3GPP TSG-RAN WG2 Meeting #128 R2-24xxxxx

Orlando, Florida, USA, 18-22 November 2024

Source: Session Chair (MediaTek)

Title: Report from session on positioning and sidelink relay

# 4 EUTRA Rel-17 and earlier

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

## 4.3 Positioning corrections Rel-16 and earlier

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

Tdoc Limitation: 1 tdoc

### 4.3.0 In-principle agreed CRs

### 4.3.1 Other

R2-2410232 Correction on broadcast of assistance data-r15 Huawei, HiSilicon CR Rel-15 36.331 15.23.0 5072 - F LCS\_LTE\_acc\_enh-Core

[R2-2410233](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410233%20Correction%20on%20broadcast%20of%20assistance%20data-r16_v00.docx) Correction on broadcast of assistance data-r16 Huawei, HiSilicon CR Rel-16 36.331 16.17.0 5073 - A LCS\_LTE\_acc\_enh-Core

[R2-2410234](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410234%20Correction%20on%20broadcast%20of%20assistance%20data-r17_v00.docx) Correction on broadcast of assistance data-r17 Huawei, HiSilicon CR Rel-17 36.331 17.10.0 5074 - A LCS\_LTE\_acc\_enh-Core

[R2-2410235](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410235%20Correction%20on%20broadcast%20of%20assistance%20data-r18_v00.docx) Correction on broadcast of assistance data-r18 Huawei, HiSilicon CR Rel-18 36.331 18.3.1 5075 - A LCS\_LTE\_acc\_enh-Core

# 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 treated together), the sub-Ais below this

## 5.3 NR Positioning Support

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

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

(NR TEI16 Positioning)

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

Tdoc Limitation: 1 tdoc

### 5.3.0 In-principle agreed CRs

[R2-2409562](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409562%20Correction%20on%20UE%20capability%20of%20supporting%20NavIC%20in%20A-GNSS%20positioning%20%28R16%29.docx) Correction on GNSS-AlmanacSupport and GNSS-UTC-ModelSupport in A-GNSS positioning ZTE Corporation CR Rel-16 37.355 16.13.0 0516 1 F NR\_pos-Core R2-2408213

[R2-2409563](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409563%20Correction%20on%20UE%20capability%20of%20supporting%20NavIC%20in%20A-GNSS%20positioning%20%28R17%29.docx) Correction on GNSS-AlmanacSupport and GNSS-UTC-ModelSupport in A-GNSS positioning ZTE Corporation CR Rel-17 37.355 17.8.0 0517 1 A NR\_pos-Core R2-2408214

[R2-2409564](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409564%20Correction%20on%20UE%20capability%20of%20supporting%20NavIC%20in%20A-GNSS%20positioning%20%28R18%29.docx) Correction on GNSS-AlmanacSupport and GNSS-UTC-ModelSupport in A-GNSS positioning ZTE Corporation CR Rel-18 37.355 18.3.0 0518 1 A NR\_pos-Core R2-2408215

### 5.3.1 Other

R2-2410236 Corection to high accuracy extended uncerntainty in QoS-r16 Huawei, HiSilicon CR Rel-16 37.355 16.13.0 0537 - F TEI16 Revised

* Revised in R2-2410817

[R2-2410817](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410817%20Corection%20to%20high%20accuracy%20extended%20uncerntainty%20in%20QoS-r16.docx) Correction to high accuracy extended uncertainty in LCS QoS Huawei, HiSilicon CR Rel-16 37.355 16.13.0 0537 1 F TEI16 R2-2410236

[R2-2410237](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410237%20Corection%20to%20high%20accuracy%20extended%20uncerntainty%20in%20QoS-r17.docx) Correction to high accuracy extended uncertainty in LCS QoS Huawei, HiSilicon CR Rel-17 37.355 17.8.0 0538 - A TEI16

[R2-2410238](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410238%20Corection%20to%20high%20accuracy%20extended%20uncerntainty%20in%20QoS-r18.docx) Correction to high accuracy extended uncertainty in LCS QoS Huawei, HiSilicon CR Rel-18 37.355 18.3.0 0539 - A TEI16

[R2-2409714](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409714%20Correction%20CR%20to%20TS%2037.355-Rel16.docx) Correction on NavIC almanac set IE, and field descriptions under KlobucharModelParamater, UTC-ModelSet2, and GNSS-SystemTime. Reliance Jio, MediaTek, Ericsson, Qualcomm Incorporated, CEWiT CR Rel-16 37.355 16.13.0 0531 - F LCS\_NAVIC-Core

[R2-2410024](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410024%20Correction%20CR%20to%20TS%2037.355-Rel17.docx) Correction on NavIC L5 almanac set IE, and field descriptions under KlobucharModelParamater, UTC-ModelSet2, and GNSS-SystemTime Reliance Jio, MediaTek, Ericsson, Qualcomm Incorporated, CEWiT CR Rel-17 37.355 17.8.0 0533 - A LCS\_NAVIC-Core

[R2-2410025](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410025%20Correction%20CR%20to%20TS%2037.355-Rel18.docx) Correction on NavIC almanac set IE, and field descriptions under KlobucharModelParamater, UTC-ModelSet2, and GNSS-SystemTime. Reliance Jio, MediaTek, Ericsson, Qualcomm Incorporated, CEWiT CR Rel-18 37.355 18.3.0 0534 - A LCS\_NAVIC-Core

[R2-2410821](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410821.docx) Presence of ValueTag and ExpirationTime when posSIBs are segmented Ericsson CR Rel-15 37.355 15.3.0 0541 - F NR\_pos-Core Revised

* Revised in R2-2410873

[R2-2410873](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410873.docx) Presence of ValueTag and ExpirationTime when posSIBs are segmented Ericsson CR Rel-15 37.355 15.3.0 0541 1 F NR\_newRAT-Core R2-2410821

[R2-2410822](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410822_ValRel16.docx) Presence of ValueTag and ExpirationTime when posSIBs are segmented Ericsson CR Rel-16 37.355 16.13.0 0542 - A NR\_newRAT-Core

[R2-2410823](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410823%20valRel17.docx) Presence of ValueTag and ExpirationTime when posSIBs are segmented Ericsson CR Rel-17 37.355 17.8.0 0543 - A NR\_newRAT-Core

[R2-2410824](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410824.docx) Presence of ValueTag and ExpirationTime when posSIBs are segmented Ericsson CR Rel-18 37.355 18.3.0 0544 - F NR\_newRAT-Core Revised

* Revised in R2-2410869

[R2-2410869](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410869.docx) Presence of ValueTag and ExpirationTime when posSIBs are segmented Ericsson CR Rel-18 37.355 18.3.0 0544 1 A NR\_newRAT-Core R2-2410824

# 6 NR Rel-17

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

Tdoc limitation: 4 Tdocs

## 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))

### 6.2.0 In-principle agreed CRs

[R2-2409757](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409757%20Miscellaneous%20CR%20for%20Rel-17%20SL%20relay%20%28Rel-17%29.docx) Miscellaneous CR for Rel-17 SL relay Huawei, HiSilicon, Philips International B.V., OPPO CR Rel-17 38.331 17.10.0 5086 1 F NR\_SL\_relay-Core R2-2409260

[R2-2409758](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409758%20Miscellaneous%20CR%20for%20Rel-17%20SL%20relay%20%28Rel-18%29.docx) Miscellaneous CR for Rel-17 SL relay Huawei, HiSilicon, Philips International B.V., OPPO CR Rel-18 38.331 18.3.0 5087 1 A NR\_SL\_relay-Core R2-2409261

[R2-2409850](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5C38331_CR4977r1_%28Rel-17%29_R2-2409850%20Clarification%20on%20the%20L2%20U2N%20Remote%20UE%20Measurement.docx) Clarification on the L2 U2N Remote UE Measurement CATT CR Rel-17 38.331 17.10.0 4977 1 F NR\_SL\_relay-Core R2-2407996

[R2-2409851](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5C38331_CR4978r1_%28Rel-18%29_R2-2409851_Clarification%20on%20the%20L2%20U2N%20Remote%20UE%20Measurement.docx) Clarification on the L2 U2N Remote UE Measurement CATT CR Rel-18 38.331 18.3.0 4978 1 A NR\_SL\_relay-Core R2-2407997

### 6.2.1 Other

R2-2410579 RRC correction on SidelinkUEInformationNR for NR sidelink relay communication transmission Philips International B.V., NEC CR Rel-17 38.331 17.10.0 5171 - F NR\_SL\_relay-Core

[R2-2410580](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410580%20-%20RRC%20correction%20on%20SidelinkUEInformationNR%20for%20NR%20sidelink%20relay%20communication%20transmission%20R18.docx) RRC correction on SidelinkUEInformationNR for NR sidelink relay communication transmission Philips International B.V., NEC CR Rel-18 38.331 18.3.0 5172 - A NR\_SL\_relay-Core

## 6.3 NR positioning enhancements

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

### 6.3.0 In-principle agreed CRs

[R2-2410220](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410220%20Correction%20to%20MAC%20for%20R17%20POS-r17.docx) Correction to MAC for R17 POS-r17 Huawei, HiSilicon CR Rel-17 38.321 17.10.0 1998 - F NR\_pos\_enh-Core

[R2-2410221](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410221%20Correction%20to%20MAC%20for%20R17%20POS-r18.docx) Correction to MAC for R17 POS Huawei, HiSilicon CR Rel-18 38.321 18.3.0 1999 - A NR\_pos\_enh-Core

### 6.3.1 Other

Related to Rel-18 LS in R2-2409508 (see AI 7.1.1)

[R2-2409565](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409565%20Correction%20on%20spatial%20relation%20info%20in%20SP%20SRS%20activation%20deactivation%20MAC%20CE%20%28R17%29.docx) Correction on spatial relation info in SP SRS activation deactivation MAC CE (R17) ZTE Corporation, Ericsson CR Rel-17 38.321 17.10.0 1977 - F NR\_pos\_enh-Core

[R2-2409566](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409566%20Correction%20on%20spatial%20relation%20info%20in%20SP%20SRS%20activation%20deactivation%20MAC%20CE%20%28R18%29.docx) Correction on spatial relation info in SP SRS activation deactivation MAC CE (R18) ZTE Corporation, Ericsson CR Rel-18 38.321 18.3.0 1978 - A NR\_pos\_enh-Core

[R2-2409607](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409607%20Correction%20on%20spatial%20relation%20info%20in%20SRS%20configuration%20%28R17%29.docx) Correction on spatial relation info in SRS configuration (R17) ZTE Corporation, Ericsson CR Rel-17 38.331 17.10.0 5101 - F NR\_pos\_enh-Core

[R2-2409608](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409608%20Correction%20on%20spatial%20relation%20info%20in%20SRS%20configuration%20%28R18%29.docx) Correction on spatial relation info in SRS configuration (R18) ZTE Corporation, Ericsson CR Rel-18 38.331 18.3.0 5102 - A NR\_pos\_enh-Core

[R2-2409628](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409628%20Corrections%20on%20the%20NOTE%20in%20the%20description%20of%20dl-PRS-MeasRRC-Inactive%20R17.docx) Corrections on the NOTE in the description of dl-PRS-MeasRRC-Inactive CATT CR Rel-17 37.355 17.8.0 0529 - F NR\_pos\_enh-Core

[R2-2409629](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409629%20Corrections%20on%20the%20NOTE%20in%20the%20description%20of%20dl-PRS-MeasRRC-Inactive%20R18.docx) Corrections on the NOTE in the description of dl-PRS-MeasRRC-Inactive CATT CR Rel-18 37.355 18.3.0 0530 - A NR\_pos\_enh-Core

[R2-2410222](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410222%20Correction%20to%20PRS%20priority%20subset%20for%20DL-AoD-r17_final.docx) Correction to PRS priority subset for DL-AoD-r17 Huawei, HiSilicon CR Rel-17 37.355 17.8.0 0535 - F NR\_pos\_enh-Core

[R2-2410223](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410223%20Correction%20to%20PRS%20priority%20subset%20for%20DL-AoD-r18_final.docx) Correction to PRS priority subset for DL-AoD-r18 Huawei, HiSilicon CR Rel-18 37.355 18.3.0 0536 - A NR\_pos\_enh-Core

[R2-2410825](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410825_MACRel17.docx) Correction of SRS type for TA alignment Ericsson CR Rel-17 38.321 17.10.0 2014 - F NR\_pos\_enh-Core

[R2-2410826](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410826%20MAC.docx) Correction of SRS type for TA alignment Ericsson CR Rel-18 38.321 18.3.0 2015 - A NR\_pos\_enh-Core

# 7 Rel-18

## 7.1 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: 2 tdocs

Minor and editorial issues should be coordinated with the appropriate spec rapporteur and submitted by rapporteur company together with any additional corrections the rapporteur company may have. Larger issues can be discussed based on contributions/individual CRs.

### 7.1.0 In-principle agreed CRs

Contributions agreed in principle at RAN2#127bis.

Unchanged (as far as the chair is aware) from AIP version

[R2-2409567](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409567%20Correction%20on%20assistance%20data%20transfer%20in%20SL%20positioning%20for%20stage-2.docx) Correction on assistance data transfer in SL positioning for stage-2 ZTE Corporation CR Rel-18 38.305 18.3.0 0175 2 F NR\_pos\_enh2 R2-2409259

[R2-2409618](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409618%20Corrections%20of%20location%20TimeStamp%2C%20RSTD%20and%20RTOA%20report.docx) Corrections of location time stamp, RSTD and RTOA report CATT CR Rel-18 38.355 18.3.0 0008 3 F NR\_pos\_enh2-Core R2-2409268

[R2-2409683](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409683.docx) RRC correction on NR sidelink positioning Philips International B.V., Ericsson CR Rel-18 38.331 18.3.0 4940 2 F NR\_pos\_enh2-Core R2-2408864

[R2-2409916](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409916%20Miscellaneous%20corrections%20to%20SLPP%20specification.docx) Miscellaneous corrections to SLPP specification Intel Corporation CR Rel-18 38.355 18.3.0 0011 1 D NR\_pos\_enh2-Core R2-2409254

[R2-2410215](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410215%20Rapp%20CR%20for%20IDLE%20mode%20procedure%20for%20R18%20positioning.docx) Rapporteur CR to IDLE mode procedure for R18 Positioning Huawei, HiSilicon, Phillips CR Rel-18 38.304 18.3.0 0422 - F NR\_pos\_enh2

[R2-2410494](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410494.docx) Miscellaneous RRC Positioning Correction Ericsson CR Rel-18 38.331 18.3.0 5061 1 F NR\_pos\_enh2-Core R2-2408935

[R2-2410495](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410495.docx) Correction of misplaced else condition of SL Positioning clause Ericsson CR Rel-18 38.321 18.3.0 1971 1 F NR\_pos\_enh2-Core R2-2409158

[R2-2410644](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410644%20Clarification%20on%20the%20maximum%20number%20of%20other%20UEs%20in%20sidelink%20positioning.docx) Clarification on the maximum number of other UEs in sidelink positioning vivo CR Rel-18 38.305 18.3.0 0178 1 F NR\_pos\_enh2-Core R2-2409251

Coversheet revision

[R2-2410217](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410217%20Correction%20on%20SLPP.docx) Correction on SLPP Huawei, HiSilicon CR Rel-18 38.355 18.3.0 0014 - F NR\_pos\_enh2

* Revised in R2-2411079 (remove changemark on coversheet)

R2-2411079 Correction on SLPP Huawei, HiSilicon CR Rel-18 38.355 18.3.0 0014 1 F NR\_pos\_enh2

Revised from AIP version

[R2-2410214](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410214%20Rapp%20CR%20for%20MAC%20spec%20for%20R18%20POS.docx) Rapporteur CR to MAC spec for R18 Positioning Huawei, HiSilicon, ASUSTek CR Rel-18 38.321 18.3.0 1996 - F NR\_pos\_enh2

### 7.1.1 Organizational

Including incoming LSs and rapporteur inputs.

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

R2-2409508 Reply LS on CSI-RS and SRS for spatial relation (R1-2409097; contact: ZTE) RAN1 LS in Rel-18 NR\_pos\_enh2-Core To:RAN2

### 7.1.2 Stage 2

Impact to 38.300, 37.340, and 38.305.

This agenda item may be handled at lower priority.

R2-2410497 Miscellaneous corrections for Positioning Ericsson CR Rel-18 38.300 18.3.0 0938 - F NR\_pos\_enh2-Core

### 7.1.3 SLPP corrections

Impact to 38.355.

R2-2409568 Correction on tx timestamp request in SL-RTT ZTE Corporation CR Rel-18 38.355 18.3.0 0012 - F NR\_pos\_enh2

[R2-2409826](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409826%20Clarification%20on%20SLPP%20session%20ID%20existence%20in%20SLPP%20message%20between%20target%20UE%20and%20LMF.docx) Clarification on SLPP session ID existence in SLPP messages between target UE and LMF vivo discussion Rel-18 NR\_pos\_enh2-Core

[R2-2410132](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410132%20Corrections%20on%20FG%20R1%2041-1-19a%20and%2041-1-19b.docx) Corrections on capabilities for FG R1 41-1-19a and 41-1-19b in IE CommonSL-PRS-MethodsIEsProvideCapabilities Lenovo CR Rel-18 38.355 18.3.0 0013 - F NR\_pos\_enh2

[R2-2410218](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410218%20Discussion%20on%20the%20issues%20in%20GAD%20in%20SLPP.docx) Discussion on the issues in GAD in SLPP Huawei, HiSilicon discussion Rel-18 NR\_pos\_enh2

### 7.1.4 LPP corrections

Impact to 37.355.

R2-2409619 Correction of nr-DL-PRS-RSCPD-ReportingRRC-Inactive in NR-DL-TDOA-MeasurementCapability CATT CR Rel-18 37.355 18.3.0 0528 - F NR\_pos\_enh2-Core

[R2-2410401](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410401.docx) Correction for the UE capability on PosSRS-BWA-RRC-Inactive Xiaomi CR Rel-18 37.355 18.3.0 0540 - F NR\_pos\_enh2-Core

### 7.1.5 RRC corrections

Impact to 38.331 and 38.306.

R2-2409569 Correction on the dedicated pool interest frequency request in SUI ZTE Corporation CR Rel-18 38.331 18.3.0 5098 - F NR\_pos\_enh2

[R2-2409620](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409620%20Clarification%20on%20the%20activation%20mechanism%20of%20srs-PosConfigOrActivationReq.docx) Clarification on the activation mechanism of srs-PosConfigOrActivationReq CATT, Ericsson CR Rel-18 38.331 18.3.0 5103 - F NR\_pos\_enh2-Core

[R2-2409639](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409639_CR5104_38.331%20Correction%20for%20NW%20restriction%20on%20dedicated%20SL-PRS%20resource%20pool.docx) Correction on NW restriction for dedicated SL-PRS resource pool vivo, Ericsson CR Rel-18 38.331 18.3.0 5104 - F NR\_pos\_enh2-Core

[R2-2409656](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409656_CR5106_38.331%20Correction%20for%20UE%20indicating%20its%20preference%20frequencies%20for%20sidelink%20positioning%20in%20SUI.docx) Correction for UE indicating its preference TX/RX frequencies for sidelink positioning in SUI vivo CR Rel-18 38.331 18.3.0 5106 - F NR\_pos\_enh2-Core

[R2-2410216](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410216%20Correction%20for%20positioning%20SRS%20CA%20in%20RRC_INACTIVE.docx) Correction for positioning SRS CA in RRC\_INACTIVE Huawei, HiSilicon, Ericsson, Samsung CR Rel-18 38.331 18.3.0 5150 - F NR\_pos\_enh2

[R2-2410224](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410224%20Correction%20to%20sidelinkUEInformation%20for%20SL%20POS.docx) Correction to sidelinkUEInformation for SL POS Huawei, HiSilicon CR Rel-18 38.331 18.3.0 5151 - F NR\_pos\_enh2

[R2-2410498](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410498%20SLRRC.docx) Sidelink RRC Positioning Correction Ericsson, vivo CR Rel-18 38.331 18.3.0 5165 - F NR\_pos\_enh2-Core

[R2-2410584](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410584%20-%20RRC%20correction%20on%20NR%20sidelink%20positioning%20R18.docx) RRC correction on NR sidelink positioning Philips International B.V. CR Rel-18 38.331 18.3.0 5174 - F NR\_pos\_enh2-Core

### 7.1.6 MAC corrections

Impact to 38.321.

R2-2410176 Correction on prioritization between SR and SL-PRS transmission ASUSTeK CR Rel-18 38.321 18.3.0 1992 - F NR\_pos\_enh2

### 7.1.7 Corrections to other specifications

Impact to any specifications not identified above.

R2-2410133 Correction on the capability description for posSRS-BWA-RRC-Inactive-r18 (FG R1 41-4-8) Lenovo discussion Rel-18 NR\_pos\_enh2

[R2-2410402](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410402.docx) Correction for the UE capability on PosSRS-BWA-RRC-Inactive Xiaomi CR Rel-18 38.306 18.3.0 1212 - F NR\_pos\_enh2-Core

## 7.5 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: 1 tdoc

1 additional tdoc on top of the limit is allowed for co-sourced contribution with 3 or more companies.

Minor and editorial issues should be coordinated with the appropriate spec rapporteur and submitted by rapporteur company together with any additional corrections the rapporteur company may have. Larger issues can be discussed based on contributions/individual CRs.

### 7.5.0 In-principle agreed CRs

Contributions agreed in principle at RAN2#127bis.

[R2-2409631](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409631_CR0141_TS38.323_Corrections%20on%20security%20for%20L2%20U2U%20relay_Rel-18.docx) Corrections on security for L2 U2U relay vivo CR Rel-18 38.323 18.3.0 0141 1 F NR\_SL\_relay\_enh-Core R2-2408374

[R2-2409682](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409682.docx) RRC correction on NR SL U2U relay operation Philips International B.V. CR Rel-18 38.331 18.3.0 5048 2 F NR\_SL\_relay\_enh-Core R2-2409263

[R2-2409735](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409735_38331_CR5081_%20Clarification%20for%20ul-DataSplitThreshold%20setting%20in%20multi-path%20relay.docx) Clarification for ul-DataSplitThreshold setting in multi-path relay OPPO CR Rel-18 38.331 18.3.0 5081 1 F NR\_SL\_relay\_enh-Core R2-2409118

[R2-2409759](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409759%20Miscellaneous%20CR%20for%20Rel-18%20SL%20relay%20enhancement.docx) Miscellaneous CR for Rel-18 SL relay enhancement Huawei, HiSilicon CR Rel-18 38.331 18.3.0 4994 2 F NR\_SL\_relay\_enh-Core R2-2409262

[R2-2409760](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409760%20Correction%20to%20error%20handling%20for%20U2U%20operation.DOCX) Correction to error handling for U2U operation Huawei, HiSilicon CR Rel-18 38.351 18.2.0 0037 2 F NR\_SL\_relay\_enh-Core R2-2409264

### 7.5.1 Organizational

Including incoming LSs and rapporteur inputs.

### 7.5.2 Stage 2 corrections

Impact to 38.300.

R2-2410197 U2U Relays, Local ID Assignment Ericsson discussion Rel-18 R2-2408879

### 7.5.3 Control plane corrections (including UE capabilities)

Impact to 38.331, 38.304, and 38.306.

R2-2409853 Clarification on the Terminology of Peer UE CATT discussion Rel-18 NR\_SL\_relay\_enh-Core

[R2-2409960](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409960%20Correction%20on%20RRC_Relay_SRAP_procedure_v3.docx) Corrections on RRC SRAP configuration for L2 U2U Apple, ZTE CR Rel-18 38.331 18.3.0 5125 - F NR\_SL\_relay\_enh-Core

[R2-2410614](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410614_Corrections%20for%20U2U%20relay%20measurements.docx) Corrections for U2U relay measurements ZTE Corporation, Sanechips, Huawei, Hisilicon, OPPO, CATT, Apple CR Rel-18 38.331 18.3.0 5175 - F NR\_SL\_relay\_enh-Core

### 7.5.4 User plane corrections (including SRAP)

Impact to 38.351, 38.321, 38.322, and 38.323.

R2-2410586 RLC correction for multi-path relay with N3C Huawei, HiSilicon CR Rel-18 38.322 18.1.0 0063 - F NR\_SL\_relay\_enh-Core

## 7.8 R18 Other

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

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

Clarification CRs should be discussed with spec rapporteurs of the topic prior to submission.

Time budget: 1 TU

Tdoc Limitation: 2

### 7.8.3 Other

RAN3, SA2, SA3, CT1 led items and others, e.g. eNPN, Slicing, NTN self evaluation issues, etc.

[R2-2410496](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410496%20LPPUP.docx) Introduction of LCS User Plane Ericsson, Intel Corporation, Huawei, HiSilicon, ZTE Corporation, vivo, Qualcomm Incorporated, Samsung, CATT CR Rel-18 38.305 18.3.0 0159 5 F TEI18 R2-2403538

# 8 Rel-19

## 8.13 NR sidelink multi-hop relay

(NR\_SL\_relay\_enh2; leading WG: RAN2; REL-19; WID: [RP-242349](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_105/Docs/RP-242349.zip))

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.13.1 Organizational

LSs and rapporteur input, including workplan, etc.

### 8.13.2 Relay discovery and (re)selection

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

Email discussion summary

[R2-2410305](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410305_Report%20of%20%5BPOST127%5D%5B401%5D%5BRelay%5DMH%20relay%20discovery%20and%20%28re%29selection.doc) Report of [POST127][401][Relay] MH relay discovery and (re)selection LG Electronics Inc. discussion Rel-19

[Conditions for discovery]

[EASY] Proposal 1a: A lower bound is not required for the intermediate Relay UE.

[DISCUSSION] Proposal 1b: For the intermediate Relay UE, RAN2 needs to discuss whether upper bound is required .

[EASY] Proposal 2: RAN2 understands that the intermediate Relay UE can initiate the announcement message when receiving announcement message or, at least, when the intermediate Relay UE has the information for the announcement message provided by the last Relay UE.

[EASY] Proposal 3: The discovery announcement message can be forwarded at the intermediate Relay UE when the SD-RSRP or SL-RSRP between the last/parent intermediate Relay UE and itself is above a configured threshold.

Further clarification can be discussed in RAN2.

[EASY] Proposal 4: The following model B discovery forwarding condition can be baseline for further discussion:

- For Model B, the intermediate Relay UE forwards the solicitation message only if the PC5 RSRP between the Remote UE (or intermediate Relay UE) and the intermediate Relay UE is above a threshold.

- For Model B discovery, upon discovery response messages reception, the Remote UE considers an intermediate Relay UE(s) as a candidate first relay UE(s) along the path to the last Relay UE if the SD-RSRP towards the first intermediate Relay UE is above a configured threshold. (modified by Ericson’s comment)

- For Model B, no AS criterion is needed for the intermediate Relay UE(s) to forward the response message to the Remote UE.

[EASY] Proposal 5a: For the discovery announcement message initiation (in the case of model A), the last Relay UE doesn’t need to check PC5 AS condition.

[DISCUSSION] Proposal 5b: In the case of discovery model B, the following two options can be further discussed

(option 1) For the discovery response message transmission (in the case of model B), the last Relay UE needs to check the PC5 AS condition before sending discovery response message to the (first) intermediate Relay UE.

(option 2) As the legacy Rel-17 U2N relay, the U2N Relay UE doesn’t have any PC5 AS conditions for transmitting the announcement/response discovery message. The same principle can be applied to the last Relay UE.

[(Re)selection triggering conditions]

[EASY] Proposal 6a: The following relay selection triggering conditions for Remote UE are supported for the multi-hop relay operation.

[Relay selection triggering conditions for Remote UE]

q) If the Remote UE has no serving cell;

j) If the Remote UE does not have a selected intermediate Relay UE;

[ESAY] Proposal 6b: The following relay re-selection triggering conditions for Remote UE are supported for the multi-hop relay operation at least when there is only one intermediate Relay UE.

[Relay re-selection triggering conditions for Remote UE]

q) If the SL-RSRP of the currently selection intermediate Relay UE is below a configured threshold;

r) If the SD-RSRP of the currently selected intermediate Relay UE is below a configured threshold;

s) If the upper layer indicates not to use the currently selected intermediate Relay UE;

t) If the upper layer of the selected intermediate Relay UE requests the release of the PC5-RRC connection;

u) If the RLF is detected on the PC5-RRC connection with the current intermediate Relay UE;

v) If the Remote UE receives a notification message from the intermediate Relay UE caused by one of the following:

h-1) if intermediate Relay UE detects PC5 RLF between intermediate Relay UE and last Relay UE (or serving intermediate Relay UE)

h-2) if intermediate Relay UE receives RRCReconfiguration message for HO (if the intermediate Relay UE is in RRC\_CONNECTED)

h-3) if intermediate Relay UE performs cell reselection

h-4) if intermediate Relay UE fails Uu RRC connection establishment/Resume via last Relay UE

h-5) if intermediate Relay UE receives PC5-RRC connection release between intermediate Relay UE and last Relay UE (or serving intermediate Relay UE)

[EASY] Proposal 6C: Following condition can be additionally considered for relay selection

- If direct Uu signal strength of current serving cell of the Remote UE is below a configured signal strength threshold.

[EASY] Proposal 6D: The following solution is not considered in this release:

- The last Relay UE generates notification message when the Uu RSRP is decreased under a configured threshold

[EASY] Proposal 6E: The following solution is not considered in this release:

- The intermediate Relay UE generates notification message when the PC5 RSRP is decreased under a configured threshold.

[EASY] Proposal 6F: in addition to proposal 6b, the following condition can be considered for generating notification message.

- h-6) if the intermediate Relay UE receives PC5-S connection release between the intermediate Relay UE and last Relay UE (or serving intermediate Relay UE)

[Quite EASY] Proposal 7: The notification message generated by last Relay UE or by (not first) intermediate Relay UE can be [forwarded/delivered] toward the Remote UE via the first intermediate Relay UE.

[EASY] Proposal 8: Any relay (re)selection triggering condition is not specified for intermediate Relay UE.

[(Re)selection criteria]

[EASY] Proposal 9: Rel-18 relay (re)selection criteria can be reused for relay (re)selection criteria for the Rel-19 multi-hop.

- SL-RSRP and SD-RSRP can be used for relay selection/reselection criteria.

- In both cases, it is left to remote UE implementation whether to use SL-RSRP or SD-RSRP for relay (re)selection trigger evaluation in case of no data transmission.

- Besides the PC5 link quality, RAN2 does not pursue other AS criteria for relay (re)selection.

[Scenarios and UE roles]

[EASY] Proposal 10: The last Relay UE of a multi-hop relay operation can also act as U2N Relay UE of a single-hop relay operation simultaneously.

[Quite EASY] Proposal 11: An intermediate Relay UE in multi-hop relay operation can also act as a Remote UE in single-hop relay operation as long as there is only single PC5 connection between Last Relay UE and intermediate Relay UE for both multi-hop and single-hop relay operation.

[Quite EASY] Proposal 12: An Intermediate Relay UE can serve multiple multi-hop indirect paths of different Remote UEs. The intermediate Relay UE cannot support multiple PC5 unicast links toward same/different last/U2N Relay UE(s) for support of different indirect paths. One intermediate Relay UE should have only one single PC5 unicast link for one physical intermediate/last Relay UE and only single PC5 unicast link for one physical Remote UE.

[Supported and unsupported cases of multiple connections, edited by chair for clarity]

[EASY] Proposal 13: following cases are supported:

- One last Relay UE can have two connections with one intermediate Relay UE and one Remote UE (the intermediate Relay UE and Remote UE are physically different UE).

- Two physically different Remote UE(s) can have each indirect path via the same intermediate Relay UE and the same last Relay UE.

FFS if the last relay UE can use the same L2ID for both of the connections in either case.

[EASY] Proposal 14: following cases are not supported:

- Physically one intermediate Relay UE has two PC5 unicast link with the physically one last Relay UE.

- Physically different two Remote UEs have each indirect connection via physically one intermediate Relay UE. The intermediate Relay UE has two PC5 unicast link with the physically one last Relay UE

- One intermediate Relay UE, which also acts as Remote UE, can have two different indirect connection via physically different last Relay UE

- Two physically different Remote UE can have each indirect path via the physically same intermediate Relay UE and physically different last Relay UE(s). i.e., physically one intermediate Relay UE has connections with physically two different last Relay UE(s) to support physically different Remote UE(s).

- Two different indirect links at the physically same Remote UE can have connections with the gNB via the physically same intermediate Relay UE and physically same last Relay UE.

- Two different indirect links at the physically same Remote UE can have connections with the gNB via the physically same intermediate Relay UE and physically different last Relay UE.

- (2.5D-1) One intermediate Relay UE, which also acts as Remote UE, can have two different indirect connection via physically different last Relay UE. Each last Relay UE has a connection with different cells in the same gNB.

- (2.5D-2) Two physically different Remote UE can have each indirect path via the physically same intermediate Relay UE and physically different last Relay UE(s) i.e., physically one intermediate Relay UE has connections with physically two different last Relay UE(s) to support physically different Remote UE(s). Each last Relay UE has a connection with different cells in the same gNB.

- (2.5D-3) Two different indirect links at the physically same Remote UE can have connections with the gNB via the physically same intermediate Relay UE and physically different last Relay UE. Each last Relay UE has a connection with different cells in the same gNB.t

Other contributions

[R2-2410032](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410032_Discussion%20on%20multi-hop%20Relay%20discovery%20and%20%28re%29selection.doc) Discussion on multi-hop Relay discovery and (re)selection ZTE Corporation, Sanechips discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 2: RAN2 sends LS to ask SA2 to clarify the following questions:

- whether an intermediate relay needs to establish PC5 link with the relay from which the discovery announcement message is received before sending/forwarding the discovery announcement message.

- whether an intermediate relay can send/forward discovery announcement messages for different RSCs/last relay UEs(if Root relay info is included) or need to select a parent relay with a RSC and only sending/forwarding the discovery announcement message for the selected RSC.

- whether an intermediate relay can have two parent relays towards different last relay UEs/gNBs for different remote UEs.

[R2-2410827](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410827_RelayDisc%26Resel.docx) Considerations on relay discovery and (re)selection Samsung discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 4: RAN2 is kindly asked to discuss whether the hop count information is included in the discovery message.

Proposal 5: RAN2 is kindly asked to discuss whether there is need to limit the number of hops.

[R2-2410587](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410587%20Relay%20discovery%20and%20%28re%29selection%20for%20Multi%20hop%20Relays.docx) Relay discovery and (re)selection for multi-hop Relay Huawei, HiSilicon discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 2: Reuse the Rel-17 direct discovery procedures for the intermediate relay UE to find a parent relay UE first and then for the remote UEs to find the first relay UE in multi-hop scenario.

Proposal 3: The intermediate relay UE performs discovery procedure as a relay UE after establishing the PC5 connection with its parent relay UE. In this case it does not need to check the AS condition.

[R2-2409967](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409967%20Discussion%20on%20relay%20discovery%20and%20selection.docx) Relay discovery and selection for Multi-hop UE-to-NW Relay Apple discussion Rel-19 DUMMY

Proposal 1 An in-coverage relay UE shall always determine whether it can be the “Last relay UE” first and may become intermediate relay UE only if it cannot satisfy the conditions of last relay UE.

Proposal 3 Only mode 2 RA is supported for remote UE and intermediate relay UE.

[R2-2409632](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409632_Discussion%20on%20topology%20and%20intermediate%20relay%20UE%20%28re%29selection.docx) Discussion on topology and intermediate relay UE (re)selection vivo discussion Rel-19

[R2-2409728](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409728%20Discussion%20on%20multi-hop%20U2N%20relay%20discovery%20and%20relay%20selection.docx) Discussion on multi-hop U2N relay discovery and relay selection NEC Corporation discussion NR\_SL\_relay\_multihop-Core

[R2-2409730](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409730%20-%20Discovery%20and%20relay%20%28re%29selection%20for%20multi-hop%20U2N%20relay.docx) Discovery and relay (re)selection for multi-hop U2N relay OPPO discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2409859](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409859%20Discussion%20on%20Multi-hop%20Discovery%20and%20%28Re%29selection.docx) Discussion on Multi-hop Discovery and (Re)selection CATT discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2409906](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409906_Discussion%20on%20relay%20discovery%20and%20%28re%29selection%20for%20NR%20sidelink%20multi-hop%20relay.docx) Discussion on relay discovery and (re)selection for NR sidelink multi-hop relay TOYOTA InfoTechnology Center discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2410007](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410007%20%28R19%20SL%20Relay%20WI_AI8132%20RelayDiscoverySelection%29.doc) Discovery and Relay (Re)Selection for Multi-hop U2N Relays InterDigital discussion Rel-19

[R2-2410104](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410104_Multi-hop%20relay%20discovery%20and%20reselection.docx) Multi-hop relay discovery and reselection China Telecom discussion Rel-19 DUMMY

[R2-2410150](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410150%20-%20discussion%20on%20discovery%20and%20relay%20%28re%29selection.docx) discussion on discovery and relay (re)selection Ericsson discussion Rel-19

[R2-2410183](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410183%20Remaining%20issues%20on%20multi-hop%20U2N%20Relay%20Discovery%20message%20forwarding.docx) Remaining issues on multi-hop U2N Relay Discovery message forwarding ASUSTeK discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2410281](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410281%20Relay%20%28re%29selection%20in%20Multi-hop%20relay%20v1.0.doc) Relay (re)selection in Multi-hop relay Lenovo discussion Rel-19

[R2-2410288](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410288%20Relay%20discovery%20aspects.docx) Relay discovery aspects for multi-hop relay Nokia discussion NR\_SL\_relay\_multihop

[R2-2410298](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410298-Discussion%20on%20the%20discovery%20and%20relay%20%28re%29selection%20for%20multi-hop%20U2N%20relay.docx) Discussion on the discovery and relay (re)selection for multi-hop U2N relay LG Electronics Inc. discussion Rel-19

[R2-2410392](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410392.docx) Multi-hop relay selection/re-selection Sony discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2410570](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410570_relay_discovery_reselection.docx) Discovery and (re)selection under multihop relay Kyocera discussion

[R2-2410619](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410619_%20SL%20selection.docx) Relay discovery and (re)selection TCL discussion Rel-19

[R2-2410840](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410840%20AIoT%20paging.docx) Relay discovery and (re)selection TCL discussion Rel-19

[R2-2410704](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410704-MH-reselection.docx) discussion on Relay discovery and (re)selection for multi-hop relay Sharp discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2410734](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410734-Discovery%20and%20Relay%20%28re%29selection%20for%20multi-hop%20U2N%20relay.docx) Discovery and Relay (re)selection for multi-hop U2N relay Qualcomm Incorporated discussion NR\_SL\_relay\_multihop-Core

### 8.13.3 Control Plane Procedures and SRAP impact

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

Email discussion summary

[R2-2410006](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410006%20Report%20of%20%5BPOST127%5D%5B402%5D%5BRelay%5D%20MultliHop%20Relay%20CP_P2_v21_Rapp.docx) Report of [Post127][402][Relay] Multi-hop relay control plane InterDigital discussion Rel-19

[Connection establishment, two approaches, edited by chair for clarity]

Proposal 1 – In one approach (“approach 1”) of U2N relays, each of the Intermediate Relay UEs must be in RRC\_CONNECTED when the U2N remote UE is in RRC\_CONNECTED. Connection establishment in the U2N remote UE first requires that each Intermediate Relay UE which is in RRC\_IDLE/RRC\_INACTIVE first enters RRC\_CONNECTED. FFS whether connection establishment of an Intermediate Relay UE (other than the Last Relay UE) is captured in specification as connection establishment of a remote UE or a relay UE.

Proposal 2 – The figure and description under P1 of R2-2410006 serves as a baseline connection establishment procedure for multi-hop U2N Relays if Approach 1 (all relay UEs must be in RRC\_CONNECTED when the remote UE is in RRC\_CONNECTED) is adopted.

Proposal 3 – In one approach (“approach 2”) of U2N relays, Intermediate Relay UEs (other than the Last Relay UE) can be in RRC\_IDLE/RRC\_INACTIVE when the U2N remote UE is in RRC\_CONNECTED.

Proposal 4 – In approach 2, any relay UE which happens to be in RRC\_CONNECTED can obtain its relaying RLC channel configuration in dedicated signalling.

Proposal 5 – The figure and description under P4 of R2-2410006 serves as a baseline connection establishment procedure for multi-hop U2N Relays if Approach 2 (relays other than the Last Relay may/may not remain in RRC\_IDLE/RRC\_INACTIVE when the remote UE is in RRC\_CONNECTED) is adopted.

Proposal 7 – The scenario of the remote UE RRC\_CONNECTED to one cell while an Intermediate Relay UE is RRC\_CONNECTED to a different cell is supported only in approach 2. FFS whether the scenario needs to be supported.

Proposal 8 – For approach 1, QoS split for each hop is performed by the network.

Proposal 9 – For approach 2, QoS split between the Uu hop and all remaining hops is performed by the network. FFS how to split the QoS over each of the individual remaining hops.

[System information]

Proposal 6 – In multi-hop, the U2N Remote UE uses the SI of the cell of the Last Relay UE, which is forwarded via the Intermediate Relay UE(s). FFS on how to perform the forwarding.

[Use case and scenario support]

Proposal 10: The scenario of two remote UEs connected to different cells via a single relay is supported only by approach 2. RAN2 discusses if this is a valid use case to support in this release or future releases.

Proposal 11: If the scenario of the relay and remote UE connected to different cells is supported, service continuity for this scenario is outside of Rel19 scope.

[Additional details]

Proposal 12: Local UE ID of the remote UE is provided by the gNB. FFS for approach 2, how it is provided to relay UEs in RRC\_IDLE/RRC\_INACTIVE and which cell/gNB provides it.

Proposal 13: RAN2 discuss, in approach 2, whether RLC channel configuration is provided by the gNB or is obtained by SIB/Preconfiguration.

[Pros and cons of approaches]

Proposal 14: Approach 1 adds signalling and latency associated with connection (re)establishment of the relay UEs. RAN2 discuss whether this is a concern.

Proposal 15: Approach 1 makes connection establishment at the remote UE dependant on successful connection establishment by each relay. RAN2 discuss whether this is a concern.

Proposal 16: RAN2 discusses which approach has a higher signalling overhead.

Other contributions

Approach 1

[R2-2410139](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410139%20Discussion%20on%20control%20plane%20and%20QoS%20handling%20for%20NR%20sidelink%20multi-hop%20relay.docx) Discussion on control plane and QoS handling for NR sidelink multi-hop relay Spreadtrum, UNISOC discussion Rel-19

Proposal 2: The connection establishment procedure of single-hop U2N relays can be as a baseline for multi-hop U2N relays if Approach 1 is adopted.

Proposal 3: For remote UE end-to-end QoS split in multi-hop L2 U2N relay, the mechanism in single-hop L2 U2N relay is as baseline, i.e. gNB implementation can handle the end-to-end QoS split over multi-hop.

Approach 2

[R2-2410149](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410149%20-%20discussion%20on%20control%20plane%20procedure.docx) discussion on control plane procedure Ericsson discussion Rel-19

Proposal 1 RAN2 to work on two scenarios including:

a. Scenario 1: Intermediate Relay UE(s) and Last Relay UE are in the same serving cell.

b. Scenario 2: Relay UEs can be in different serving cells of the same gNB.

Proposal 4 Same as in legacy, when L2 U2N Remote UE is in RRC\_CONNECTED, L2 U2N Last Relay UE also needs to be in RRC\_CONNECTED.

Proposal 5 To down-select Approach 2 between Approach 1 and Approach 2, i.e., L2 U2N Intermediate Relay UEs are not mandated to be in RRC\_CONNECTED.

SRAP aspects

[R2-2410290](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410290%20SRAP%20impacts%20of%20MH%20relay.docx) SRAP impacts on MH relay Nokia discussion NR\_SL\_relay\_multihop

Proposal 2: An SRAP header can be added per hop to map ingress and egress RLC channels.

[R2-2409969](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409969%20Discussion%20on%20SRAP.docx) Discussion on SRAP for Multi-hop Layer-2 U2N Relay Apple discussion Rel-19 DUMMY

Proposal 1 Each Layer-2 Intermediate Relay UE has a single PC5 SRAP entity.

Proposal 2 Remote UE ID and BEARER ID are included in SRAP header for multi-hop L2 U2N relay.

Proposal 3 For SRAP mapping in intermediate relay, a single set of PC5 Relay RLC channel configurations is used for both directions, whereas different SRAP mapping could be used in each direction.

Proposal 4 A “direction” bit to discern UL/DL is included in SRAP header.

Proposal 5 Support SRAP Control PDU including remote UE L2 ID to be transported together with the first RRC message .

Bearer mapping

[R2-2410033](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410033_Discussion%20on%20control%20plane%20procedures%20for%20multi-hop%20SL%20Relay.doc) Discussion on control plane procedures for multi-hop SL relay ZTE Corporation, Sanechips discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 9: For the bearer mapping configured to intermediate relays, it is the mapping of remote UE’s RB to egress PC5 RLC channel.

Proposal 10: RAN2 to discuss how intermediate relays to determine the egress link in the downlink.

[Alternatives from text of paper related to P10:]

- Way 1: the gNB indicates the downlink routing information of each remote UE to the intermediate relay, i.e. the next node in the downstream lead to the remote UE.

- Way 2: the intermediate relay records from which node the remote UE’s packets are received in the uplink. Then the intermediate relay forwards the remote UE’s packets to the same node in the downlink.

QoS split

[R2-2409860](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409860%20Discussion%20on%20the%20control%20plane%20procedures.docx) Discussion on the Control Plane Procedures CATT discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 9: The network is responsible for the QoS split for each hop.

Proposal 10: Same as Rel-17 L2 U2N relay, the parameter needs to be split is PDB.

Paging/SI

[R2-2409796](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409796%20CP%20and%20SRAP%20for%20Multi-hop%20Relay.docx) CP and SRAP for Multi-hop Relay NEC discussion

Proposal 6: For paging and SI forwarding, the similar principles of Rel-17 U2N relay mechanism can apply to multi-hop case.

Proposal 7: For paging and SI forwarding, there are multiple PC5-RRC connections along with the multi-hop path (i.e., among the remote UE and multiple intermediate U2N relay UEs).

[R2-2409633](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409633_Discussion%20on%20CP%20and%20SRAP%20impact%20for%20Approach%201.docx) Discussion on CP and SRAP impact for Approach 1 vivo discussion Rel-19

[R2-2409732](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409732%20-%20Control%20plane%20procedures%20of%20multi-hop%20U2N%20relay.docx) Control plane procedures of multi-hop U2N relay OPPO discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2409968](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409968%20Discussion%20on%20CP%20connection%20set-up%20approaches_v1.docx) Discussion on End-to-End Connection Setup Approaches for Multi-hop UE-to-NW Relay Apple discussion Rel-19 DUMMY

[R2-2410008](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410008%20%28R19%20SL%20Relay%20WI_AI8.13.3%20CP%20Handling%29.doc) Control Plane Aspects for Multi-hop U2N Relays InterDigital discussion Rel-19

[R2-2410105](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410105%20Discussion%20on%20control%20plane%20aspects%20for%20NR%20sidelink%20multi-hop%20relay.docx) Discussion on control plane aspects for NR sidelink multi-hop relay China Telecom discussion Rel-19 DUMMY

[R2-2410184](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410184%20Remaining%20issues%20on%20SRB0%20message%20forwarding%20in%20multi-hop%20U2N%20Relay.docx) Remaining issues on SRB0 message forwarding in multi-hop U2N Relay ASUSTeK discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2410282](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410282%20Control%20plane%20in%20Multi-hop%20relay%20v1.0.doc) Control plane in Multi-hop relay Lenovo discussion Rel-19

[R2-2410297](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410297-Discussion%20on%20the%20control%20plane%20procedure%20for%20multi-hop%20U2N%20relay.docx) Discussion on the control plane procedure for multi-hop U2N relay LG Electronics Inc. discussion Rel-19

[R2-2410569](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410569_relay_CP.docx) Control Plane under multihop L2 U2N relaying Kyocera discussion

[R2-2410588](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410588%20Control%20Plane%20Procedures%20for%20Multi%20Hop%20Relays.docx) Control plane procedures for multi-hop relay Huawei, HiSilicon discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2410631](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410631%20On%20approach%201.docx) On approach 1 Nokia discussion NR\_SL\_relay\_multihop-Core

[R2-2410705](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410705-MH-Cplane.docx) discussion on C-plane procedure for multi-hop relay Sharp discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2410735](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410735-Control%20procedure%20for%20multi-hop%20L2%20based%20U2N%20relay.docx) Control procedure for multi-hop L2 based U2N relay Qualcomm Incorporated discussion NR\_SL\_relay\_multihop-Core

[R2-2410756](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410756_CP_v2.docx) Consideration on CP and UP issues for multi-hop SL relay Samsung discussion Rel-19 NR\_SL\_relay\_multihop-Core

### 8.13.4 Service continuity

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

[R2-2410736](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410736-service%20continuity.docx) Consideration on multi-hop U2N relay service continuity Qualcomm Incorporated discussion NR\_SL\_relay\_multihop-Core

Proposal 2 For scenario B, RAN2 supports the case that the target U2N relay UE is a new relay UE which is not on the source relay path, and existing Rel-17 indirect path to indirect path switching can be reused.

Proposal 3 For scenario B, RAN2 does not support the case that that the target U2N relay UE is an intermediate relay UE which is on the source relay path.

Proposal 4 For scenario B, RAN2 supports the case that last relay UE is unchanged, the solution should be postponed until the control plane solution is determined.

[R2-2409731](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409731%20-%20Service%20continuity%20of%20multi-hop%20U2N%20relay.docx) Service continuity of multi-hop U2N relay OPPO discussion Rel-19 NR\_SL\_relay\_multihop-Core

[Scenario A]

Proposal 1 RAN2 to confirm that the intra-gNB switching from indirect to direct path procedure defined in TS 38.300 for single hop case can be used as the baseline for multi-hop indirect to direct path switching.

Proposal 2 RAN2 to discuss event X1 /X2 can be reused in multi-hop indirect to direct path switching with the understanding that the “first relay UE” in multi-hop relay link is “serving L2 U2N Relay UE” to be reported.

[Scenario B]

Proposal 3 RAN2 to confirm the intra-gNB switching from indirect path to indirect path procedure defined in TS 38.300 in single hop case can be used as baseline for multi-hop indirect to single hop indirect path switching procedure.

[Chair’s note: “multi-hop indirect to direct” in P4 seems to be a typo for “mulit-hop indirect to single-hop indirect”, i.e., scenario B]

Proposal 4 RAN2 to discuss the following measurement event can be reused in multi-hop indirect to direct path switching:

- Event Y2

- Event Z1 with the understanding that the “first relay UE” in multi-hop relay link is “serving L2 U2N Relay UE” to be reported.

[R2-2410589](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410589%20Discussion%20on%20service%20continuity%20for%20multi-hop%20relays.docx) Discussion on service continuity for Multi-hop Relay Huawei, HiSilicon discussion Rel-19 NR\_SL\_relay\_multihop-Core

[Figures in proposals refer to R2-2410589]

Proposal 2: Agree the above procedure in Figure 1 as a baseline for intra-gNB multi-hop indirect to direct path switching procedure to be captured in TS 38.300.

Proposal 4: Agree the above procedure in Figure 2 as a baseline for intra-gNB multi-hop indirect to single-hop indirect path switching to be captured in TS 38.300.

[R2-2410034](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410034%20Discussion%20on%20service%20continuity%20for%20multi-hop%20relay.doc) Discussion on service continuity for multi-hop SL relay ZTE Corporation, Sanechips discussion Rel-19 NR\_SL\_relay\_multihop-Core

Proposal 3: When an intermediate relay detects PC5 link quality of an intermediate hop becoming worse, it should notify the downstream intermediate relays/remote UEs.

Proposal 4: Introduce a new measurement report event for multi-hop indirect path switching:

- Event X3: Upon receiving a notification that an intermediate hop becomes worse than threshold.

Proposal 7: For the measurements of the serving multi-hop indirect path in the measurement report, it may include at least the first intermediate relay UE ID and the PC5 link quality with the first intermediate relay. FFS the PC5 link quality status of intermediate hops.

[R2-2409634](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409634_Discussion%20on%20Service%20continuity%20for%20multi-hop%20relay.docx) Discussion on Service continuity for multi-hop relay vivo discussion Rel-19

[R2-2409861](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409861%20Intra-gNB%20Service%20Continuity%20for%20Multi-hop%20U2N%20Relay.docx) Intra-gNB Service Continuity for Multi-hop U2N Relay CATT discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2410106](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410106%20Discussion%20on%20service%20continuity%20for%20multi-hop%20relay.docx) Discussion on service continuity for multi-hop relay China Telecom discussion Rel-19 DUMMY

[R2-2410185](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410185%20Discussion%20on%20measurement%20report%20for%20multi-hop%20U2N%20Relay.docx) Discussion on measurement report for multi-hop U2N Relay ASUSTeK discussion Rel-19 NR\_SL\_relay\_multihop

[R2-2410201](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410201_Service%20Continuity%20for%20Multihop%20Relays.docx) Service Continuity for Multi-Hop Relays Ericsson discussion Rel-19

[R2-2410283](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410283%20Service%20continuity%20in%20Multi-hop%20relay%20v1.0.doc) Service continuity for Multi-hop system Lenovo discussion Rel-19

[R2-2410299](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410299-Discussion%20on%20service%20continuity%20for%20multi-hop%20U2N%20relay.docx) Discussion on service continuity for multi-hop U2N relay LG Electronics Inc. discussion Rel-19

[R2-2410354](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410354_Considerations%20on%20Service%20Continuity%20of%20Multi-hop%20Relay.docx) Considerations on Service Continuity of Multi-hop Relay NEC discussion Rel-19

[R2-2410706](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410706-MH-ServiceContinuity.docx) discussion on service continuity for multi-hop relay Sharp discussion Rel-19 NR\_SL\_relay\_multihop-Core

[R2-2410828](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410828_ServCont.docx) Initial considerations on service continuity Samsung discussion Rel-19 NR\_SL\_relay\_multihop-Core

## 8.15 NavIC L1 SPS A-GNSS support

(LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core; leading WG: RAN2; REL-19; WID [RP-242414](https://www.3gpp.org/ftp/meetings_3gpp_sync/ran/docs/RP-241264.zip))

Time budget: 0.5 TU

Tdoc Limitation: 1 tdoc

[R2-2409573](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409573%20Introduction%20of%20NavIC%20in%20A-GNSS%20positioning.docx) Introduction of NavIC in A-GNSS positioning ZTE Corporation discussion Rel-19 LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core

[R2-2409723](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409723-Discussion%20on%20Introduction%20of%20NavIC%20L1%20SPS%20support%20to%20A-GNSS%20positioning.docx) Discussion on Introduction of NavIC L1 SPS support to A-GNSS positioning Reliance Jio, CEWiT discussion Rel-19 LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core

[R2-2409724](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409724-Introduction%20of%20NavIC%20L1%20SPS%20A-GNSS%20in%20LTE%20Stage%202%20specification.docx) Introduction of NavIC L1 SPS A-GNSS in LTE Stage 2 specification Reliance Jio, CEWiT, Ericsson, Huawei CR Rel-19 36.305 18.0.0 0120 - B LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core

[R2-2409725](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409725-Introduction%20of%20NavIC%20L1%20SPS%20A-GNSS%20in%20NR%20Stage%202%20specification.docx) Introduction of NavIC L1 SPS A-GNSS in NR Stage 2 specification Reliance Jio, CEWiT, Ericsson, Huawei CR Rel-19 38.305 18.3.0 0179 - B LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core

[R2-2409726](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409726-Introduction%20of%20NavIC%20L1%20A-GNSS%20in%20LPP.docx) Introduction of NavIC L1 SPS A-GNSS in LPP Reliance Jio, ISRO, CEWiT, MediaTek, Ericsson CR Rel-19 37.355 18.3.0 0532 - B LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core

[R2-2410161](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410161%20Discussion%20on%20the%20support%20of%20NavIC%20L1%20SPS.docx) Discussion on the support of NavIC L1 SPS Huawei, HiSilicon discussion Rel-19 LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core

[R2-2410243](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410243%20A-GNSS%20support%20for%20NavIC%20L1%20SPS.docx) A-GNSS support for NavIC L1 SPS NEC discussion Rel-19 LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Core

## 8.16 BDS B2b in A-GNSS

(BDS\_B2b; leading WG: RAN2; REL-19; WID [RP-242413](https://www.3gpp.org/ftp/meetings_3gpp_sync/ran/docs/RP-241264.zip))

Time budget: 0.25 TU

Tdoc Limitation: 1 tdoc

[R2-2409574](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409574%20Introduction%20of%20BDS%20B2b%20in%20A-GNSS%20positioning.docx) Introduction of BDS B2b in A-GNSS positioning ZTE Corporation discussion Rel-19 LCS\_BDS\_B2b\_LTE\_NR-Core

[R2-2409627](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2409627%2037.355_%28Rel-19%29.docx) Introduction of B2b signal in BDS system in A-GNSS CATT, CAICT, Ericsson, Huawei, HiSilicon draftCR Rel-19 37.355 18.3.0 B LCS\_BDS\_B2b\_LTE\_NR-Core

[R2-2410158](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410158%20Introduction%20of%20BDS%20B2b%20in%20A-GNSS%20for%20TS%2036305.docx) Introduction of BDS B2b in A-GNSS for TS 36305 Huawei, HiSilicon, CAICT, CATT, Ericsson CR Rel-19 36.305 18.0.0 0121 - B LCS\_BDS\_B2b\_LTE\_NR

[R2-2410159](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410159%20Introduction%20of%20BDS%20B2b%20in%20A-GNSS%20for%20TS%2038305.docx) Introduction of BDS B2b in A-GNSS for TS 38305 Huawei, HiSilicon, CAICT, CATT, Ericsson CR Rel-19 38.305 18.3.0 0180 - B LCS\_BDS\_B2b\_LTE\_NR

[R2-2410160](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410160%20Discussion%20on%20the%20remaining%20issues%20for%20BDS%20B2b.docx) Discussion on the remaining issues for BDS B2b Huawei, HiSilicon discussion Rel-19 LCS\_BDS\_B2b\_LTE\_NR

## 8.18 TEI19

Time budget: 1 TU

Tdoc Limitation: 1 tdoc

Companies are encouraged to submit co-sourced contributions, which will have priority for discussion in RAN2#128. Tdoc limit applies to all contributions and primary co-sourcing company (if co-sourced).

Including incoming LS from CT1 C1-245500. No input expected in this meeting.

[R2-2410675](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410675%20Corrections%20to%20TS%2038.331%20on%20SL%20Relay%20enhancement.doc) Corrections to TS 38.331 on SL Relay enhancement CMCC, Media Tek Inc., CATT CR Rel-19 38.331 18.3.0 5180 - B TEI19

[R2-2410676](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202411%20-%20RAN2_128%2C%20Orlando%5CExtracts%5CR2-2410676%20Corrections%20to%20TS%2038.300%20on%20SL%20Relay%20enhancement.doc) Corrections to TS 38.300 on SL Relay enhancement CMCC, Media Tek Inc., CATT CR Rel-19 38.300 18.3.0 0940 - B TEI19