3GPP TSG-RAN WG2 Meeting #113bis-e R2-21xxxxx

Online, 12-20 April 2021

Source: Session Chair (MediaTek)

Title: Report of session on positioning and sidelink relay

# Status of At-Meeting Email Discussions

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

* [AT113bis-e][600][POS][Relay] Organisational Nathan – Positioning/Relay (MediaTek)

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

Intended outcome: Well-informed participants

Deadline: Tuesday 2021-04-20 1800 UTC

* [AT113bis-e][601][POS] Positioning Corrections for R-15 and earlier (Huawei)

Scope: Discuss and conclude on the following documents:

* R2-2102916 (field description of commonIEsProvideAssistanceData)
* R2-2102917/ R2-2102918 (posSI acquisition)
* R2-2103216/ R2-2103217/ R2-2103218 (SUPL support)
  + Cross-check with discussion [602] for consistency with R2-2103219/R2-2103220
* R2-2103604/ R2-2103605/R2-2103606/R2-2103607/R2-2103608/R2-2103609/R2-2103610/R2-2103616/R2-2102987 (need codes)

Intended outcome: Agreed CRs

Deadline: Friday 2021-04-16 1000 UTC

* [AT113bis-e][602][POS] Positioning corrections for NR Rel-15 (Samsung)

Scope: Discuss and conclude on R2-2103219/R2-2103220 on SUPL support

Intended outcome: Agreed CRs

Deadline: Friday 2021-04-16 1000 UTC

* [AT113bis-e][603][Relay] Proposals from summary of agenda item 8.7.4.1 (ZTE)

Scope: Continue discussion of the summary of AI 8.7.4.1 and try to reach agreeable proposals.

Intended outcome: Report in R2-2104405

Deadline: Friday 2021-04-16 1000 UTC

* [AT113bis-e][604][Relay] Proposals from summary of agenda item 8.7.4.2 (Futurewei)

Scope: Continue discussion of the summary of AI 8.7.4.2 and try to reach agreeable proposals.

Intended outcome: Report in R2-2104406

Deadline: Friday 2021-04-16 1000 UTC

* [AT113bis-e][605][POS] MO-LR handling and potential LS (Huawei)

Scope: Discuss the proposal in R2-2104046 and determine if some clarification is needed from SA2/CT1/CT4.

Intended outcome: Approved LS if needed, in R2-2104409

Deadline: Tuesday 2021-04-20 0800 UTC

* [AT113bis-e][606][POS] Positioning RRC open issues (Ericsson)

Scope: Discuss P2 and P3 from R2-2103920 and conclude on a CR if needed.

Intended outcome: Agreed CR in R2-2104410

Deadline: Tuesday 2021-04-20 0800 UTC

* [AT113bis-e][607][POS] LPP proposals (CATT)

Scope: Discuss the proposals in R2-2103129 and conclude on which are agreeable.

Intended outcome: Report to comeback session, in R2-2104411

Deadline: Tuesday 2021-04-20 0800 UTC

* [AT113bis-e][608][POS] SP positioning SRS activation/deactivation MAC CE (CATT)

Scope: Discuss R2-2104504 including backward compatibility aspects, and determine if a revision is needed.

Intended outcome: Agreed CR if possible, in R2-2104412

Deadline: Tuesday 2021-04-20 0800 UTC

* [AT113bis-e][609][Relay] Relay discovery configuration (Ericsson)

Scope: Discuss P1a/P4a/P9a/P9b-1/P9b-2/P9c/P12 and attempt to reach convergence.

Intended outcome: Report in R2-2104413

Deadline: Monday 2021-04-19 1000 UTC

* [AT113bis-e][610][Relay] AS criteria for relay (re)selection (InterDigital)

Scope: Discuss P12/P13/P15 from the (re)selection summary and attempt to down-select AS criteria for (re)selection.

Intended outcome: Report in R2-2104414

Deadline: Monday 2021-04-19 1000 UTC

* [AT113bis-e][611][Relay] Remaining proposals on relay (re)selection (Qualcomm)

Scope: Discuss the proposals for discussion from the (re)selection summary and converge where possible.

Intended outcome: Report in R2-2104415

Deadline: Monday 2021-04-19 1000 UTC

# 4 EUTRA corrections Rel-15 and earlier

See Appendix A for reference to Work items, work item codes and WIDs.

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

## 4.4 Positioning corrections Rel-15 and earlier

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

* [AT113bis-e][601][POS] Positioning Corrections for R-15 and earlier (Huawei)

Scope: Discuss and conclude on the following documents:

* R2-2102916 (field description of commonIEsProvideAssistanceData)
* R2-2102917/ R2-2102918 (posSI acquisition)
* R2-2103216/ R2-2103217/ R2-2103218 (SUPL support)
  + Cross-check with discussion [602] for consistency with R2-2103219/R2-2103220
* R2-2103604/ R2-2103605/R2-2103606/R2-2103607/R2-2103608/R2-2103609/R2-2103610/R2-2103616/R2-2102987 (need codes)

Intended outcome: Agreed CRs

Deadline: Friday 2021-04-16 1000 UTC

R2-2104517 Summary of [AT113bis-e][601][POS] Positioning Corrections for R-15 and earlier Huawei, HiSilicon discussion Rel-15

[R2-2102916](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\36355_CR0250_(Rel-14)_R2-2102916.docx) Corrections on the field description of commonIEsProvideAssistanceData in TS36.355 CATT, Huawei, HiSilicon CR Rel-14 36.355 14.7.0 0250 - F LTE\_feMTC-Core

[R2-2102917](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\36331_CR4611_(Rel-15)_R2-2102917.docx) Corrections on the acquisition of a posSI message CATT CR Rel-15 36.331 15.13.0 4611 - F LCS\_LTE\_acc\_enh-Core

[R2-2102918](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\36331_CR4612_(Rel-16)_R2-2102918.docx) Corrections on the acquisition of a posSI message CATT CR Rel-16 36.331 16.4.0 4612 - A LCS\_LTE\_acc\_enh-Core

[R2-2103216](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103216.docx) Correction on SUPL support of positioning methods Samsung CR Rel-14 36.305 14.3.0 0100 - F UTRA\_LTE\_iPos\_enh2-Core

[R2-2103217](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103217.docx) Correction on SUPL support of positioning methods Samsung CR Rel-15 36.305 15.5.0 0101 - A UTRA\_LTE\_iPos\_enh2-Core

[R2-2103218](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103218.docx) Correction on SUPL support of positioning methods Samsung CR Rel-16 36.305 16.2.0 0102 - A UTRA\_LTE\_iPos\_enh2-Core

R2-2103603 Correction to need code for DL LPP message-R16 Huawei, HiSilicon CR Rel-16 37.355 16.4.0 0297 - F NR\_pos-Core, NR\_newRAT-Core, LCS\_LTE\_acc\_enh-Core, NB\_IOTenh-Core, LTE\_feMTC-Core, LCS\_BDS-LTE-Core, LCS\_LTE Withdrawn

[R2-2103604](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103604%20Correction%20to%20need%20code%20for%20DL%20LPP%20message-R15.doc) Correction to need code for DL LPP message-R15 Huawei, HiSilicon CR Rel-15 37.355 15.1.0 0298 - F NR\_newRAT-Core, LCS\_LTE\_acc\_enh-Core, NB\_IOTenh-Core, LTE\_feMTC-Core, LCS\_BDS-LTE-Core, LCS\_LTE

* Revised in R2-2104524

R2-2104524 Correction to need code for DL LPP message-R15 Huawei, HiSilicon, Lenovo CR Rel-15 37.355 15.1.0 0298 1 F NR\_newRAT-Core, LCS\_LTE\_acc\_enh-Core

[R2-2103605](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103605%20Correction%20to%20need%20code%20for%20DL%20LPP%20message-R14.doc) Correction to need code for DL LPP message-R14 Huawei, HiSilicon CR Rel-14 36.355 14.7.0 0251 - F NB\_IOTenh-Core, LTE\_feMTC-Core, LCS\_BDS-LTE-Core, LCS\_LTE

[R2-2103606](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103606%20Correction%20to%20need%20code%20for%20DL%20LPP%20message-R13.doc) Correction to need code for DL LPP message-R13 Huawei, HiSilicon CR Rel-13 36.355 13.3.0 0252 - A LCS\_BDS-LTE-Core, LCS\_LTE

[R2-2103607](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103607%20Correction%20to%20need%20code%20for%20DL%20LPP%20message-R12.doc) Correction to need code for DL LPP message-R12 Huawei, HiSilicon CR Rel-12 36.355 12.5.0 0253 - F LCS\_BDS-LTE-Core, LCS\_LTE

[R2-2103608](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103608%20Correction%20to%20need%20code%20for%20DL%20LPP%20message-R11.doc) Correction to need code for DL LPP message-R11 Huawei, HiSilicon CR Rel-11 36.355 11.6.0 0254 - A LCS\_LTE

[R2-2103609](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103609%20Correction%20to%20need%20code%20for%20DL%20LPP%20message-R10.doc) Correction to need code for DL LPP message-R10 Huawei, HiSilicon CR Rel-10 36.355 10.12.0 0255 - A LCS\_LTE

[R2-2103610](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103610%20Correction%20to%20need%20code%20for%20DL%20LPP%20message-R9.doc) Correction to need code for DL LPP message-R9 Huawei, HiSilicon CR Rel-9 36.355 9.14.0 0256 - F LCS\_LTE

[R2-2103616](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103616%20Correction%20to%20need%20code%20for%20DL%20LPP%20message-R16.doc) Correction to need code for DL LPP message-R16 Huawei, HiSilicon CR Rel-16 37.355 16.4.0 0292 1 F NR\_pos-Core, NR\_newRAT-Core, LCS\_LTE\_acc\_enh-Core, NB\_IOTenh-Core, LTE\_feMTC-Core, LCS\_BDS-LTE-Core, LCS\_LTE R2-2101827

* Revised in R2-2104525

R2-2104525 Correction to need code for DL LPP message-R16 Huawei, HiSilicon, Lenovo CR Rel-16 37.355 16.4.0 0292 2 F NR\_pos-Core, NR\_newRAT-Core, LCS\_LTE\_acc\_enh-Core

# 5 Rel-15 WI: New Radio (NR) Access Technology

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

Only essential corrections. Includes all R15 NR drops and architectures.

NOTE: FOR R2#113bis-e it is expected that ~30% of the input tdocs under this AI will be selected for initial postponement to the next meeting.

## 5.5 Positioning corrections

Corrections to both the stage 2 and stage 3 aspects related to positioning. Stage 2 CRs 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.

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

* [AT113bis-e][602][POS] Positioning corrections for NR Rel-15 (Samsung)

Scope: Discuss and conclude on R2-2103219/R2-2103220 on SUPL support

Intended outcome: Agreed CRs

Deadline: Friday 2021-04-16 1000 UTC

[R2-2103219](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103219.docx) Correction on SUPL support of positioning methods Samsung CR Rel-15 38.305 15.8.0 0070 - F UTRA\_LTE\_iPos\_enh2-Core

[R2-2103220](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103220.docx) Correction on SUPL support of positioning methods Samsung CR Rel-16 38.305 16.4.0 0071 - A UTRA\_LTE\_iPos\_enh2-Core

# 6 Rel-16 NR Work Items

Essential corrections. While high maintenance intensity is expected, Rel-16 corrections are treated separately per WI.

Tdoc Limitation: 30 tdocs in total for all sub agenda items, or the restriction for each sub-AI, whichever is more restrictive.

NOTE: FOR R2#113bis-e it is expected that ~30% of the input tdocs under this AI will be selected for initial postponement to the next meeting.

## 6.3 NR Positioning Support

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

(NR TEI16 Positioning)

Documents in this agenda item will be handled in a break out session

Tdoc Limitation: 7 tdocs, See also tdoc limitation for Agenda Item 6

### 6.3.1 General and Stage 2 corrections

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

This agenda item may use a summary document (decision to be made based on submitted tdocs).

Summary document

[R2-2104018](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104018%20Summary%20AI_6_3_1.docx) Summary of agenda item 6.3.1 - REL-16 NR Positioning Stage 2 Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_pos-Core Late

Proposal 1: RAN2 to discuss if the interpretation in Rapporteur’s comments under section 2.1 is correct or not. If the Rapporteur’s comment is correct, it is proposed to not agree the CR in R2-2103922 but instead RAN2 may consider a clarification to TS 37.355 for the description of NR-DL-PRS-ProcessingCapability IE.

Proposal 2: RAN2 to put the CR in R2-2104046 on hold and send LS to SA2 and CT4 copying CT1 to get clarification on the purpose of including LPP PDU in the LCS MO-LR Request in the UL NAS TRANSPORT message form UE to AMF and whether there are any rules or restriction about which LPP messages/IE can be included in the LPP PDU.

Proposal 3: RAN2 to complete the discussion on CR in R2-2104048 for support of UE positioning measurements in RRC\_IDLE for NB-IoT UE and decide whether to agree the CR.

Discussion:

P1:

Ericsson understand that the RRC signalling allows the UE to populate the message for all four PFLs, but the LPP capability indicates that the UE processes one at a time.

vivo agree with the rapporteur and think this is not a stage 2 issue.

Qualcomm wonder what happens if one PFL is in FR1 and the other in FR2: Would there still be one request per PFL? They think the interpretation by Ericsson is similar to LTE but the NR concept of PFL is somewhat different, and suggest this could be handled by network implementation.

Huawei have the same view as the rapporteur and wonder why the processing of a single PFL would be related to the signalling for the measurement gap.

Samsung have the same view as vivo.

* Noted (can consider in future if there is an issue).

P2:

Huawei would be OK to have the LS and wait on the CR, but they think the LS should go to CT1/CT4 with SA2 in Cc:.

Qualcomm think the spec is clear and there are already test cases from LTE, but could accept sending an LS.

Nokia agree some clarification is needed and think 23.273 is a bit open for interpretation.

* [AT113bis-e][605][POS] MO-LR handling and potential LS (Huawei)

Scope: Discuss the proposal in R2-2104046 and determine if some clarification is needed from SA2/CT1/CT4.

Intended outcome: Approved LS if needed, in R2-2104409

Deadline: Tuesday 2021-04-20 0800 UTC

P3:

vivo think this is not a correction but an enhancement.

CATT understand that this is for ng-eNB connected to 5GC, and support the CR.

Huawei think it is a correction because this is already supported in the current positioning architecture, but not captured in the stage 2.

Intel support the CR but think the WI code should not be for NR positioning. Chair suggests it could be TEI16.

Qualcomm want to clarify that this is not applicable to NR positioning methods, because the NR measurements are only applicable in RRC\_CONNECTED. They agree for RAT-independent this should be supported. Huawei confirm there is no intention to apply it to NR positioning methods, and since this is for an NB-IoT UE connected to ng-eNB, there can be no NR positioning.

Ericsson think it is not clear in the CR what positioning procedures it would be used for and suggest email checking.

Qualcomm think the CR matches what we have in LTE, and in light of Huawei’s comment they don’t think we need email checking.

Huawei point out this was discussed last meeting, and based on feedback received then they understand it was intended to be agreed, with some chapter numbering fixed. They understand that companies want to have it reflected for commercial use cases, hence Rel-16 only.

Intel agree no email is needed and we can take the CR as it is.

* Agreed in principle with WI code changed to TEI16, in R2-2104407.

The following documents will not be individually treated

[R2-2103922](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103922%20UE%20PFL.docx) UE handling of Positioning Frequency Layer Ericsson CR Rel-16 38.305 16.4.0 0060 1 F NR\_pos-Core R2-2101385

* Not pursued

[R2-2104046](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104046%20Correction%20to%20NR%20stage2%20spec%20for%20MO-LR.DOC) Correction to NR stage2 spec for MO-LR Huawei, HiSilicon CR Rel-16 38.305 16.4.0 0072 - F NR\_pos-Core

* Revised in R2-2104527

R2-2104527 Correction to NR stage2 spec for MO-LR Huawei, HiSilicon CR Rel-16 38.305 16.4.0 0072 1 F NR\_pos-Core

R2-2104047 Correction to LTE stage2 spec for MO-LR Huawei, HiSilicon CR Rel-16 36.305 16.2.0 0103 - F LCS\_LTE, TEI16 Withdrawn

[R2-2104048](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104048%20Correction%20to%205G%20support%20for%20NB-IOT%20positioning.doc) Correction to 5G support for NB-IOT positioning Huawei, HiSilicon CR Rel-16 38.305 16.4.0 0069 1 F NR\_pos-Core R2-2101929

* Agreed in principle with WI code changed to TEI16, in R2-2104407.

### 6.3.2 RRC corrections

Including impact to 36.331, 38.331, and 38.306.

This agenda item may use a summary document (decision to be made based on submitted tdocs).

Summary document

[R2-2103920](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103920.docx) Summary for RRC NR Positioning Ericsson discussion Late

Proposal 1 RAN2 to agree CR R2-2102924 for the corrections of description of SRS-Config to reflect positioning impacts.

Proposal 2 RAN2 to discuss CR R2-2103849 and agree to clarify that SI offset is applicable for all the SI in the posSISchedulingInfoList.

Proposal 3 RAN2 to discuss and agree to clarify as why each posSIB cannot be contained only in a single SI message.

Proposal 4 The CR to clarify posSI-RequesConfig is for normal UL or Supplementary Uplink is not agreed as it requires similar change also for legacy field description

Discussion:

P1:

Ericsson think the slash in the field description should be a comma.

* Agreed in principle with the slash changed to a comma, in R2-2104408.

P2:

CATT agree with the rapporteur that adding “all” is good enough.

Ericsson think we should just add “all”.

Apple think the change in the field description can be simplified and it is OK to remove the second sentence.

Nokia wonder if this was intentional to leave scheduling flexibility and think it could be left to implementation.

Intel agree with the CR, and think if we only have the first change it is still unclear if the network can indicate the field differently in different SIs. So they would prefer to have the second change as well.

vivo agree with removing the second sentence and think the description in section 5.2 is already clear.

Ericsson think the flexibility suggested by Nokia is not possible with the acquisition procedure we have, and we should clarify that this is consistent across the SI messages.

Lenovo are OK to align with the LTE behaviour, but think just the first change is not sufficient since the offset can be signalled per SI message.

* Email

P3:

Ericsson think we should clarify the intention.

Nokia think the rules are the same for SIBs and posSIBs, and the posSIB should appear in at most one SI message. Chair asks about different GNSS constellations; Nokia understand that in this case they should appear in the same SI message but maybe different instances.

Qualcomm think the existing text is aligned with the proposal already and the omission of the posSIB was intentional.

* Noted (can discuss by email if a CR is needed)

P4:

Ericsson think we should not change as it would create a mismatch with the legacy field.

Lenovo think the CR does not take UL carrier selection into account and anyway the UE will only use one. They understand that this is why it was not captured in the legacy field description.

* CR is not pursued
* [AT113bis-e][606][POS] Positioning RRC open issues (Ericsson)

Scope: Discuss P2 and P3 from R2-2103920 and conclude on a CR if needed.

Intended outcome: Agreed CR in R2-2104410

Deadline: Tuesday 2021-04-20 0800 UTC

The following documents will not be individually treated

[R2-2102924](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\38331_CR2490_(Rel-16)_R2-2102924.docx) Corrections on the description of SRS-Config CATT CR Rel-16 38.331 16.4.1 2490 - F NR\_pos-Core

* Agreed in principle with the slash changed to a comma, in R2-2104408.

[R2-2103849](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103849_38.331CR_r16_posSI_offset.docx) Correction on the SI offset usage of posSI Scheduling Apple CR Rel-16 38.331 16.4.1 2539 - F NR\_pos-Core

[R2-2103919](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103919%20Same%20posSIB.docx) Same posSIB-Type in multiple SI messages Ericsson discussion

* Noted

[R2-2104175](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104175%20(6.3.2)%20CR%20on%20POS%20si%20config%20SUL.docx) Correction on posSI-RequestConfig and posSI-RequestConfigSUL field description Samsung R&D Institute UK CR Rel-16 38.331 16.4.1 2559 - F NR\_pos-Core

* Not pursued

### 6.3.3 LPP corrections

This agenda item may use a summary document (decision to be made based on submitted tdocs).

Summary document

[R2-2103129](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103129%20Summary%20of%20AI%206.3.3%20LPP%20corrections.docx) Summary of AI 6.3.3 LPP corrections CATT discussion Rel-16 37.355 NR\_pos-Core Late

Easy to agree:

Proposal 1: RAN2 to discuss if it is agreeable to add a description for the mapping of reported value and the measured negative value, and if it is agreeable to add clarification that all DL PRS resource sets belonging to the same positioning frequency layer have the same value of the parameters dl-PRS-SubcarrierSpacing, dl-PRS-CyclicPrefix and dl-PRS-PointA. If so, have an offline email discussion to come up with a suitable text proposal for the modifications. [R2-2102920]

Proposal 2: RAN2 to agree adding a field description for nr-AdType and clarifying in the field description of that the codepoint ‘ul-srs’ is not used in this release. [R2-2102921]

Proposal 6: RAN2 to agree the correction to change the field name from nr-PositionCalculationAssistanceData to nr-PositionCalculationAssistance. And merge all of such typo related corrections into one CR. [R2-2103924]

Proposal 11: RAN2 to discuss whether it is agreeable to add the field description of additionalPaths, and if this course is pursued, to have an offline email discussion to come up with an agreeable text proposal. [R2-2104269]

Proposal 12: The CR to add description of the construction of timestamp and clarify these parameters comes from reference cell is not agreed, since nr-TimeStamp is also reported in DL-AoD and/or Multi-RTT measurement which has no reference cell for measurement report. [R2-2102786]

Need further discussion:

Proposal 3: RAN2 to discuss whether to agree to add the missing need codes in principle first and which corresponding version of the specifications need to be modified. If agreed to add the missing need codes, the details of the need codes should be further discussed case by case via an offline email discussion. [R2-2102987]

Proposal 4: RAN2 to discuss if it is agreeable to add a clarification about the LPP layer to RRC layer interaction when measurement gap is required for NR DL PRS measurements. If so, have an offline email discussion to come up with a suitable text proposal for the clarification. [R2-2103921]

Proposal 5: RAN2 to discuss whether to include updateRateTimeUnit and updateRateTime as substitute of expirationTime or in addition to the expirationTime for some posSIBs. [R2-2103923]

Proposal 7: RAN2 to discuss whether to agree the following corrections proposed by R2-2104049 [7] one by one by email discussion. [R2-2104049]

Proposal 8: RAN2 to discuss whether it is OK to replace the conditional presence tags for fields used in uplink messages with field description explained the conditions under which the field is present. If it is OK, to have an offline email discussion to check all the LPP IEs need to make such corrections. [R2-2104050]

Proposal 9: RAN2 to discuss whether it is OK to make above corrections proposed by R2-2104051 [9] one by one by email discussion. [R2-2104051]

Proposal 10: RAN2 to discuss whether need to further clarify the cases under which the two error types (locationServerErrorCauses, targetDevidceErrorCauses) should be included. [R2-2104052]

Discussion:

P1:

CATT think this is an essential CR and could be agreed as it is.

Qualcomm are OK with the CR, but think the second change duplicates what is already implied by the ASN.1 and there are therefore no interoperability problems. They see it as more an informative change.

Intel have the same view as Qualcomm and do not consider this an essential CR.

* [AT113bis-e][607][POS] LPP proposals (CATT)

Scope: Discuss the proposals in R2-2103129 and conclude on which are agreeable.

Intended outcome: Report to comeback session, in R2-2104411

Deadline: Tuesday 2021-04-20 0800 UTC

The following documents will not be individually treated

[R2-2102786](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102786%20%20Draft%20CR%20on%20timestamp%20reference%20in%20NR%20positioning%20measurement%20report.docx) 37.355 Draft CR on timestamp reference in NR positioning measurement report vivo draftCR Rel-16 37.355 16.4.0 NR\_pos-Core

[R2-2102920](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\37355_CR0294_(Rel-16)_R2-2102920.docx) Corrections on the field description of NR-AdditionalPathList and DL-PRS positioning frequency layer related parameters CATT CR Rel-16 37.355 16.4.0 0294 - F NR\_pos-Core

[R2-2102921](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\37355_CR0295_(Rel-16)_R2-2102921.docx) Corrections on NR-Multi-RTT-RequestAssistanceData CATT CR Rel-16 37.355 16.4.0 0295 - F NR\_pos-Core

R2-2102922 Corrections on the need code of segmentationInfo within CommonIEsRequestLocationInformation and CommonIEsProvideAssistanceData CATT CR Rel-16 37.355 16.4.0 0296 - F NR\_pos-Core Late

[R2-2102987](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102987_LPP_missing_need_codes.doc) Considerations on missing need codes in LPP Lenovo, Motorola Mobility discussion Rel-16 NR\_pos-Core

[R2-2103921](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103921%20PFLGap.docx) LPP Layer interaction with lower layers for Positioning Frequency layer and Measurement Gap Ericsson CR Rel-16 37.355 16.4.0 0288 2 F NR\_pos-Core R2-2102123

[R2-2103923](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103923%20granularExp.docx) Need of compact expirationTime Indication Ericsson discussion

[R2-2103924](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103924%20fieldname.docx) Correction of field description name Ericsson CR Rel-16 37.355 16.4.0 0299 - F NR\_pos-Core

[R2-2104049](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104049%20Correction%20to%20PRS%20configuration.doc) Correction to PRS configuration Huawei, HiSilicon CR Rel-16 37.355 16.4.0 0300 - F NR\_pos-Core

[R2-2104050](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104050%20Correction%20to%20the%20uplink%20LPP%20message.doc) Correction to the uplink LPP message Huawei, HiSilicon CR Rel-16 37.355 16.4.0 0301 - F NR\_pos-Core

[R2-2104051](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104051%20Correction%20to%20DL-PRS%20capability.doc) Correction to DL-PRS capability Huawei, HiSilicon CR Rel-16 37.355 16.4.0 0302 - F NR\_pos-Core

[R2-2104052](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104052%20Correction%20on%20positioning%20error%20reporting.doc) Correction on positioning error reporting Huawei, HiSilicon CR Rel-16 37.355 16.4.0 0303 - F NR\_pos-Core

[R2-2104269](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104269_CR_37355_additionalPaths.docx) Correction on the field description of additionPaths ZTE Corporation, Sanechips CR Rel-16 37.355 16.4.0 0304 - F NR\_pos-Core

### 6.3.4 MAC corrections

[R2-2102923](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\38321_CR1072_(Rel-16)_R2-2102923.docx) Corrections on SP Positioning SRS Activation and Deactivation MAC CE CATT CR Rel-16 38.321 16.4.0 1072 - F NR\_pos-Core

* Revised in R2-2104504

[R2-2104504](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\38321_CR1072r1_(Rel-16)_R2-2104504.docx) Corrections on SP Positioning SRS Activation and Deactivation MAC CE CATT CR Rel-16 38.321 16.4.0 1072 - F NR\_pos-Core

Discussion:

Qualcomm wonder if a description is needed for the bit order of the split fields (which field holds the MSB).

Huawei think the CR is correct in principle: The length of the field should be extended. On Qualcomm’s comment, they think there is some general description in 38.321 and would like to check offline.

Nokia are OK with the CR.

* [AT113bis-e][608][POS] SP positioning SRS activation/deactivation MAC CE (CATT)

Scope: Discuss R2-2104504 including backward compatibility aspects, and determine if a revision is needed.

Intended outcome: Agreed CR if possible, in R2-2104412

Deadline: Tuesday 2021-04-20 0800 UTC

# 7 Rel-16 EUTRA Work Items

Essential corrections

## 7.5 LTE Positioning

(NavIC, LTE TEI16 Positioning)

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

[R2-2104264](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104264%20Correction%20to%20LTE%20stage2%20spec%20for%20MO-LR.DOC) Correction to LTE stage2 spec for MO-LR Huawei, HiSilicon CR Rel-16 36.305 16.2.0 0104 - F LCS\_LTE, TEI16

* Revised in R2-2104526

R2-2104526 Correction to LTE stage2 spec for MO-LR Huawei, HiSilicon CR Rel-16 36.305 16.2.0 0104 1 F LCS\_LTE, TEI16

# 8 Rel-17 NR Work Items

## 8.7 NR Sidelink relay SI

(NR\_XYZ\_enh-Core; leading WG: RAN2; REL-17; WID: RP-210904)

Time budget: 1.5 TU

Tdoc Limitation: 5 tdocs

Email max expectation: 4-5 threads

Focus for this meeting: Progress the common topics on relay discovery and re/selection (including identification of the potential AS re/selection criteria other than signal strength), and understand dependencies on other groups.

### 8.7.1 Organizational

TS updates, rapporteur inputs. Documents in this AI do not count towards the tdoc limitation.

[R2-2102890](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102890%20-%20Work%20planning%20for%20R17%20SL%20relay-rm1.docx) Work planning for R17 SL relay OPPO, CMCC Work Plan Rel-17

=> Revised in R2-2104299

[R2-2104299](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104299%20-%20Work%20planning%20for%20R17%20SL%20relay.docx) Work planning for R17 SL relay OPPO, CMCC Work Plan Rel-17

CATT wonder about some aspects of the Q3 work plan. Can be discussed offline.

* Noted

Running CR rapporteurs:

- 38.300: MediaTek

- 38.304: Ericsson

- 38.306: Qualcomm

- 38.321: OPPO

- 38.322/323: Apple

- 38.331: Huawei

- 38.3xx (adaptation layer): OPPO

Work on the CRs is expected to start from RAN2#115-e (stage 2 may start earlier depending on outcomes of this meeting). Rapporteurs should judge whether to start the running CR immediately from RAN2#115-e or later on, based on the agreements and spec impact.

Agreements from the SI phase are valid unless a decision is taken to revert them; RAN2 do not need to re-confirm each point individually.

### 8.7.2 Relay discovery

Re-using LTE discovery as baseline.

Summary document

[R2-2104297](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104297%20Summary%20of%208.7.2%20relay%20discovery_v3.doc) Summary of 8.7.2 relay discovery Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

Proposal 0: [Easy] R2 confirm the following SI phase agreements

Model A and model B discovery model as defined in clause 5.3.1.2 of TS 23.303 [3] are supported for UE-to-Network Relay.

The protocol stack of discovery message is described in Figure 4.2-1 of TR 38.836.

For Relay UE of UE-to-Network Relay,

- The Relay UE needs to be within a minimum and a maximum Uu signal strength threshold(s) if provided by gNB before it can transmit discovery message when in RRC\_IDLE or in RRC\_INACTIVE state.

- Relay UE is allowed to transmit discovery message based on NR sidelink communication configuration provided by gNB in all RRC states.

For Remote UE of UE-to-Network Relay,

- The Remote UE in RRC\_IDLE and RRC\_INACTIVE state is allowed to transmit discovery message if measured signal strength of serving cell is lower than a configured threshold.

- No additional network configuration is needed for Uu measurement by Remote UE in RRC\_IDLE or RRC\_INACTIVE.

- Remote UE out of coverage is always allowed to transmit discovery message based on pre-configuration while not connected with network through a Relay UE yet.

- For Remote UE supporting L3 UE-to-Network Relay which is out of coverage and connected to a gNB indirectly, it is not feasible for the serving gNB to provide radio configuration to transmit discovery message.

A new LCID is introduced for discovery message, i.e., discovery message is carried by a new SL SRB.

Proposal 3a: [Easy] As in LTE, the RRC\_IDLE/RRC\_INACTIVE relay UE is able to perform discovery message transmission, in case:

- Uu RSRP is above a configured minimum threshold by a hysteresis and below a configured maximum threshold by a hysteresis, or

- only minimum threshold is provided and Uu RSRP is above the minimum threshold by a hysteresis, or

- only maximum threshold is provided and Uu RSRP is below the maximum threshold by a hysteresis

Proposal 3b: [Easy] As in LTE, the RRC\_IDLE/RRC\_INACTIVE remote UE is able to perform discovery message transmission, if and only if Uu RSRP of serving cell is below a configured minimum threshold by a hysteresis.

Proposal 5: [Easy] Define threshHighRelay and threshLowRelay for relay UE and threshHighRemote for remote UE. The value range for the three thresholds can be half of RSRP-Range specified in TS 38.331.

Proposal 8a: [Easy] One new SL-SRB4 is used for all discovery messages. Its parameters will be fixed and defined as SCCH configuration in 38.331. (FFS on the LCH priority in Proposal 8b)

Proposal 10: [Easy] No ciphering and integrity protection in PDCP layer is needed for the discovery messages.

Discussion:

ZTE have a concern on the first sub-bullet of P3a; they think perhaps there should be hysteresis here as well. Huawei agree this is needed. ZTE also think the value range of P5 can be discussed in stage 3, and on P3b wonder if it implies that the UE would stop discovery transmission if the RSRP is above the threshold.

vivo think P13 duplicates P6 in (re)selection and prefer the (re)selection version.

InterDigital think the intention of P11 is to reuse mode 1/mode 2 resource allocation for discovery, and they think it is too early to conclude that this is the same for data.

Kyocera think P10 would not be applicable for U2U.

Ericsson think P11 is not right even as a baseline, because the transmission mechanism may be different for relay and remote UE, e.g. the remote UE may not be able to use mode 1.

Qualcomm think for P11, the only issue seems to be the remote UE under mode 1.

Xiaomi wonder if the case in P14 is real; they assume the gNB only provides one type of relay.

Nokia wonder if we can agree to P10; they agree security can be done in upper layers but think we should leave an opening and this is outside RAN2 expertise to do without consulting SA3. Huawei point out there is no company proposal to use PDCP and this would be a new feature; P10 is to reuse the LTE mechanism, which was confirmed by SA3 in LTE. Qualcomm think it is not possible to apply AS security in PDCP layer for discovery, because it is a broadcast message. OPPO agree.

MediaTek think P14 assumes a base station supporting both relay architectures, and they think it is a bit unclear why this would happen. They also note that L2/L3 coexistence is discussed in the CP agenda item. Ericsson have the same concern.

OPPO think P14 is unlikely in a single gNB, but from the network perspective we should assure that a similar configuration can be applied.

Proposal 1a: [For discussion] Discovery message use the shared resource pool as baseline. RAN2 to decide on the supporting of separated resource pool from below options:

* Option 1: Not support separate resource pool.
* Option 2: Also support the separated resource pool, but assume the PHY layer parameters and design will re-use the R16 legacy resource pool design.

Proposal 4a: [For discussion] As in LTE, the remote UE and relay UE in the RRC\_CONNECTED can use the threshold based methods as in IDLE/INACTIVE, to determine whether it is allowed to perform discovery message transmission.

Proposal 4b: [For discussion] FFS on the whether to use the dedicated configuration or SIB configuration.

Proposal 7a: [For discussion] The discovery message content may include: Relay UE’s serving cell ID, Relay UE’s PLMN ID and Relay architecture (i.e. L2 or L3 relay), with detailed formulation left to SA2. (This does not exclude other alternatives.)

Proposal 7b: [For discussion] Send LS to SA2: some AS parameters (at least the agreed ones in P7a) need to be encapsulated by upper layer in discovery message.

Proposal 8b: [Easy] RAN2 to discuss whether to use fixed or configurable logical channel priority for the SL-SRB of discovery message.

Proposal 9a: [For discussion]

For discovery configuration, relay UE and remote UE use the configuration provided via dedicated signaling, if available, in RRC CONNECTED state; Relay UE and remote UE use configuration provided via SIB, if available, in RRC IDLE/INACTIVE state. FFS if relay UE and remote UE can use the configuration provided via SIB, if dedicated configuration is not available, in RRC CONNECTED state.

Proposal 9b-1: [For discussion]

L3 relay UE use pre-configuration for discovery, only if the discovery configuration is not provided by gNB (regardless not provided, or not able to provide, or not able to obtain in OOC, etc.), in case its serving carrier is not shared with carrier for sidelink operation. Otherwise, L3 relay UE use the configuration for discovery provided by gNB.

Proposal 9b-2: [For discussion]

L2 relay UE can only use the configuration for discovery provided by gNB (either via SIB or dedicated signaling).

Proposal 9c: [For discussion]

Both L2 and L3 Remote UE perform discovery based on pre-configuration, only if the discovery configuration is not provided by gNB (regardless not provided, or not able to provide, or not able to obtain in OOC, etc.), in case its serving carrier is not shared with carrier for sidelink operation. Otherwise, Remote UE use the configuration for discovery provided by gNB.

Proposal 12: [For discussion] Transmission power of discovery message is handled same as R16 SL data transmission.

Discussion:

Ericsson wonder if we would send an LS to SA2 as in P7a/P7b. Chair thinks we have not agreed anything to notify them of. OPPO tend to think we should be conservative about sending LSs considering the deadline, and even if we send an urgent LS it would be difficult to get a response by the deadline. OPPO also do not see why this LS is necessary and understand that SA2 are already discussing the issue of discovery message content. Ericsson think SA2 and RAN2 are doing overlapping discussion and we should indicate what we need.

* [AT113bis-e][609][Relay] Relay discovery configuration (Ericsson)

Scope: Discuss P1a/P4a/P9a/P9b-1/P9b-2/P9c/P12 and attempt to reach convergence.

Intended outcome: Report in R2-2104413

Deadline: Monday 2021-04-19 1000 UTC

The following documents will not be individually treated

[R2-2102687](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102687%20-%20Discussion%20on%20relay%20discovery.doc) Discussion on relay discovery Qualcomm Incorporated discussion

[R2-2102698](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102698_Discovery%20for%20Sidelink%20U2N%20Relay.docx) Discovery for Sidelink U2N Relay CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102806](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102806%20(R17%20SL%20Relay%20SI%20AI872%20Discovery).doc) Discovery Procedure for sidelink relay InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102978](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102978%20Discussion%20on%20Relay%20discovery%20in%20Sidelink%20Relay.doc) Discussion on Relay discovery in Sidelink Relay ZTE Corporation, Sanechips discussion Rel-17

[R2-2103000](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103000%20-%20Left%20issues%20for%20SL%20discovery.docx) Left issues for SL discovery Ericsson discussion Rel-17

[R2-2103006](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103006%20Discussion%20on%20NR%20sidelink%20relay%20disovery.docx) Discussion on NR sidelink relay discovery OPPO discussion Rel-17

[R2-2103010](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103010%20NR%20SL%20Relaying%20Discovery.docx) NR Sidelink Relaying Discovery Fraunhofer IIS, Fraunhofer HHI discussion Rel-17

[R2-2103071](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103071.docx) SL Relay Discovery Aspects Intel Corporation discussion Rel-17 NR\_SL\_enh-Core

[R2-2103085](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103085%20SL%20relay%20discovery%20message.doc) SL relay discovery message Samsung discussion Rel-17

[R2-2103205](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103205%20Discussion%20on%20sidelink%20relay%20discovery.doc) Discussion on sidelink relay discovery SHARP Corporation discussion

[R2-2103227](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103227_disc_pool.doc) Discovery resources for sidelink relaying Kyocera discussion Rel-17

[R2-2103229](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103229_discovery.doc) Relay discovery considerations Kyocera discussion Rel-17

[R2-2103236](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103236%20Discussion%20on%20relay%20discovery.docx) Discussion on relay discovery Spreadtrum Communications discussion Rel-17

[R2-2103323](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103323_Discussion%20on%20Relay%20Discovery%20Procedure.docx) Discussions on Relay discovery procedure vivo discussion Rel-17

[R2-2103389](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103389%20Relay%20Discovery%20in%20L2%20and%20L3%20U2N%20relay%20v2.0.doc) Relay Discovery in L2 and L3 U2N relay Lenovo, Motorola Mobility discussion Rel-17

[R2-2103424](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103424-%20Sidelink%20Relay%20Discoveryv2.docx) Sidelink Relay Discovery, Open Issues Beijing Xiaomi Mobile Software discussion Rel-17

[R2-2103493](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103493%20Support%20of%20discovery%20for%20sidelink%20relay_v2.docx) Support of discovery for sidelink relay Huawei, HiSilicon discussion Rel-17

[R2-2103498](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103498%20Restricted%20Sidelink%20Relay%20Discovery%20Within%20Sidelink%20Groupcast.docx) Restricted Sidelink Relay Discovery Within Sidelink Groupcast Nokia Germany discussion Rel-17 FS\_NR\_SL\_relay

[R2-2103575](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103575%20On%20Relay%20Discovery.docx) On relay discovery MediaTek Inc. discussion Rel-17

[R2-2103856](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103856%20PC5%20Radio%20link%20quality%20evaluation.doc) Evaluation of PC5 link quality based on relay discovery Apple discussion

[R2-2103992](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103992.docx) Discovery message transmission LG Electronics Inc. discussion

### 8.7.3 Relay re/selection

Re-using LTE re/selection as baseline. Including potential AS criteria for re/selection.

Summary document

[R2-2104287](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104287%20-%20Summary%20of%20AI%208.7.3%20-%20Relay%20(re)selection%20(QC).doc) Summary of Agenda Item 8.7.3 (relay selection/reselection) Qualcomm Incorporated discussion Rel-17 FS\_NR\_SL\_relay

(“Easy” proposals for block approval:)

Proposal 1: For relay (re)selection, RAN2 clarify that only the common parts of L2 and L3 relay is required to be completed by RAN#92. L2 specific design may be discussed in L2 relay agenda items in contribution driven manner.

Proposal 4: RAN2 confirm below NR relay (re)selection procedures which are same as LTE Prose relay:

1) PC5 Measurement: For relay(s) without unicast PC5 sconnection, remote UE uses RSRP measurements of sidelink discovery messages (i.e. SD-RSRP) to evaluate whether PC5 link quality of a Relay UE satisfies relay selection and reselection criterion

2) Trigger of relay selection: Triggered at remote UE when: a) direct Uu link quality is below a configured threshold for an in-coverage remote UE (in IDLE/INACTIVE and CONNECTED for L3 U2N relay; L2 case to be further discussed); or b) triggered by upper layer

3) Trigger of relay reselection: Triggered at remote UE when: a) PC5 measurement towards current relay UE is below a (pre)configured threshold; or b) Reception of an upper layer release message or similar indication from current relay UE; or c) Triggered by upper layer

4) How to choose relay UE in relay (re)selection: Remote UE searches for suitable relay UE candidates which meet all AS-layer & higher layer criteria. If multiple such candidate relay UEs available, it is up to Remote UE implementation to choose one Relay UE.

Proposal 5: Same as LTE, Uu link threshold (like threshHigh-r13), PC5 link threshold(like q-RxLevMin-r13), L3 filter coefficient for SD-RSRP/SL-RSRP (like filterCoefficient-r13) and hysteresis (like hystMax-r13 and minHyst-r13) can be provided via SIB/RRC by gNB or pre-configuration. Handling of Uu link threshold being absent can reuse LTE approach (i.e. when absence, remote UE considers condition to be met).

Proposal 6: In SD-RSRP measurement for relay (re)selection trigger and candidate relay evaluation, L3 filtering is applied across measurements on the DMRS of PSSCH transmission which carries discovery message from the concerned relay.

Proposal 8: RAN2 confirm that remote UE triggers relay reselection if PC5 RLF with current relay UE is detected by remote UE. FFS if there is any impact to other RLF handling activities.

Proposal 14: Uu quality between relay UE and gNB is not included in discovery message as additional AS criteria for relay (re)selection

Proposal 16: Include the information required for agreed additional AS criteria in discovery message.

Discussion:

OPPO think the LS in P16 should be discussed after we finalise the AS criteria. Qualcomm think this can be discussed offline.

MediaTek think item 2 in P4 is only applicable to L3 relay and there is no equivalent for L2. Qualcomm clarify it originally listed both, but there was a concern about reusing this baseline for L2, and the L2 part is reflected in P18 for offline discussion. Huawei understand for L3 RRC\_CONNECTED remote UE, there is the possibility that reselection is triggered by remote UE itself, and for L2 we have an RRC connection through the relay that needs to be switched at reselection. MediaTek wonder if we can apply the same principle to L3 and L2. Qualcomm suggest that we include both L2 and L3 relay but indicate that it does not preclude gNB-controlled reselection. OPPO prefer the original version. Huawei agree with OPPO.

Intel wonder if the word “discovery” should be included in P6. Qualcomm point out it is in the last sentence.

Ericsson think we have not discussed PC5 RLF in relation to P8. Qualcomm point out this actually was in the TR.

(Proposals for discussion:)

Proposal 18: Same as LTE, CONNECTED remote UE in L2 U2N relay can also trigger relay selection when directly Uu link quality is below a configured threshold. It doesn’t exclude the option of gNB decision on relay selection.

Proposal 12: Discuss online whether to adopt relay load as an additional criterion for relay UE (re)selection with below alternative metrics:

a. Number of PC5 connections to Remote UEs currently being actively used for relaying

b. Resource pool usage or capacity

c. Data rate at the different layers of the relay UE(s) for relaying data

d. Buffering capacity available or buffer load for relayed data on the Relay UE

e. Average time the relayed data stays within the Relay UE

f. Number of remote UEs being served by the relay UE

Proposal 13: During relay (re)selection, remote UE can be aware of serving cell ID and PLMN ID of candidate relay UEs. RAN2 discuss whether they can be specified as additional AS criteria for relay (re)selection

Proposal 15: Besides RLF, serving cell ID, PLMN ID, relay load (if they are agreed in relay reselection session) and L2/L3 relay support (if agreed in discovery session), other AS criteria are not considered in this release.

Proposal 3: For L2/L3 relay common parts of relay (re)selection, RAN2 confirm that there is no support of service continuity from AS layer perspective. gNB controlled path switch for service continuity belongs to L2 relay service continuity agenda item.

(Proposals for offline discussion:)

Proposal 2: Because gNB decision on relay selection/reselection and QoS controlled relay (re)selection are L2 relay specific design, they are not treated in relay (re)selection discussion by RAN#92

Proposal 7: RAN2 discuss which alternatives of PC5 measurement to trigger relay reselection. The discussion should consider conclusion of transmit power of discovery message made in discovery session (e.g. whether fixed power or can be configured subject to OLPC)

* Alt-1: Based on only SL-RSRP. In case of no data transmission, remote UE may use keep-alive message if available or triggered PC5-S/CSI reporting if available from relay UE to perform SL-RSRP measurement based on its implementation.
* Alt-2: Based on both SL-RSRP and SD-RSRP. If data is available, only SL-RSRP of data. In case of no data transmission, the remote UE triggers reselection based on SD-RSRP

Proposal 9: When Uu RLF is detected by relay UE, relay UE sends the indication/message, e.g., in Proposal 4-3-b to its connected remote UE(s) to trigger relay reselection.

Proposal 10: When relay performs HO to another gNB, relay UE sends the indication/message, e.g., in Proposal 4-3-b to its connected remote UE(s) to trigger relay reselection.

Proposal 11: When PC5 RLF is detected by relay UE on a PC5 unicast link towards a remote UE, relay UE sends the PC5 RLF report including available PC5 measurements of the PC5 unicast link to gNB.

Proposal 17: When relay (re)selection is triggered, the remote UE may perform cell (re)selection and relay (re)selection procedure independently. When both a suitable cell and a suitable relay are available, the remote UE can select either one based on its implementation in this release, i.e. TS 38.304 will not specify this procedure.

* [AT113bis-e][610][Relay] AS criteria for relay (re)selection (InterDigital)

Scope: Discuss P12/P13/P15 from the (re)selection summary and attempt to down-select AS criteria for (re)selection.

Intended outcome: Report in R2-2104414

Deadline: Monday 2021-04-19 1000 UTC

* [AT113bis-e][611][Relay] Remaining proposals on relay (re)selection (Qualcomm)

Scope: Discuss the proposals for discussion from the (re)selection summary and converge where possible.

Intended outcome: Report in R2-2104415

Deadline: Monday 2021-04-19 1000 UTC

The following documents will not be individually treated

[R2-2102692](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102692%20-%20Discussion%20on%20relay%20(re)selection.doc) Discussion on relay (re)selection Qualcomm Incorporated discussion

[R2-2102699](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102699_Sidelink%20Relay%20(Re)Selectoin.docx) Sidelink Relay (Re)Selection CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102807](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102807%20(R17%20SL%20Relay%20SI%20AI873%20Relay%20selection).doc) Relay selection and reselection InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102960](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102960%20Further%20considerations%20on%20relay%20(re)selection%20-%20final.docx) Further considerations on relay (re)selection ETRI discussion

[R2-2102977](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102977%20Discussion%20on%20Relay%20selection%20in%20Sidelink%20Relay.doc) Discussion on Relay selection in Sidelink Relay ZTE Corporation, Sanechips discussion Rel-17

[R2-2103001](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103001%20-%20Aspects%20for%20SL%20relay%20selection%20and%20reselection.docx) Aspects for SL relay selection and reselection Ericsson discussion Rel-17

[R2-2103007](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103007%20Discussion%20on%20NR%20sidelink%20relay%20UE%20(re-)selection.docx) Discussion on NR sidelink relay (re-)selection OPPO discussion Rel-17

[R2-2103009](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103009-NR%20Sidelink%20Relay%20(Re-)Selection.docx) NR Sidelink Relay (Re-)Selection Fraunhofer IIS, Fraunhofer HHI discussion Rel-17

[R2-2103086](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103086%20SL%20relay%20selection%20and%20reselection%20triggering%20criteria.doc) SL relay selection and reselection triggering criteria Samsung discussion Rel-17

[R2-2103237](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103237%20Discussion%20on%20relay%20selection%20and%20reselection.doc) Discussion on relay selection and reselection Spreadtrum Communications discussion Rel-17

[R2-2103311](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103311%20UE-to-Nwk%20Relay%20Discovery%20and%20(Re)selection%20for%20Path%20Switching.docx) UE-to-Nwk Relay Discovery and (Re)selection for Path Switching in SL Relay Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_SL\_relay R2-2101211

[R2-2103324](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103324_Discussion%20on%20Relay%20(re-)selection%20procedure.docx) Discussions on Relay (re-)selection procedure vivo discussion Rel-17

[R2-2103390](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103390%20Relay%20(re)selection%20for%20L2%20and%20L3%20U2N%20case_v1.1.doc) Relay (re)selection for L2 and L3 U2N case Lenovo, Motorola Mobility discussion Rel-17

[R2-2103422](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103422-Sidelink%20Relay%20Reselection.docx) Sidelink Relay Reselection and Selection, proposal for outline procedure Beijing Xiaomi Mobile Software discussion Rel-17

[R2-2103423](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103423%20NR%20sidelink%20relay%20(re)selection.docx) NR sidelink relay (re)selection MediaTek Inc. discussion

[R2-2103584](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103584.doc) Relay (re)selection Sony Europe B.V. discussion Rel-17

[R2-2103667](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103667%20RelaySelection.docx) Discussion on relay selection and reselection Nokia, Nokia Shanghai Bell discussion Rel-17

[R2-2103717](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103717%20Consideration%20on%20Relay%20selection%20and%20reselection.docx) Consideration on Relay selection and reselection CMCC discussion Rel-17 FS\_NR\_SL\_relay

[R2-2103739](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103739_Relay_selection_Intel.docx) Discussion on SL Relay (re)selection Intel Corporation discussion Rel-17

[R2-2103884](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103884_sidelink%20relay%20reselection.docx) Discussion on sidelink relay (re)selection Apple discussion Rel-17

[R2-2103993](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103993.docx) Relay UE selection criterion using SL-unicast and discovery message LG Electronics Inc. discussion Rel-17

[R2-2103994](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103994.docx) Relay (re-)selection and path switching LG Electronics Inc. discussion Rel-17

[R2-2103995](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103995.docx) Discovery message contents and relay selection criteria LG Electronics Inc. discussion Rel-17

[R2-2104130](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104130.docx) Discussion on relay selection and reselection Huawei, HiSilicon discussion Rel-17 FS\_NR\_SL\_relay

[R2-2104262](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104262%20-%20Relay%20UE%20load%20as%20an%20additional%20AS%20criterion%20for%20relay%20(re-)selection.docx) Relay UE load as an additional AS criterion for relay (re-)selection Philips International B.V. discussion Rel-17 FS\_NR\_SL\_relay

### 8.7.4 L2 relay specific topics

No documents should be submitted to 8.7.4. Please submit to 8.7.4.x.

#### 8.7.4.1 Control plane procedures

Including connection management, SI delivery, paging, access control for remote UE. Connection management topics will be prioritised.

Summary document

R2-2104503 Summary document of AI 8.7.4.1 ZTE discussion

* [AT113bis-e][603][Relay] Proposals from summary of agenda item 8.7.4.1 (ZTE)

Scope: Continue discussion of the summary of AI 8.7.4.1 and try to reach agreeable proposals.

Intended outcome: Report in R2-2104405

Deadline: Friday 2021-04-16 1000 UTC

The following documents will not be individually treated

[R2-2102693](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102693%20-%20RRC%20management%20procedures%20of%20L2%20U2N%20relay.doc) RRC management procedures of L2 U2N relay Qualcomm Incorporated discussion

[R2-2102695](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102695%20-%20System%20information%20paging%20delivery%20and%20UAC%20in%20L2%20U2N%20relay.doc) System information, paging delivery and UAC in L2 U2N relay Qualcomm Incorporated discussion

[R2-2102700](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102700%20Control%20Plane%20Procedures%20of%20L2%20Relay.docx) Control Plane Procedures of L2 Relay CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102701](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102701_Service%20Continuity%20for%20L2%20U2N%20Relay.docx) Service Continuity for L2 U2N Relay CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102747](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102747%20-%20Discussion%20on%20Control%20Plane%20Aspects%20for%20L2%20Relay_v2.docx) Discussion on Control Plane Aspects for L2 Relay OPPO discussion Rel-17 Late

[R2-2102779](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102779%20Connection%20establishment%20for%20L2%20UE-to-Network%20Relay.docx) Connection establishment for L2 UE-to-Network Relay MediaTek Inc. discussion Rel-17

[R2-2102780](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102780%20Further%20details%20on%20System%20Information%20Delivery.docx) Further details on System Information Delivery MediaTek Inc. discussion Rel-17

[R2-2102809](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102809%20(R17%20SL%20Relay%20SI_AI8741%20Connection_management).doc) Connection Management for L2 UE to NW Relays InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102810](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102810%20(R17%20SL%20Relay%20SI_AI8741%20CP%20Procedures).doc) Control Plane Procedures for L2 UE to NW Relays InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102891](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102891%20-%20Left%20issues%20on%20RRC%20procedure%20for%20L2%20U2N%20Relay.docx) Left issues on RRC procedure for L2 U2N Relay OPPO discussion Rel-17

[R2-2102968](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102968%20Connection%20control%20on%20L2%20relay.doc) Connection on L2 relay Xiaomi communications discussion

[R2-2102969](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102969%20Discussion%20on%20resource%20allocation%20for%20remote%20UE.doc) Discussion on resouce allocation for remote UE Xiaomi communications discussion

[R2-2102974](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102974%20The%20connection%20management%20of%20SL%20relay.doc) The connection management of SL relay ZTE Corporation, Sanechips discussion Rel-17

[R2-2102975](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102975%20Discussion%20on%20system%20information%20paging%20and%20access%20control.doc) Discussion on system information paging and access control ZTE Corporation, Sanechips discussion Rel-17

[R2-2103087](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103087%20Connection%20management%20in%20L2%20U2N%20relay.doc) Connection management in L2 U2N relay Samsung discussion Rel-17

[R2-2103088](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103088%20System%20information%20delivery%20via%20relay%20UE.doc) System information delivery via relay UE Samsung discussion Rel-17

[R2-2103203](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103203%20U2N%20connection%20establishment.docx) UE to Network Relay Connection Establishment Futurewei discussion Rel-17

[R2-2103231](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103231_L2_relaying.doc) RRC state transitions in L2 relaying Kyocera discussion Rel-17

[R2-2103310](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103310%20Support%20of%20idle%20mode%20mobility%20for%20remote-UE%20in%20SL%20U2N%20relay.docx) Support of idle mode mobility for remote-UE in SL UE-to-Nwk relay Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_SL\_relay R2-2101325

[R2-2103325](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103325_RRC%20Connection%20Management%20for%20L2%20relay.docx) RRC Connection Management for L2 relay vivo discussion Rel-17

[R2-2103326](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103326_Control%20Plane%20procedure%20for%20L2%20SL%20Relay.docx) Control Plane procedure for L2 SL Relay vivo discussion Rel-17

[R2-2103328](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103328_Discussion%20on%20L2%20and%20L3%20relay%20co-existence.docx) Discussions on L2 and L3 relay co-existence vivo discussion Rel-17

[R2-2103458](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103458%20Discussion%20on%20RRC%20procedures%20for%20U2N%20Relay.docx) Discussion on RRC procedures for U2N Relay ASUSTeK discussion Rel-17

[R2-2103482](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103482%20SIB%20Handling%20in%20Sidelink%20UE-to-Nwk%20Relay.docx) SIB Handling in Sidelink UE-to-Nwk Relay Nokia Germany discussion Rel-17 FS\_NR\_SL\_relay

[R2-2103662](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103662-%20Discussion%20on%20control%20plane%20procedures%20for%20L2%20sidelink%20relay.docx) Discussion on control plane procedures for L2 sidelink relay Ericsson discussion Rel-17

[R2-2103663](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103663-%20Discussion%20on%20service%20continuity%20for%20L2%20sidelink%20relay.docx) Discussion on service continuity for L2 sidelink relay Ericsson discussion Rel-17

[R2-2103718](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103718%20System%20information%20delivery%20for%20L2%20U2N%20Relay.docx) System information delivery for L2 U2N Relay CMCC discussion Rel-17 FS\_NR\_SL\_relay

[R2-2103738](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103738_SLRelay_ControlPlane_Intel.docx) Control plane procedures for L2 U2N relaying Intel Corporation discussion Rel-17

[R2-2103742](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103742%20Monitoring%20Paging%20by%20a%20U2N%20Relay.doc) Monitoring Paging by a U2N Relay Lenovo, Motorola Mobility discussion Rel-17

[R2-2103744](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103744%20SI%20acquisition,%20CN%20Registration%20and%20RNAU.doc) SI acquisition, CN Registration and RNAU Lenovo, Motorola Mobility discussion

[R2-2103857](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103857%20QOS%20for%20Layer%202%20UE-to-NW%20relay.doc) Discussion on QoS mechanism for Layer 2 UE-to-NW relay Apple discussion

[R2-2103956](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103956%20-%20SL%20Relay%20CP.docx) Control plane multi-connectivity for NR Sidelink Relay UE AT&T discussion

[R2-2103996](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103996.docx) L2 relay QoS handling procedure LG Electronics Inc. discussion Rel-17

R2-2104126 Service continuity of L2 U2N relay Qualcomm communications-France discussion Late

[R2-2104131](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104131.docx) Discussion on the CP procedures for L2 Relay Huawei, HiSilicon discussion Rel-17 FS\_NR\_SL\_relay

[R2-2104132](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104132.docx) Discussion on path switch for L2 UE to NW Relay Huawei, HiSilicon discussion Rel-17 FS\_NR\_SL\_relay

[R2-2104245](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104245-discussion%20on%20Paging%20and%20SI%20delivery.doc) discussion on Paging and SI delivery for L2 U2N relay ETRI discussion Rel-17

#### 8.7.4.2 Protocol architecture

Including protocol stack aspects and functions of the adaptation layer. This AI will be treated on a time-available basis, prioritising any topics that may require coordination with other groups.

Summary document

R2-2104505 Summary document for AI 8.7.4.2 Futurewei discussion

* [AT113bis-e][604][Relay] Proposals from summary of agenda item 8.7.4.2 (Futurewei)

Scope: Continue discussion of the summary of AI 8.7.4.2 and try to reach agreeable proposals.

Intended outcome: Report in R2-2104406

Deadline: Friday 2021-04-16 1000 UTC

The following documents will not be individually treated

[R2-2102694](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102694%20-%20Adaptation%20layer%20and%20E2E%20QoS%20management%20of%20L2%20U2N%20relay.doc) Adaptation layer and E2E QoS handling of L2 U2N relay Qualcomm Incorporated discussion

[R2-2102702](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102702_Study%20on%20Adaption%20Layer%20for%20L2%20U2N%20Relay.docx) Study on the Adaption Layer for L2 U2N Relay CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102781](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102781%20Adaptation%20layer%20for%20PC5%20at%20L2%20UE-to-Network%20Relay.docx) Adaptation layer for PC5 at L2 UE-to-Network Relay MediaTek Inc. discussion Rel-17

[R2-2102808](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102808%20(R17%20SL%20Relay%20WI_AI8742%20Protocol%20Architectures)%20.doc) Discussion on L2 Relay Architecture and QoS InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2102892](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102892%20-%20Left%20issues%20on%20adaptation%20layer%20for%20L2%20U2N%20Relay.docx) Left issues on adaptation layer for L2 U2N Relay OPPO discussion Rel-17 Late

[R2-2102976](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102976%20Discussion%20on%20SL%20relay%20protocol%20architecture.doc) Discussion on SL relay protocol architecture ZTE Corporation, Sanechips discussion Rel-17

[R2-2103002](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103002%20-UP%20aspects%20on%20Layer%202%20SL%20relay.docx) UP aspects for Layer 2 SL relay Ericsson discussion Rel-17

[R2-2103235](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103235.doc) Discussion on L2 Relay Architecture and QoS Spreadtrum Communications discussion Rel-17

[R2-2103327](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103327_Adaptation%20Layer%20for%20L2%20SL%20Relay.docx) Adaptation Layer for L2 SL Relay vivo discussion Rel-17

[R2-2103459](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103459%20Discussion%20on%20presence%20of%20adaptation%20layer%20header%20for%20U2N%20Relay.docx) Discussion on presence of adaptation layer header for U2N Relay ASUSTeK discussion Rel-17

[R2-2103494](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103494%20Adaptation%20layer%20functionalities%20for%20L2%20U2N%20relay_v3.docx) Adaptation layer functionalities for L2 U2N relay Huawei, HiSilicon discussion Rel-17

[R2-2103514](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103514%20Adaptation%20layer%20and%20other%20protocol%20stack%20aspects%20for%20L2%20relaying%20-r2.doc) Adaptation layer and other protocol stack aspects for L2 relaying Samsung Electronics GmbH discussion

[R2-2103719](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103719%20PC5%20adaption%20layer%20for%20L2%20U2N%20relay.docx) PC5 adaption layer for L2 U2N relay CMCC discussion Rel-17 FS\_NR\_SL\_relay

[R2-2103720](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103720%20Consideration%20on%20Uu%20adaption%20layer.docx) Consideration on Uu adaption layer CMCC discussion Rel-17 FS\_NR\_SL\_relay

[R2-2103737](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103737_SLRelay_adaptation_layer_Intel.docx) Adaptation layer design for L2 U2N relaying Intel Corporation discussion Rel-17

## 8.11 NR positioning enhancements

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

Time budget: 1.5 TU

Tdoc Limitation: 5 tdocs

Email max expectation: 5-6 threads

Support for BDS B2a, BDS B3I signal and support for NavIC to NR is postponed to a later meeting. Input on this is not expected. Further instructions may be added to this version.

### 8.11.1 Organizational

Rapporteur input. Incoming LS etc. This AI is reserved for rapporteur and organizational inputs; documents in this AI do not count towards the tdoc limitation.

[R2-2102959](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102959%20NR_POS_WP_v08.docx) Work plan on Rel-17 positioning Work item Intel Corporation, CATT, Ericsson discussion Rel-17 NR\_pos\_enh

Running CR rapporteurs:

1 BDS (38.305, 36.305, 37.355, 38.331/36.331 (if broadcast is supported)): CATT for all

2 NavIC (38.305, 38.331 (if broadcast is supported)):

- 38.305 Huawei

- 38.331 Ericsson

3 Integrity (38.305, 36.305, 37.355, 38.331/36.331 (if broadcast is supported)):

- 38.305 InterDigital

- 36.305 InterDigital

- 37.355 Qualcomm

- 38.331 Ericsson

- 36.331 Huawei

4 RAT dependent:

- 38.305: Intel

- Capability discussion (include changes for 38.306, 38.331 and 37.355): Intel

- 37.355: Qualcomm

- 38.331 (except capability part): Ericsson

- User plane (if any): Huawei

5 Merged version, i.e. the version submitted to RANP:

- 38.305: Intel

- Capability discussion (include 38.306 and 38.331 changes): Intel (may be merged into Mega Capability CR as R16)

- 37.355: Qualcomm

- 38.331 (except capability part): Ericsson

- 36.305: CATT

- 36.331: Huawei

- User plane (if any): Huawei

[R2-2102665](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102665_S2-2102048.docx) LS on Scheduling Location in Advance to reduce Latency (S2-2102048; contact: Qualcomm) SA2 LS in Rel-17 5G\_eLCS\_ph2 To:RAN1, RAN2 Cc:RAN3

### 8.11.2 Latency

Enhancements of signalling, and procedures for improving positioning latency of the Rel-16 NR positioning methods, for DL and DL+UL positioning methods.

Summary document

[R2-2104498](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104498_(summary%20latency%20reduction%20AI).docx) Summary of Agenda Item 8.11.2: Positioning Latency Enhancements Qualcomm Incorporated discussion

Proposal 1: Send a reply LS to SA2 confirming that RAN2 will add support for a scheduled location time as part of Rel-17and as defined in SA2 CR0151 to 23.273 (S2-2102047).

Proposal 2: Continue evaluation of the RAN specification impacts for supporting a scheduled location time as defined in SA2 CR0151 to 23.273 (S2-2102047) including the following options:

(a) There are no RAN Stage3 specification changes required for supporting a scheduled location time

(b) The scheduled location time can be defined in relation to the reception of a measurement request message; e.g., LPP Request Location Information

(c) The scheduled location time is provided in location request messages and/or SRS configuration messages

- FFS the format for the scheduled location time T

- FFS any additional "QoS information" which may need to be conveyed together with the scheduled location time T

Proposal 3: Continue evaluation of the signalling and procedures to support preconfiguration of assistance data to the UE during the location preparation phase including the following aspects:

(a) Existing LPP/NRPPa and RRC procedures can be utilized for pre-configuration of positioning assistance data for measurements to the UE.

(b) New NRPPa/RRC procedures can be defined for pre-configuration of positioning assistance data for measurements to the UE.

(c) Definition of procedures for retaining and use of (one or more) preconfigured assistance data sets at the UE.

Proposal 6: With regard to latency reduction related to the measurement gaps postpone the RAN2 discussion until more input/agreements from RAN1/RAN4 are available.

Proposal 9: With regard to the granularity of the LPP Response Time and LPP Reporting Interval, RAN2 should evaluate feasible/sensible values which can be supported, also taking any potential latency enhancements from this Work Item into account (e.g., any latency improvements on PHY measurements (RAN1), requirements from RAN4, etc.).

[Proposals inviting further contributions[

Proposal 4: With regard to lower-layer triggered requesting of measurements, interesting companies are encouraged to provide a more detailed end-to-end solution description of the proposed procedures, which should also allow an evaluation of the latency benefits and complexity, etc.

Proposal 5: With regard to prioritization of location measurements and reports, interesting companies are encouraged to provide a more detailed end-to-end solution description of the proposed procedures/methods/solutions, which should also allow an evaluation of the latency benefits and complexity, etc.

Proposal 7: With regard to configured UL grant for location reports, interesting companies are encouraged to provide a more detailed end-to-end solution description of the proposed procedures, which should also allow an evaluation of the latency benefits and complexity, etc.

Proposal 8: With regard to storing UE positioning capabilities in an LMF/AMF, interesting companies are encouraged to contribute to the ongoing SA2 discussion. RAN2 should await more progress in SA2 for determining any RAN2 impacts.

The following documents will not be individually treated

[R2-2102789](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102789%20Discussion%20on%20latency%20enhancement%20for%20R17%20positioning.docx) Discussion on latency enhancement for R17 positioning vivo discussion FS\_NR\_pos\_enh

[R2-2102849](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102849.docx) Consideration on latency reduction solutions Intel Corporation discussion Rel-17 NR\_pos\_enh

[R2-2102925](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102925%20Consideration%20on%20Latency%20Optimization%20of%20Assistance%20Data.docx) Consideration on Latency Optimization of Assistance Data CATT discussion Rel-17 NR\_pos\_enh

[R2-2103131](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103131%20Positioning%20enhancements%20on%20latency%20reduction.doc) Positioning enhancements on latency reduction Xiaomi discussion

[R2-2103144](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103144%20Consideration%20of%20the%20latency%20reduction%20regarding%20the%20scheduling%20the%20localization%20in%20advance.doc) Consideration of the latency reduction regarding the scheduling the localization in advance OPPO discussion Rel-17

[R2-2103382](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103382_PosLatencyReduction_LenMM.docx) Positioning Latency Reduction Enhancements Lenovo, Motorola Mobility discussion Rel-17

[R2-2103541](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103541%20Discussion%20on%20positioning%20latency.docx) Discussion on positioning latency Huawei, HiSilicon discussion Rel-17

[R2-2103614](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103614_Pos_latency_Final.docx) Considerations on positioning latency Sony Europe B.V. discussion Rel-17

[R2-2103785](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103785%20(R17%20NR%20POS%20WI_AI8112_Latency).doc) Enhancements for Latency Reduction InterDigital, Inc. discussion Rel-17 NR\_pos\_enh

[R2-2103898](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103898_(Scheduling%20in%20Advance).docx) Scheduling Location in Advance to reduce Latency Qualcomm Incorporated discussion

[R2-2103899](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103899_(Response%20LS%20to%20SA2%20on%20scheduling%20location%20in%20advance).docx) [draft] Response LS on Scheduling Location in Advance to reduce Latency Qualcomm Incorporated LS out To:SA2 Cc:RAN1, RAN3

[R2-2103914](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103914%20latency.docx) Reducing Latency for Positioning procedures Ericsson discussion

[R2-2104179](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104179%20(8.11.2)%20latency%20reduction%20on%20measurement%20reporting%20via%20configured%20grant%20for%20positioning%20%20.docx) Latency reduction via configured grant for positioning Samsung R&D Institute UK discussion

[R2-2104181](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104181(8.11.2)%20latency%20reduction%20via%20measurement%20gap%20signaling%20optimization.docx) Latency reduction via measurement gap signalling optimization Samsung R&D Institute UK discussion

[R2-2104274](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104274_positioning_latency_reduction.docx) Disucssion on latency reduction ZTE Corporation, Sanechips discussion Rel-17 NR\_pos\_enh-Core

[R2-2104275](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104275_positioning_periodic_PRS_measurement.docx) Discussion on preiodic PRS measurement ZTE Corporation, Sanechips discussion Rel-17 NR\_pos\_enh-Core

### 8.11.3 RRC Inactive

Methods, measurements, signalling and procedures to support positioning for UEs in RRC\_ INACTIVE state, for UE-based and UE-assisted positioning solutions.

Summary document

[R2-2104495](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104495%20Summary%20for%20AI%208.11.3%20RRC%20Inactive.docx) Summary for AI 8.11.3 RRC INACTIVE vivo discussion FS\_NR\_pos\_enh

[Proposals that may be agreeable]

Proposal 1: Deferred MT-LR should be supported in RRC\_INACTIVE.

Proposal 10: The following cases for positioning measurement and/or location estimate reporting should be supported:

- PRS measurement and/or location estimate performed in RRC\_CONNECTED or RRC\_INACTIVE can be sent in RRC\_INACTIVE

- PRS measurement and/or location estimate performed in RRC\_INACTIVE can be sent in RRC\_CONNECTED.

Proposal 14: The following RAT-independent positioning methods should be supported in RRC\_INACTIVE: A-GNSS, Motion Sensor, WLAN, TBS and Bluetooth.

[Proposals that require further discussion with high priority]

Proposal 2: To discuss whether MO-LR should be supported in RRC\_INACTIVE.

Proposal 3: To discuss whether SDT for positioning is used only when accuracy requirement is low.

Proposal 4: To further discuss whether UL LCS messages and LPP messages (in addition to ProvideLocationInformation) can be transferred in RRC\_INACTIVE via SDT.

Proposal 5: To further discuss whether DL LCS messages and LPP messages can be transferred in RRC\_INACTIVE if there is ongoing SDT for the UE.

Proposal 11: To discuss how to ensure suitable data volume threshold for measurement reporting via SDT, e.g. segmentation, report size optimization, dedicated RACH resource.

Proposal 12: To discuss whether the RRC state of UE is visible to LMF.

Proposal 13: To further discuss the support of UE-assisted DL NR E-CID method in RRC\_INACTIVE.

Proposal 15: Send an LS to RAN1 to study how to support the UL SRS transmission for UL positioning in RRC\_INACTIVE, including sync, power control, SRS spatial relation.

[Proposals that may require further discussion]

Proposal 6: If capability transfer via LPP in RRC\_INACTIVE is supported, to further discuss how to transfer.

Proposal 7: If assistance data transfer via LPP in RRC\_INACTIVE is supported, to further discuss how to transfer.

Proposal 8: To further discuss whether the enhancement of the current two ways to transfer assistance data should be supported.

Proposal 9: If location information request transmission in RRC\_INACTIVE can be supported, to further discuss how to transfer.

Proposal 16: RAN2 assumes that SRS is used for UL positioning in RRC\_INACTIVE, and SRS configuration for RRC\_INACTIVE can be delivered in RRCRelease message.

Proposal 17: RAN2 assumes that SRS is used for UL positioning in RRC\_INACTIVE, and RAN2 to discuss the delivery of SRS configuration in RRC\_INACTIVE.

Proposal 18: RAN2 assumes that SRS is used for UL positioning in RRC\_INACTIVE, and RAN2 to discuss TA maintenance mechanism for UE in RRC\_INACTIVE.

The following documents will not be individually treated

[R2-2102788](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102788%20Discussion%20DL%20positioning%20support%20in%20%20RRC_INACTIVE%20state.docx) Discussion DL positioning support in RRC\_INACTIVE states vivo discussion FS\_NR\_pos\_enh Withdrawn

[R2-2102798](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102798%20-%20Discussion%20on%20DL%20Positioning%20methods%20in%20RRC_INACTIVE%20state.docx) Discussion on DL Positioning methods in RRC\_INACTIVE state OPPO discussion Rel-17 FS\_NR\_pos\_enh

[R2-2102799](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102799%20-%20Discussion%20on%20UL%20Positioning%20methods%20in%20RRC_INACTIVE%20state.docx) Discussion on UL Positioning methods in RRC\_INACTIVE state OPPO discussion Rel-17 FS\_NR\_pos\_enh

[R2-2102850](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102850%20Support%20of%20Positioning%20in%20RRC_INACTIVE.docx) Support of Positioning in RRC\_INACTIVE Intel Corporation discussion Rel-17 NR\_pos\_enh

[R2-2102926](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102926%20Considerations%20on%20positioning%20for%20UEs%20in%20RRC_INACTIVE.docx) Considerations on Positioning for UEs in RRC\_INACTIVE state CATT discussion Rel-17 NR\_pos\_enh

[R2-2103130](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103130%20Positioning%20enhancements%20on%20RRC%20inactive%20UE.doc) Positioning enhancements on RRC Inactive UE Xiaomi discussion

[R2-2103383](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103383_Inactive_Idle_Positioning_LenMM.docx) On Positioning in RRC\_INACTIVE state Lenovo, Motorola Mobility discussion Rel-17

[R2-2103537](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103537%20Discussion%20on%20positioning%20in%20RRC%20INACTIVE%20state.docx) Discussion on positioning in RRC INACTIVE state Huawei, HiSilicon discussion Rel-17

R2-2103611 Considerations on positioning RRC Inactive Sony Europe B.V. discussion Rel-17 Late

[R2-2103612](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103612_Pos_Inactive_Final.docx) Considerations on positioning RRC Inactive Sony Europe B.V. discussion Rel-17

[R2-2103786](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103786%20(R17%20NR%20POS%20WI%20AI8113_INACTIVE).doc) Positioning in RRC INACTIVE state InterDigital, Inc. discussion Rel-17 NR\_pos\_enh

[R2-2103900](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103900_(positioning%20in%20inactive%20state).docx) Positioning of UEs in RRC Inactive State Qualcomm Incorporated discussion

[R2-2103915](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103915%20SDT.docx) On Usage of SDT for Positioning Ericsson discussion

[R2-2103997](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103997%20Inactive_Positioning.docx) Considerations on positioning in RRC\_INACTIVE Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_pos\_enh-Core

[R2-2104129](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104129%20UL%20and%20DL+UL%20NR%20positioning%20methods%20in%20RRC_INACTIVE.docx) UL and DL+UL NR positioning methods vivo Mobile Communication Co., discussion

[R2-2104183](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104183%20(8.11.3)%20ePOS%20inactive%20positioning.docx) Support of positioning result reporting in Inactive state Samsung R&D Institute UK discussion

[R2-2104272](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104272_positioning_dl_inactive_positioning.docx) Discussion on DL INACTIVE positioning ZTE Corporation, Sanechips discussion Rel-17 NR\_pos\_enh-Core

R2-2104280 Discussion DL positioning support in RRC\_INACTIVE states vivo Mobile Communication Co., discussion Withdrawn

[R2-2104282](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104282%20Discussion%20DL%20positioning%20support%20in%20%20RRC_INACTIVE%20state.docx) Discussion DL positioning support in RRC\_INACTIVE states vivo Mobile Communication Co., discussion

### 8.11.4 On-demand PRS

Specify UE-initiated and LMF-initiated on-demand transmission and reception of DL PRS for DL and DL+UL positioning for UE-based and UE-assisted positioning solutions

Summary document

R2-2103542 Summary of AI 8.11.4 for on-demand PRS Huawei, HiSilicon discussion Rel-17 Late

* Revised in R2-2104507

[R2-2104507](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104507%20Summary%20of%20AI%208.11.4%20for%20on-demand%20PRS.docx) Summary of AI 8.11.4 for on-demand PRS Huawei, HiSilicon discussion Rel-17

The following documents will not be individually treated

[R2-2102790](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102790%20on-demand%20PRS.docx) discuss on-demand PRS vivo discussion FS\_NR\_pos\_enh

[R2-2102797](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102797-%20Discussion%20on%20on-demand%20DL-PRS.doc) Discussion on on-demand DL-PRS OPPO discussion Rel-17 FS\_NR\_pos\_enh

[R2-2102851](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102851%20Support%20of%20on%20demand%20PRS.docx) On-Demand PRS transmission Intel Corporation discussion Rel-17 NR\_pos\_enh

[R2-2102927](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102927%20Discussion%20on%20on-demand%20PRS.docx) Discussion on on-demand PRS CATT discussion Rel-17 NR\_pos\_enh

[R2-2103132](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103132%20Discussion%20on%20on-demand%20DL%20PRS%20procedure.doc) Discussion on on-demand DL PRS procedure Xiaomi discussion

[R2-2103250](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103250%20Discussion%20on%20the%20enhancements%20of%20on-demand%20PRS.docx) Discussion on the enhancements of on-demand PRS Spreadtrum Communications discussion Rel-17

[R2-2103384](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103384_On-DemandPRS_LenMM.docx) On-Demand DL-PRS Support Lenovo, Motorola Mobility discussion Rel-17

[R2-2103538](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103538%20Discussion%20on%20on-demand%20PRS.docx) Discussion on on-demand PRS Huawei, HiSilicon discussion Rel-17

[R2-2103564](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103564.docx) On-demand PRS Fraunhofer IIS, Fraunhofer HHI discussion Rel-17

[R2-2103613](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103613_Pos_PRS_Ondemand_Final.docx) Considerations on positioning PRS On-demand Sony Europe B.V. discussion Rel-17

[R2-2103787](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103787%20(R17%20NR%20POS%20WI_AI8114_OnDemand).doc) Procedures for On-demand PRS InterDigital, Inc. discussion Rel-17 NR\_pos\_enh

[R2-2103858](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103858%20signaling%20for%20on%20demand%20PRS.doc) Discussion on the signaling support for on-demand PRS Apple discussion

[R2-2103901](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103901_(On-demand%20PRS).docx) On-demand PRS Qualcomm Incorporated discussion

[R2-2103916](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103916%20EnergySavings.docx) On demand PRS for energy savings Ericsson discussion

* Revised in R2-2104500

[R2-2104500](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104500.docx) On demand PRS for energy savings Ericsson discussion

* Revised in R2-2104508

[R2-2104508](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104508%20EnergySavings.docx) On demand PRS for energy savings Ericsson discussion

[R2-2103998](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103998%20On-demand%20PRS%20considerations.docx) On-demand PRS transmission considerations Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_pos\_enh-Core

[R2-2103999](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103999%20Enhancement%20to%20on-demand%20PRS.docx) Latency enhancement to on-demand PRS functionality Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_pos\_enh-Core

[R2-2104142](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104142%20UE-initiated%20requests%20for%20on-demand%20PRS.docx) UE-initiated requests for on-demand PRS Convida Wireless discussion

[R2-2104184](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104184%20(8.11.4)%20ePOS%20on%20demand%20DL%20PRS%20activation%20.docx) Support of on-demand DL PRS for positioning efficiency Samsung R&D Institute UK discussion

[R2-2104276](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104276_positioning_on_demand_PRS.docx) Discussion on on demand PRS ZTE Corporation, Sanechips discussion Rel-17 NR\_pos\_enh-Core

### 8.11.5 GNSS positioning integrity

Signalling, and procedures to support GNSS positioning integrity determination

Summary document

[R2-2104291](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104291_Summary_of_AI_8115_Integrity.docx) Summary of 8.11.5 GNSS positioning integrity InterDigital, Inc. discussion Rel-17 NR\_pos\_enh-Core

* Revised in R2-2104497

[R2-2104497](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104497_Summary_of_AI_8115_Integrity.docx) Summary of 8.11.5 GNSS positioning integrity InterDigital, Inc. discussion Rel-17 NR\_pos\_enh-Core

The following documents will not be individually treated

[R2-2102787](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102787%20Discussion%20on%20methodologies%20for%20network-assisted%20and%20UE-assisted%20integrity.docx) Discussion on methodologies for network-assisted and UE-assisted integrity vivo discussion FS\_NR\_pos\_enh

[R2-2102928](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102928%20Discussion%20on%20signalling%20and%20procedures%20to%20support%20GNSS%20positioning%20integrity.docx) Discussion on signalling and procedures to support GNSS positioning integrity CATT discussion Rel-17 NR\_pos\_enh

[R2-2102994](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102994%20Pos_Integrity.docx) Signalling and Procedures for Positioning Integrity Support Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_pos\_enh

[R2-2103133](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103133%20Discussion%20on%20methodologies%20for%20positioning%20integrity.doc) Discussion on signalling and procedures for GNSS positioning integrity Xiaomi discussion

[R2-2103145](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103145%20Introduction%20of%20positioning%20integrity%20related%20timer.doc) Introduction of positioning integrity related timer OPPO discussion Rel-17

[R2-2103539](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103539%20Discussion%20on%20network-assisted%20and%20UE-assisted%20integrity.docx) Discussion on network-assisted and UE-assisted integrity Huawei, HiSilicon discussion Rel-17

[R2-2103567](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103567.docx) UE-aided detection of threat to GNSS systems and assistance data signalling Fraunhofer IIS, Fraunhofer HHI discussion

[R2-2103750](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103750%20Guiding%20framework%20on%20integrity%20concepts%20for%20A-GNSS%20positioning.docx) Guiding framework on integrity concepts for A-GNSS positioning ESA discussion Rel-17 NR\_pos\_enh

[R2-2103788](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103788%20(R17%20NR%20POS%20WI%20AI8115_Integrity).doc) Procedures for GNSS positioning integrity InterDigital, Inc. discussion Rel-17 NR\_pos\_enh

[R2-2103917](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103917%20GNSS.docx) GNSS Integrity aspects of GNSS local environment and UE feared events Ericsson discussion

[R2-2103954](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Docs\R2-2103954.zip) Considerations on Positioning Integrity Determination Swift Navigation, Intel Corporation, Ericsson discussion

[R2-2104189](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104189%20(8.11.5)%20positioning%20integrity%20ePOS.docx) Consideration on the signalling design for Positioning Integrity Samsung R&D Institute UK discussion

[R2-2104273](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2104273_positioning_integrity_transportation.docx) Discussion on positioning integrity ZTE Corporation, Sanechips discussion Rel-17 NR\_pos\_enh-Core

### 8.11.6 Other

Input on other WI objectives.

[R2-2102929](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2102929%20Discussion%20on%20measurement%20report%20for%20accuracy%20improvement.docx) Discussion on Measurement Time Windows for accuracy improvement CATT discussion Rel-17 NR\_pos\_enh

[R2-2103540](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103540%20Discussion%20on%20positioning%20enhancement.docx) Discussion on R17 positioning enhancement Huawei, HiSilicon discussion Rel-17

[R2-2103789](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103789%20(R17%20NR%20POS%20WI%20AI8116_INACTIVE%20mobility).doc) Positioning during mobility and in RRC INACTIVE InterDigital, Inc. discussion Rel-17 NR\_pos\_enh

[R2-2103902](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103902_(Reference%20Devices).docx) Signalling and Procedures for supporting Reference Location Devices Qualcomm Incorporated discussion

[R2-2103918](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202104%20-%20RAN2_113bis-e,%20Online\Extracts\R2-2103918%20Accuracy.docx) On High Accuracy Aspects Ericsson discussion