there is no ambiguity in the current specification; if the primary path is on the indirect path, the primary RLC entity will be the RLC entity of the indirect path, otherwise it will be one of the RLC entities on the direct path side. ZTE point out that there is no “primary RLC entity” on the indirect path. Nokia understand that the primary RLC entity is defined by indicating a cell group and should always be aligned with the primary path.

InterDigital understand that the primary path can be on the indirect path, but we should not reuse the legacy “primary RLC entity” terminology for the indirect path.

OPPO agree with Nokia and think the primary RLC entity is defined in the RRC spec as being on the primary path.

Apple note that in any case the PDCP layer communicates with the SRAP entity, not any RLC entity. Nokia understand that the discard action must be taken by the RLC entity.

InterDigital think it is a bit a matter of style.

Nokia think the concerned action is discard, which cannot be done in SRAP, and we need to indicate which RLC entities shall do the discard. InterDigital agree that the SRAP entity does not do the discard, and they think the point here is to avoid the “primary RLC entity” terminology.

Nokia think PDCP should follow the terminology established in RRC, where the primary RLC entity is defined. LG have some sympathy for Nokia’s view and would like to keep the primary RLC entity language.

InterDigital see no need to refer to the primary RLC entity on the indirect path in the PDCP spec.

Agreement:

For duplicate PDU discard, add the following case for MP split DRB:

− If the primary path for a MP split DRB is on the indirect path, when deactivation of PDCP duplication is indicated for the DRB, the PDCP entity shall indicate to the RLC entities other than the primary path to discard all duplicated PDCP Data PDUs.

Wording and structure to be determined in rapporteur CR implementation.

### 7.9.7 UE capabilities

Impact to 38.306 and capability-related impact to 38.331. A single CR with miscellaneous corrections is requested from the CR rapporteur. Minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

To include handling of RIL O437

Documents discussed jointly

R2-2405236 UE capability corrections for multi-path operation Huawei, HiSilicon discussion Rel-18 NR\_SL\_relay\_enh-Core

Proposal 1: The new capability is needed to indicate whether UE supports UL transmission via direct path and DL reception via either direct path or indirect path for split SRB.

[R2-2405287](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405287_Discussion_of_Open_Issues_in_38306.docx) Discussion on Open Issues in 38.306 Ericsson discussion Rel-18

Proposal 1 Do not support a new capability to indicate whether UE supports UL transmission via direct path and DL reception via either direct path or indirect path for split SRB.

Agreement:

O437 moves to Rejected.

### 7.9.8 Idle mode corrections

Impact to 38.304. A single CR with miscellaneous corrections is requested from the CR rapporteur. Minor and editorial issues should be coordinated with the rapporteur and merged into the miscellaneous CR. Larger issues can be discussed based on contributions.

## 7.24 TEI18

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

Time budget: 1 TU

### 7.24.2 TEI proposals by RAN2

Items initiated in RAN2 for NR and LTE.

No contributions should be submitted under 7.24.2. They should be submitted under 7.24.x

Tdoc limitation: 1 tdoc, limitation applicable to new proposals. No new Cat. B proposals expected for this meeting

#### 7.24.2.0 In Principle agreed CRs

[R2-2404246](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5C38331_CR4645r1_%28REL-18%29_R2-2404246%20-%20Remove%20of%20AS%20condition%20checking%20of%20SUI%20for%20U2N%20Relay%20communication.docx) Remove of AS condition checking of SUI for U2N Relay communication OPPO, Apple CR Rel-18 38.331 18.1.0 4645 1 F TEI18, NR\_SL\_relay-Core R2-2402210

* Agreed

[R2-2404509](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404509.docx) [B021] Missing posSibType2-17a in list of posSIB types [PosL2RemoteUE] MediaTek Inc., Lenovo CR Rel-18 38.331 18.1.0 4767 1 F TEI18 R2-2403792

* Agreed

[R2-2405253](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405253%20LPPsubSec.docx) LPP support for sub 1s location information reporting periodicity [Sub\_1s\_periodicity] Ericsson, AT&T, T-Mobile, Vivo, Deutsche Telekom, Huawei, HiSilicon, Vodafone CR Rel-18 37.355 18.1.0 0501 3 B TEI18 R2-2403973

* Agreed

[R2-2405254](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405254%20BT.docx) Corrections for Bluetooth AoA/AoD [BT-AoA-AoD] Ericsson, Intel Corporation CR Rel-18 37.355 18.1.0 0502 1 F TEI18 R2-2403794

* Agreed

Withdrawn/Not available

R2-2404245 Remove of AS condition checking of SUI for U2N Relay communication OPPO, Apple CR Rel-18 38.351 18.1.0 0035 - F TEI18, NR\_SL\_relay\_enh-Core R2-2402210 Withdrawn

#### 7.24.2.2 Other RAN2 TEI-18

Contributions should focus only critical issues/corrections for already agreed TEI-18 topics. NCo-sourcing of such proposals is encouraged. Contributions on items that were explicitly downprioritized from Rel-18 WIs should not be brought as TEI18. No new Cat. B proposals expected for this meeting

Including outcome of [POST125bis][019][Emergency Calls] Common solution (Lenovo)

R2-2405575 Corrections related to LPP RILs E001-E003 and Q033 due to agreed CT4 corrections [LocalCoords] Ericsson CR Rel-18 37.355 18.1.0 0510 - F TEI18

* Revised in R2-2405858

[R2-2405858](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405858.docx) Corrections related to LPP RILs E001-E003 and Q033 due to agreed CT4 corrections [LocalCoords] Ericsson CR Rel-18 37.355 18.1.0 0510 1 F TEI18

* Revised in R2-2405861

[R2-2405861](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2405861.docx) Corrections related to LPP RILs E001-E003 and Q033 due to agreed CT4 corrections [PosLocalCoords] Ericsson, Qualcomm Incorporated CR Rel-18 37.355 18.1.0 0510 2 F TEI18

* Agreed

Discussion:

Ericsson clarify this is for CT4 alignment.

Nokia wonder if this is a correction or a new function.

Huawei wonder if a RAN3 CR is also needed. Qualcomm think there is probably some impact there, but it would be from Rel-16.

[R2-2404758](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202405%20-%20RAN2_126%2C%20Fukuoka%5CExtracts%5CR2-2404758%20Correction%20to%20on-demand%20SIB%20request%20%5BOdSIBReq%5D.docx) Correction to on-demand SIB request [OdSIBReq] Huawei, HiSilicon, Ericsson, Qualcomm CR Rel-18 38.331 18.1.0 4796 - B TEI18

* Postponed

Discussion:

Lenovo have concerns on the magic sentence; they think it will not work when facing a legacy network. They also wonder how the UE knows if the network supports the periodic feature.