3GPP TSG-RAN WG2 Meeting #118-e R2-22xxxxx

Online, 9-20 May 2022

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.

* [AT118-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: Friday 2022-05-20 1000 UTC

Relay rapporteur CRs:

* [AT118-e][611][Relay] 38331 relay CR (Huawei)

Scope: Update the rapporteur CR (R2-2205986), incorporating decisions of this meeting. Phase 1 attempts to resolve the main technical issues; phase 2 produces an initial draft of the decisions (expectation is that review of this CR may be extended to post-meeting).

Intended outcome: CR agreeable as a baseline for final review, in R2-2206231

Deadline: Phase 1 Friday 2022-05-13 1800 UTC, Phase 2 Wednesday 2022-05-18 0400 UTC

* [AT118-e][612][Relay] 38300 relay CR (MediaTek)

Scope: Update the rapporteur CR (R2-2204584), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2204991, R2-2204795, R2-2204990, R2-2205432, R2-2205781.

Intended outcome: Agreed CR (without CB if possible) in R2-2206232

Deadline: Wednesday 2022-05-18 0400 UTC

* [AT118-e][613][Relay] 38304 relay CR (Ericsson)

Scope: Develop a rapporteur CR, incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2205905, R2-2204992.

Intended outcome: Agreed CR (without CB if possible) in R2-2206233 (replaced by R2-2206589) and report in R2-2206588

Deadline: Wednesday 2022-05-18 0400 UTC

* [AT118-e][614][Relay] 38306 relay CR (Qualcomm)

Scope: Update the rapporteur CR (R2-2205880), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2204637, R2-2204638, R2-2204770, R2-2205988.

Intended outcome: Agreed CR (without CB if possible) in R2-2206234

Deadline: Phase 1 to agree on proposals: Friday 2022-05-13 1800 UTC; Phase 2 to agree CR Wednesday 2022-05-18 0400 UTC

* [AT118-e][615][Relay] 38321 relay CR (Apple)

Scope: Update the rapporteur CR (R2-2205648), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2204766, R2-2204767, R2-2204768, R2-2204769, R2-2205114, R2-2205610, R2-2204773, R2-2204993 (handling of R2-2205610 and R2-2204768 to be confirmed online Monday 2022-05-09).

Intended outcome: Agreeable CR in R2-2206235, report in R2-2206382

Deadline: Wednesday 2022-05-18 0400 UTC

* [AT118-e][616][Relay] 38322 and 38323 relay CRs (Samsung)

Scope: Update the rapporteur CRs (R2-2205607 and R2-2205608), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2205963, R2-2205611.

Intended outcome: Agreed CRs (without CB if possible) in R2-2206236 (38.322) and R2-2206237 (38.323)

Deadline: Wednesday 2022-05-18 0400 UTC – extended to Thursday 2022-05-19 0400 UTC

* [AT118-e][617][Relay] 38351 relay CR (OPPO)

Scope: Update the rapporteur CR (R2-2204632), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2204796, R2-2204797, R2-2205133, R2-2205431.

Intended outcome: Agreed CR (without CB if possible) in R2-2206238

Deadline: Wednesday 2022-05-18 0400 UTC

Relay other discussions:

* [AT118-e][618][Relay] 37985 relay TP (ZTE)

Scope: Evaluate the TP in R2-2204800 and produce an endorsable version.

Intended outcome: Endorsed TP in R2-2206239 and approved LS to RAN1 in R2-2206240 (without CBs)

Deadline: Wednesday 2022-05-18 0400 UTC

* [AT118-e][619][Relay] LS on SDU type in PDCP (ZTE)

Scope: Discuss the LS in R2-2204447 and related contributions (R2-2204633, R2-2204771, R2-2204772, R2-2204798, R2-2204799). Phase 1 should determine a way forward and a recommendation to be taken into account in the PDCP rapporteur CR; Phase 2 is to draft and approve the LS.

Intended outcome: Approved LS (without CB) in R2-2206241 (replaced by R2-2206466)

Deadline: Phase 1 Friday 2022-05-13 1800 UTC, Phase 2 Wednesday 2022-05-18 0400 UTC

* [AT118-e][620][Relay] System information issues (Qualcomm)

Scope: Discuss the system information proposals from agenda item 6.7.2.1 (R2-2204585, R2-2204586, R2-2204674, R2-2204886, R2-2205064, R2-2205065, R2-2205319, R2-2205609) and determine handling of the technical issues.

Intended outcome: Report to Monday CB session in R2-2206242

Deadline: Friday 2022-05-13 1800 UTC

* [AT118-e][621][Relay] Initial comments on discovery and (re)selection (vivo)

Scope: Collect company views on the issues raised in R2-2206056.

Intended outcome: Report to Wednesday session in R2-2206243

Deadline: Tuesday 2022-05-10 1800 UTC

Positioning rapporteur CRs:

* [AT118-e][622][POS] 38305 positioning CR (Intel)

Scope: Review and update the rapporteur CR (R2-2204931), also taking into account proposals in the stage 2 related tdocs: R2-2205655, R2-2204690, R2-2205017, R2-2205488, R2-2205805, stage 2 proposals from AI 6.11.2.1. Also check the CR in R2-2204689 to 36.305. Discussion should coordinate with the handling of agenda item summaries.

Intended outcome: Agreed CRs to 38.305 in R2-2206244 and 36.305 in R2-2206245 (without CBs if possible)

Deadline: Tuesday 2022-05-17 1800 UTC

* [AT118-e][623][POS] 38331 positioning CR (Ericsson)

      Scope: Review and update the rapporteur CR, taking into account decisions of this meeting.  Discussion should coordinate with the handling of agenda item summaries.  Tdocs related to the RRC ASN.1 review from AI 6.11.2.9 can also be taken into account where discussion is needed on the rapporteur handling of a RIL item.

      Intended outcome: Agreeable CR in R2-2206246 and report in R2-2206383

      Deadline:  Tuesday 2022-05-17 1800 UTC

* [AT118-e][624][POS] 37355 positioning CR (Qualcomm)

Scope: Review and update the rapporteur CR (R2-2205829), taking into account decisions of this meeting. Discussion should coordinate with the handling of agenda item summaries.

Intended outcome: Agreeable CR in R2-2206247 and report in R2-2206593

Deadline: Tuesday 2022-05-17 1800 UTC

* [AT118-e][625][POS] 38321 positioning CR (Huawei)

Scope: Develop a rapporteur CR, taking into account decisions of this meeting. Discussion should coordinate with the handling of agenda item summaries.

Intended outcome: Agreeable CR in R2-2206248 and report in R2-2206392

Deadline: Tuesday 2022-05-17 1800 UTC

Positioning other discussions:

* [AT118-e][626][POS] LS on TEG framework (CATT)

Scope: Handle the LS in R2-2204478, determine a way forward, and draft a reply.

Intended outcome: Approved LS (without CB if possible) in R2-2206249

Deadline: Friday 2022-05-13 1800 UTC

* [AT118-e][627][POS] Positioning UE capabilities (Intel)

Scope: Discuss proposals on UE capabilities, taking into account the related tdocs: R2-2204933, R2-2205009, R2-2206330.

Intended outcome: Endorsed TPs to some or all of 37.355, 38.331, 38.306, 38.822 (without CBs if possible) and report in R2-2206393

Deadline: Tuesday 2022-05-17 1800 UTC – extended to Friday 2022-05-20 1000 UTC for endorsement of draft CRs

* [AT118-e][628][TEI17] NMEA GGA string for HA-GNSS reporting (Ericsson)

Scope: Discuss the contribution in R2-2205845 and determine if a CR is agreeable.

Intended outcome: Agreed CR (without CB if possible) in R2-2206250 – replaced by R2-2206444

Deadline: Tuesday 2022-05-17 1800 UTC

* [AT118-e][629][POS] Rel-16 positioning CRs (Ericsson)

Scope: Discuss the following contributions under agenda item 5.3 and determine handling: R2-2204694, R2-2204695, R2-2205801, R2-2205802, R2-2205803.

Intended outcome: Agreed CRs (without CB)

Deadline: Tuesday 2022-05-17 1800 UTC – extended to Friday 2022-05-20 1000 UTC to determine if the editorial change from R2-2204694/R2-2204695 can be agreed as a separate CR

* [AT118-e][630][POS] LS on DL-AoD signalling load (Ericsson)

Scope: Discuss the concern on signalling load raised in R2-2204491 and draft a reply.

Intended outcome: Approved LS (without CB if possible) in R2-2206251

Deadline: Tuesday 2022-05-17 1800 UTC

* [AT118-e][631][POS] Remaining PropDisc LPP RIL items (Qualcomm)

Scope: Check company views and discuss the RIL items marked for discussion and not covered by contributions:

* H004: Expected AoA/AoD per TRP or per resource
* N013: Uncertainty mandatory or optional for expected AoA/AoD
* H059: DL-PRS ID in the TEG timestamp
* H024, H032, H033, H046: BIT STRING for UE-based assistance data per method

Intended outcome: Report to Monday (week 2) session in R2-2206252

Deadline: Friday 2022-05-13 1800 UTC

* [AT118-e][632][Relay] Cell change for remote UE (InterDigital)

Scope: Discuss P10a and P10b from R2-2206339 and attempt to reach an agreeable conclusion.

Intended outcome: Report to Monday week 2 session in R2-2206253

Deadline: Friday 2022-05-13 1800 UTC – extended to Thursday 2022-05-19 0400 UTC for remaining proposals

* [AT118-e][633][Relay] Remaining ASN.1 review issues (Huawei)

Scope: Discuss the remaining issues from R2-2206077, prioritising the high and medium priority issues.

Intended outcome: Report to Monday week 2 session in R2-2206254

Deadline: Friday 2022-05-13 1800 UTC

* [AT118-e][634][POS] Measurement gap RRC aspects (Huawei)

Scope: Conclude on remaining RRC issues on measurement gaps, taking into account P4-P7 in the summary R2-2206340 as well as the related tdocs R2-2204543, R2-2205267, R2-2205291, and R2-2205726. Related MAC issues can be considered in the MAC CR discussion.

Intended outcome: Report to Monday week 2 session in R2-2206255

Deadline: Friday 2022-05-13 1800 UTC

* [AT118-e][635][POS] Cross-group alignment for PPW (Qualcomm)

Scope: Check P11 from R2-2206147 and determine whether to align the PPW/MG procedures.

Intended outcome: Report to Wednesday CB session in R2-2206256

Deadline: Tuesday 2022-05-17 1800 UTC

* [AT118-e][636][POS] Proposals for discussion from RRC\_INACTIVE summary (vivo)

Scope: Discuss P1/P2b/P4a/P5a/P5b from R2-2206052 and attempt to conclude. P2b should be checked for compatibility with SDT.

Intended outcome: Report to Monday week 2 session in R2-2206257

Deadline: Friday 2022-05-13 1800 UTC

* [AT118-e][637][POS] Proposals for discussion on on-demand PRS (Huawei)

Scope: Discuss P1/P2/P3 from R2-2206058.

Intended outcome: Report to CB session in R2-2206258

Deadline: Tuesday 2022-05-17 1800 UTC

* [AT118-e][638][POS] Tx TEG and LOS/NLOS aspects (CATT)

Scope: Discuss P1a-P1e and P3a/P3b of R2-2206333.

Intended outcome: Report to CB session in R2-2206259

Deadline: Tuesday 2022-05-17 1800 UTC

* [AT118-e][639][POS] Collection of views on integrity proposals (Ericsson)

Scope: Take comments on the proposals from R2-2206092, focussing on which topics are critical to treat.

Intended outcome: Report to Monday week 2 session in R2-2206260

Deadline: Friday 2022-05-13 1800 UTC – extended to Thursday 2022-05-19 0400 UTC

* [AT118-e][640][Relay] Cast type for discovery (OPPO)

Scope: Discuss the options on groupcast and unicast for discovery (P6 of R2-2206243) and determine whether spec impact and/or an LS to SA2 is needed.

Intended outcome: Report to Monday week 2 session in R2-2206381

Deadline: Friday 2022-05-13 1800 UTC

* [AT118-e][641][POS] LS to RAN3 on container for SRS configuration for positioning (Intel)

Scope: Draft an LS to notify RAN3 of the RAN2 agreement on containerising the configuration associated with SRS-PosRRC-InactiveConfig-r17.

Intended outcome: Approved LS (without CB if possible) in R2-2206387

Deadline: Thursday 2022-05-19 0400 UTC

* [AT118-e][642][POS] LS to RAN4 on LocationMeasurementIndication contents and measurement gap parameters (Huawei)

Scope: Draft an LS to RAN4 to confirm:

 Whether the config in LocationMeasurementIndication can be mapped to a certain pre-configured measurement gap

 if so, whether the UE should only activate the pre-configured measurement gap indicated by LocationMeasurementIndication

 if anything needs to be added to the current contents of the LocationMeasurementIndication

Intended outcome: Approved LS (without CB if possible) in R2-2206388

Deadline: Thursday 2022-05-19 0400 UTC

* [AT118-e][643][POS] LS to SA1/SA2 on integrity (Huawei)

Scope: Draft an LS to SA1 and SA2 updating them on RAN2’s integrity decisions. Discuss also if CT4 should be included.

Intended outcome: Approved LS (without CB if possible) in R2-2206389

Deadline: Thursday 2022-05-19 0400 UTC

* [AT118-e][644][POS] LS to RAN1 on expected AoA/AoD parameters (Huawei)

Scope: Draft an urgent LS to RAN1 to check P1/P2 of R2-2206252.

Intended outcome: Approved LS (without CB) in R2-2206390

Deadline: Wednesday 2022-05-18 0400 UTC

* [AT118-e][645][Relay] LS to SA2 on cast type in discovery (OPPO)

Scope: Draft an LS to SA2 asking 1) if upper layers can provide UC/GC/BC cast-type-indicator to AS layer, 2) if no, whether SA2 is fine if all discovery message sent to UC/GC/BC destination L2 ID always uses BC-type cast-type-indicator in SCI and are filtered in MAC layer based on destination L2 ID by assuming it is BC-type discovery message.

Intended outcome: Approved LS (without CB if possible) in R2-2206391

Deadline: Thursday 2022-05-19 0400 UTC

# 4 EUTRA Rel-16 and earlier

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

## 4.4 Positioning corrections Rel-16 and earlier

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

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

# 5 NR Rel-15 and Rel-16

Essential corrections only.

Tdoc Limitation: 18 tdocs in total for all sub agenda items.

## 5.3 NR Positioning Support

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

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

(NR TEI16 Positioning)

Documents in this agenda item will be handled by email. No web conference is planned for this agenda item, and non-urgent documents may be postponed to next meeting.

Tdoc Limitation: See tdoc limitation for Agenda Item 5

### 5.3.1 General and Stage 2 corrections

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

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

[R2-2204694](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.305_CR0088_(Rel-16)_R2-2204694.docx) Correction on the description of deferred MT-LR CATT CR Rel-16 38.305 16.7.0 0088 - F NR\_pos-Core

* Not pursued (email discussion [AT118-e][629])
* Editorial change can be considered in the continuation of [AT118-e][629]

[R2-2204695](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.305_CR0089_(Rel-17)_R2-2204695.docx) Correction on the description of deferred MT-LR CATT CR Rel-17 38.305 17.0.0 0089 - A NR\_pos-Core

* Not pursued (email discussion [AT118-e][629])
* Editorial change can be considered in the continuation of [AT118-e][629]

### 5.3.2 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).

### 5.3.3 LPP corrections

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

[R2-2205801](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205801%20Motivation%20LPP%20Segmentation.docx) Motivation to clarify LPP segmentation purpose Ericsson discussion

* Noted (email discussion [AT118-e][629])

[R2-2205802](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205802%20SegCRCatF.docx) Clarification on LPP segmentation Ericsson CR Rel-16 37.355 16.8.0 0334 1 F NR\_pos-Core R2-2203368

* Not pursued (email discussion [AT118-e][629])

[R2-2205803](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205803%20SegCRCatA.docx) Clarification on LPP segmentation Ericsson CR Rel-17 37.355 17.0.0 0346 - A NR\_pos-Core

* Not pursued (email discussion [AT118-e][629])
* [AT118-e][629][POS] Rel-16 positioning CRs (Ericsson)

Scope: Discuss the following contributions under agenda item 5.3 and determine handling: R2-2204694, R2-2204695, R2-2205801, R2-2205802, R2-2205803.

Intended outcome: Agreed CRs (without CB)

Deadline: Tuesday 2022-05-17 1800 UTC – extended to Friday 2022-05-20 1000 UTC to determine if the editorial change from R2-2204694/R2-2204695 can be agreed as a separate CR

### 5.3.4 MAC corrections

# 6 NR Rel-17

## 6.7 NR Sidelink relay

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

WI has been declared 100% complete

Tdoc Limitation: 8 tdocs

### 6.7.1 Organizational

Incoming LSs, TS updates, rapporteur inputs. This AI is reserved for rapporteur and organizational inputs. For LSes that need action or have impact beyond taking into account by CR rapporteurs: One tdoc by contact company (one company) to address the LS and potential reply is considered Rapporteur Input and may be provided. Related documents and proposed responses from companies other than the contact company should be submitted to the corresponding technical agenda item.

Incoming LSs other than R2-2204447, with “take into account” actions only

[R2-2204436](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2204436.zip) LS reply on support of RAN sharing and discovery signalling (S2-2201296; contact: Huawei) SA2 LS in Rel-17 To:RAN2 Cc:CT1

* Noted without presentation (email discussion [AT118-e][600])

[R2-2204440](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2204440.zip) Reply LS on discovery and data associated to different L2 IDs (S2-2201298; contact: vivo) SA2 LS in Rel-17 To:RAN2 Cc:CT1

* Noted without presentation (email discussion [AT118-e][600])

LS on SDU type and related documents

[R2-2204447](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204447_C1-221835.docx) LS on the SDU type used over user plane for NR PC5 reference point (C1-221835; contact: ZTE) CT1 LS in Rel-17 To:RAN2 Cc:SA2

[R2-2204633](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204633%20-%20Discussion%20on%20CT1%20LS%20on%20SDU%20type%20(C1-221835).docx) Discussion on CT1 LS on SDU type (C1-221835) OPPO discussion Rel-17 NR\_SL\_relay-Core

[R2-2204771](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204771.docx) Issues on the SDU Type Used over User Plane for NR PC5 Reference Point CATT discussion Rel-17 NR\_SL\_relay-Core

[R2-2204772](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204772.docx) Correciton on PDCP for SL relay CATT draftCR Rel-17 38.323 17.0.0 F NR\_SL\_relay-Core

[R2-2204798](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204798%20Discussion%20on%20the%20SDU%20type%20used%20over%20user%20plane%20for%20NR%20PC5%20reference%20point.doc) Discussion on the SDU type used over user plane for NR PC5 reference point ZTE, Sanechips discussion Rel-17 NR\_SL\_relay-Core

[R2-2204799](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204799%20Draft%20reply%20LS%20on%20SDU%20type%20used%20over%20user%20plane%20for%20NR%20PC5%20reference%20point.docx) Draft reply LS on SDU type used over user plane for NR PC5 reference point ZTE, Sanechips LS out Rel-17 NR\_SL\_relay-Core, NR\_SL\_enh To:CT1 Cc:SA2

* [AT118-e][619][Relay] LS on SDU type in PDCP (ZTE)

Scope: Discuss the LS in R2-2204447 and related contributions (R2-2204633, R2-2204771, R2-2204772, R2-2204798, R2-2204799). Phase 1 should determine a way forward and a recommendation to be taken into account in the PDCP rapporteur CR; Phase 2 is to draft and approve the LS.

Intended outcome: Approved LS (without CB) in R2-2206241 (replaced by R2-2206466)

Deadline: Phase 1 Friday 2022-05-13 1800 UTC, Phase 2 Wednesday 2022-05-18 0400 UTC

[R2-2206465](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206465%20Summary%20of%20%5bAT118-e%5d%5b619%5d%5bRelay%5d%20LS%20on%20SDU%20type%20in%20PDCP%20(ZTE)_final.docx) Summary of [AT118-e][619][Relay] LS on SDU type in PDCP (ZTE) ZTE, Sanechips discussion Rel-17 NR\_SL\_relay-Core

* Noted (email discussion [AT118-e][619])

[R2-2206466](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206466%20Reply%20LS%20on%20SDU%20type%20used%20over%20user%20plane%20for%20NR%20PC5%20reference%20point.docx) Reply LS on SDU type used over user plane for NR PC5 reference point ZTE, Sanechips LS out Rel-17 NR\_SL\_relay-Core, NR\_SL\_enh To:CT1 Cc:SA2

* Revised in R2-2206597

[R2-2206597](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206597%20Reply%20LS%20on%20SDU%20type%20used%20over%20user%20plane%20for%20NR%20PC5%20reference%20point.docx) Reply LS on SDU type used over user plane for NR PC5 reference point RAN2 LS out Rel-17 NR\_SL\_relay-Core, NR\_SL\_enh To:CT1 Cc:SA2

* Approved (email discussion [AT118-e][619])

Rapporteur CRs

[R2-2204584](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204584%20%2038300-%20Correction%20%20for%20SL%20Relay.docx) 38.300 CR Correction for SL Relay MediaTek Inc. CR Rel-17 38.300 17.0.0 0440 - F NR\_SL\_relay-Core

[R2-2204632](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38351_CR0001_(Rel-17)_R2-2204632%20-%20Correction%20on%20SRAP%20for%20L2%20U2N%20Relay_V4.3.docx) Correction on SRAP for L2 U2N Relay OPPO CR Rel-17 38.351 17.0.0 0001 - F NR\_SL\_relay-Core

[R2-2205607](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205607%2038.322%20CR0048%20Correction%20on%20RLC%20for%20SL%20Relay.docx) Correction on RLC for SL relay Samsung CR Rel-17 38.322 17.0.0 0048 - F NR\_SL\_relay-Core

[R2-2205608](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205608%2038.323%20CR0093%20Correciton%20on%20PDCP%20for%20SL%20relay.docx) Correction on PDCP for SL relay Samsung CR Rel-17 38.323 17.0.0 0093 - F NR\_SL\_relay-Core

[R2-2205648](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205648_38321_CR1277_(Rel-17)_MAC-%20Correction%20for%20SL%20Relay_v2.docx) Correction for sidelink relay in MAC Apple CR Rel-17 38.321 17.0.0 1277 - F NR\_SL\_relay-Core Late

[R2-2205880](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.306_CR0728(Rel-17)_R2-2205880%20-%2038.306%20CR%20for%20sidelink%20relay%20capabilities.docx) 38.306 CR for sidelink relay UE capabilities Qualcomm Incorporated CR Rel-17 38.306 17.0.0 0728 - F NR\_SL\_relay-Core

[R2-2205986](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205986_38331_%20CR%233145_%20Rel-17_Miscellaneous%20corrections%20for%20NR%20SL%20Relay.docx) Miscellaneous RRC CR for SL relay Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3145 - F NR\_SL\_relay-Core Late

* [AT118-e][611][Relay] 38331 relay CR (Huawei)

Scope: Update the rapporteur CR (R2-2205986), incorporating decisions of this meeting. Phase 1 attempts to resolve the main technical issues; phase 2 produces an initial draft of the decisions (expectation is that review of this CR may be extended to post-meeting).

Intended outcome: CR agreeable as a baseline for final review, in R2-2206231

Deadline: Phase 1 Friday 2022-05-13 1800 UTC, Phase 2 Wednesday 2022-05-18 0400 UTC

[R2-2206231](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206231%20Corrections%20for%20SL%20relay.docx) Miscellaneous RRC CR for SL relay Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3145 1 F NR\_SL\_relay-Core

Discussion:

ZTE want the opportunity to discuss Z618 (R2-2205066) about the RLC channel ID issue. This has ASN.1 impact.

Ericsson, Lenovo, and Nokia think time is needed to review.

Huawei indicate there has been some offline discussion of the issue raised by ZTE, and this is an issue of aligning between RAN2 signalling and F1AP. They do not find it convincing and are not sure it should be treated as an open issue. ZTE think there are other companies who share the concern.

Apple think this issue could be triggered by RAN3 LS.

Ericsson agree with Apple, and they understand that RAN3 agreed in this meeting to align with the RAN2 spec rather than the other way round. They also think we should work by LS rather than acting on our own so RAN2 do not have to blindly interpret the RAN3 agreement. Nokia and Samsung agree.

ZTE wonder if we should send an LS to RAN3 or raise the issue directly there. They are not aware of a RAN3 agreement that would align with our signalling, and think there is a disconnect in the specs still.

Huawei think RAN3 do not have issues with our specification after internal checking, and they see that there is no necessary alignment between F1AP and Uu signalling, as long as the information is there for the system to work.

ZTE understand there is an issue if the PC5 RLC channel ID is unique within the scope of the remote UE, but the F1AP signalling does not include the remote UE ID. Huawei understand that this is an issue inside the network implementation. ZTE understand that it may cause DL bearer mapping failure at the relay UE.

Ericsson think this discussion makes it clear that we need an LS, because there are different interpretations of the RAN3 situation. They generally agree with Huawei and understand that network implementation can solve the issue, but they think the RAN3 agreements should be indicated by LS rather than interpreted directly by RAN2.

MediaTek think the discussion should be taken first in RAN3.

InterDigital think some decisions of the last session still need to be captured. Huawei understand that the big changes are implemented, but not all companies have commented and there may be remaining issues.

Huawei think we could discuss the “serving cell” / “out of coverage” / “suitable cell” terminology; there is no ASN.1 impact but it is an open issue in the CR. Companies thought the “serving cell” terminology was only defined for connected mode, but they understand it is also defined in 38.304. Huawei would like to use the “serving cell” terminology.

Lenovo also understand that the serving cell is defined in both specs, 38.304 and 38.331.

OPPO and CATT agree with Huawei.

Nokia wonder if the serving cell can be an acceptable cell when connected for emergency services.

Lenovo think the definition of the serving cell is clear, and the terminology that the UE does not have a suitable cell also has a specific definition; they understand that Nokia’s concern is somewhat the wrong way round, in the sense that a UE on an acceptable cell might, with the current “suitable cell” language, end up acting as a remote UE when it should not.

OPPO have a similar view to Lenovo. They think the suitable cell wording is a bit restrictive and the intention was to cover also the acceptable cell, so they see “serving cell” as a more general term.

Apple have a concern that emergency service is not supported in this release, so suitable and acceptable cell should be the same. Huawei indicate that in SA2 specs the UE can support ProSe in limited service state.

Ericsson think for the idle/inactive case, we do have the definition of serving cell, but for the remote UE this may not be applicable because the remote UE is connected by the relay UE. Chair understands the intention is to say that a cell without a serving cell is allowed to select a relay; Huawei have the same understanding.

Lenovo think there is an additional issue from discussion [632], on stopping T301 based on reception of NotificationMessageSidelink; they understand that the applicability of cell reselection to the connected UE needs to be discussed. Think this could be further checked in the running CR. Huawei think when we took this agreement, we did not differentiate UE states, so they did not differentiate in the CR, but they are OK to check the issue in the CR review.

Ericsson wonder about the introduction of the capability filter for sidelink; they think a majority in the SL\_enh session were OK to introduce this and wonder if we could align with it in the relay session. Chair understands we do not have a contribution aligning relay with this. OPPO agree with the chair, but think that the capability signalling is introduced this meeting, and changing the applicability to include relay next meeting would not be NBC. OPPO think we could discuss next meeting.

Ericsson are OK discussing the capability filter next meeting, in line with the current signalling.

Agreement:

For the condition “the UE has no suitable cell” for operation as a remote UE, replace “suitable” with “serving”.

* [Post118-e][605][Relay] 38.331 relay CR (Huawei)

Scope: Update and check the CR in R2-2206231 to take account of decisions of this meeting.

Intended outcome: Agreed CR

Deadline: Short (for RP)

* [AT118-e][612][Relay] 38300 relay CR (MediaTek)

Scope: Update the rapporteur CR (R2-2204584), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2204991, R2-2204795, R2-2204990, R2-2205432, R2-2205781.

Intended outcome: Agreed CR (without CB if possible) in R2-2206232

Deadline: Wednesday 2022-05-18 0400 UTC

[R2-2206232](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206232%2038300%20Correction%20%20for%20SL%20Relay.docx) 38.300 CR Correction for SL Relay MediaTek Inc. CR Rel-17 38.300 17.0.0 0440 1 F NR\_SL\_relay-Core

* Agreed (email discussion [AT118-e][612])
* [AT118-e][613][Relay] 38304 relay CR (Ericsson)

Scope: Develop a rapporteur CR, incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2205905, R2-2204992.

Intended outcome: Agreed CR (without CB if possible) in R2-2206233 (replaced by R2-2206589) and report in R2-2206588

Deadline: Wednesday 2022-05-18 0400 UTC

[R2-2206588](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206588-%20Report%20on%20%5bAT118-e%5d%5b613%5d%5bRelay%5d%20Discussion%20on%2038304%20relay%20CR.docx) Report on [AT118-e][613][Relay] Discussion on 38304 Ericsson discussion Rel-17 NR\_SL\_relay-Core

* Noted (email discussion [AT118-e][613])

[R2-2206589](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.304_CR0255(Rel-17)_R2-2206589-%20Miscellaneous%20correction%20on%20SL%20relay.docx) Miscellaneous correction on SL relay Ericsson CR Rel-17 38.300 17.0.0 0255 - F NR\_SL\_relay-Core

* Agreed (email discussion [AT118-e][613])
* [AT118-e][614][Relay] 38306 relay CR (Qualcomm)

Scope: Update the rapporteur CR (R2-2205880), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2204637, R2-2204638, R2-2204770, R2-2205988.

Intended outcome: Agreed CR (without CB if possible) in R2-2206234

Deadline: Phase 1 to agree on proposals: Friday 2022-05-13 1800 UTC; Phase 2 to agree CR Wednesday 2022-05-18 0400 UTC

[R2-2206234](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.306_CR0728(Rel-17)_R2-2206234%20-%2038.306%20CR%20for%20sidelink%20relay%20simultaneous%20BC%20capabilities.docx) 38.306 CR for sidelink relay UE capabilities Qualcomm Incorporated CR Rel-17 38.306 17.0.0 0728 1 F NR\_SL\_relay-Core

* Endorsed (email discussion [AT118-e][614])

[R2-2206394](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38331_draftCR_(Rel-17)_R2-2206394%20-%20Correction%20on%20UE%20capability%20for%20discovery%20BC%20list%20(38.331).docx) Correction on UE capability for discovery BC list (38.331) OPPO draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

* Endorsed (email discussion [AT118-e][614])
* [AT118-e][615][Relay] 38321 relay CR (Apple)

Scope: Update the rapporteur CR (R2-2205648), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2204766, R2-2204767, R2-2204768, R2-2204769, R2-2205114, R2-2205610, R2-2204773, R2-2204993 (handling of R2-2205610 and R2-2204768 to be confirmed online Monday 2022-05-09).

Intended outcome: Agreeable CR in R2-2206235, report in R2-2206382

Deadline: Wednesday 2022-05-18 0400 UTC

[R2-2206382](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206382_%5bAT118-e%5d%5b615%5d%5bRelay%5d%2038321%20relay%20CR%20(Apple)_phase_1_%20v17_rapp_summary.docx) Summary of [AT118-e][615][Relay] 38321 relay CR (Apple) Apple discussion Rel-17 NR\_SL\_relay-Core

* Noted

Discussion:

Ericsson think we should have a post-meeting discussion to check the CR.

CATT think we could agree the MAC CR as it is, since the major issues have been already solved.

Apple indicate the CR has been available for almost a week without comments, and they see no big controversial issues. So they think the CR is agreeable. OPPO agree.

Ericsson do not have a specific issue in mind but just the time pressure for checking, but they can accept the majority view.

[R2-2206235](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206235_38321_CR1277_(Rel-17)_MAC-%20Correction%20for%20SL%20Relay_final.docx) Correction for sidelink relay in MAC Apple CR Rel-17 38.321 17.0.0 1277 1 F NR\_SL\_relay-Core

* Agreed
* [AT118-e][616][Relay] 38322 and 38323 relay CRs (Samsung)

Scope: Update the rapporteur CRs (R2-2205607 and R2-2205608), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2205963, R2-2205611.

Intended outcome: Agreed CRs (without CB if possible) in R2-2206236 (38.322) and R2-2206237 (38.323)

Deadline: Wednesday 2022-05-18 0400 UTC – extended to Thursday 2022-05-19 0400 UTC

[R2-2206236](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206236%2038.322%20CR0048%20Correction%20on%20RLC%20for%20SL%20Relay.docx) Correction on RLC for SL relay Samsung CR Rel-17 38.322 17.0.0 0048 1 F NR\_SL\_relay-Core

* Agreed (email discussion [AT118-e][616])

[R2-2206237](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206237%2038.323%20CR0093%20Correciton%20on%20PDCP%20for%20SL%20relay.docx) Correction on PDCP for SL relay Samsung CR Rel-17 38.323 17.0.0 0093 1 F NR\_SL\_relay-Core

* Agreed (email discussion [AT118-e][616])
* [AT118-e][617][Relay] 38351 relay CR (OPPO)

Scope: Update the rapporteur CR (R2-2204632), incorporating decisions of this meeting and taking into account related proposals in the related tdocs: R2-2204796, R2-2204797, R2-2205133, R2-2205431.

Intended outcome: Agreed CR (without CB if possible) in R2-2206238

Deadline: Wednesday 2022-05-18 0400 UTC

[R2-2206238](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38351_CR0001r1_(Rel-17)_R2-2206238%20-%20Correction%20on%20SRAP%20for%20L2%20U2N%20Relay.docx) Correction on SRAP for L2 U2N Relay OPPO CR Rel-17 38.351 17.0.0 0001 1 F NR\_SL\_relay-Core

* Agreed (email discussion [AT118-e][617])

### 6.7.2 Essential corrections

No documents should be submitted to 6.7.2. Please submit to 6.7.2.x.

#### 6.7.2.1 Control plane procedures

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

Summary document

[R2-2206339](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206339%20Report%20of%20%5bPre118-e%5d%5b608%5d%5bRelay%5d%20Summary%20of%20AI%206.7.2.1%20on%20control%20plane%20(Lenovo).docx) Summary of [Pre118-e][608][Relay] Summary of AI 6.7.2.1 on CP (Lenovo) Lenovo discussion Rel-17 NR\_SL\_relay-Core

[Easy] Proposal 1: MIB is not required by a U2N Remote UE.

Proposal 1a: Discuss if Proposal 1 needs to be reflected in the RRC specification.

[Easy] Proposal 3: A Remote UE indicates its interests for any SIBs (not SI-messages) to Relay UE via RemoteUEInformationSidelink” and ASN.1 changes are made accordingly to enable this.

[Easy] Proposal 5: No specification changes are required to implement that “upon PC5 RRC connection release, relay UE initiates transmission of the SidelinkUEInformationNR message to release the corresponding sl-PagingIdentity-RemoteUE”.

Discussion:

P1a:

OPPO think we should avoid spec impact where possible, and a NOTE is enough. Apple agree. Samsung think some clarification is needed; no strong view on normative text or a NOTE.

CATT think the NOTE from Samsung’s contribution is OK. Huawei clarify that the current CR already has some clarification that the remote UE is not required to read the MIB; they are OK with Samsung’s proposal for the PC5-RRC part.

vivo think there may be no need for an additional NOTE. MediaTek agree.

P3:

Ericsson think we need to clarify the signalling, and in connected mode on Uu we specified particular SIBs that could be requested; they think it would be simpler to keep the request as per SI message. Chair understands we have inconsistency in the message today between SIs and SIBs. vivo and Apple have the same understanding.

MediaTek indicate that we could align the code points in sl-Requested-SI-List to the SIBs from the SIB-TypeInfo fields.

vivo think aligning on per-SIB is a good clarification. Huawei indicate that the current rapporteur CR is aligned to per-SIB.

Proposal 10a: The remote UE shall stop T301, T300, T302, T319 and T390, if running, upon cell change due to reception of reconfigurationWithSync or cell (re)-selection of the relay UE.

Proposal 10b: RAN2 to discuss whether remote UE judges “cell change” when the received SIB1 includes a different cell.

Discussion:

CATT doubt the necessity of these proposals; they think the timer expiry can handle these situations and they see this as an optimisation, but they can accept if there is a majority view. Ericsson agree.

vivo think the proposals are a bit confusing: P10a says the remote UE shall stop the timer, and P10b defines the “cell change”. So they think we should settle the definition of cell change before agreeing on P10a.

Lenovo understand that the point of P10b is how the remote UE recognises that the relay UE is served by a new cell: from a notification message by the relay UE or from SIB1, and the proposal is to align on SIB1. They think the UE will receive the notification message first, and the updated SIB1 comes later, and they think this creates an ambiguity period.

OPPO have some concern about P10a because of the phrase “upon cell change”; they think the triggering condition should be something that happens to the remote UE, not the relay UE, so they would like to reword P10a to say “upon cell change of relay UE”. ZTE have a similar concern, and also think that for the idle/inactive remote UE, the cell change can be regarded as cell reselection and the stop condition for the timers would then already be covered.

LG think in P10a, the timers can stop based on the cause value in the notification message from relay UE, and on P10b they have a similar concern to Lenovo that there is an ambiguity period between the notification message and SIB1.

InterDigital are OK with P10a, and think the relay can handle the ambiguity in P10b; so they think we may not need spec impact for the remote UE’s behaviour, considering that the notification message can signal the cell change.

Proposal 4: RAN2 discuss if any immediate decisions are required to accommodate positioning SIB requests in Rel. 17 or later (to ensure forward compatibility)

Agreements:

[Easy] Proposal 1: MIB is not required by a U2N Remote UE.

Capture a NOTE in 38.331 for Proposal 1 (details to be resolved in RRC CR discussion).

[Easy] Proposal 3: A Remote UE indicates its interests for any SIBs (not SI-messages) to Relay UE via RemoteUEInformationSidelink” and ASN.1 changes are made accordingly to enable this.

[Easy] Proposal 5: No specification changes are required to implement that “upon PC5 RRC connection release, relay UE initiates transmission of the SidelinkUEInformationNR message to release the corresponding sl-PagingIdentity-RemoteUE”.

* [AT118-e][632][Relay] Cell change for remote UE (InterDigital)

Scope: Discuss P10a and P10b from R2-2206339 and attempt to reach an agreeable conclusion.

Intended outcome: Report to Monday week 2 session in R2-2206253

Deadline: Friday 2022-05-13 1800 UTC – extended to Thursday 2022-05-19 0400 UTC for remaining proposals

[R2-2206253](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206253%20-%20summary%20of%20%5b632%5d_v00_Summary_Rapp.docx) Summary of [AT118-e][632][Relay] Cell change for remote UE (InterDigital) InterDigital discussion NR\_SL\_relay-Core

Proposal 1 [17/17] – RAN2 agrees that the remote UE shall stop T301, T300, T302, T319, and T390, if running, when there is a cell change at the relay UE (i.e. caused by reception of reconfigurationWithSync at the relay, or cell (re)selection by the relay).

Proposal 2 [17/17] – The remote UE determines cell change at the relay UE from the reception of the NotificationMessageSidelink. No additional specification to determine this at the remote UE (i.e. using the change of cell ID in SIB1) is needed.

Proposal 3 [13/17] – To implement the stopping of timers, update section 5.8.9.10.4 such that the remote UE considers a cell change at the relay UE as a cell reselection, and agree to the draft specification changes in the conclusion/summary section.

Discussion:

vivo are OK with the intention of the proposal but think there is a bug in the TP, with a level 4 bullet specific to the L2 case.

InterDigital indicate additional comments were received and we can discuss the detailed text in the rapporteur CR.

InterDigital indicate there are open issues and we could extend the discussion.

Agreements:

Proposal 1 [17/17] – RAN2 agrees that the remote UE shall stop T301, T300, T302, T319, and T390, if running, when there is a cell change at the relay UE (i.e. caused by reception of reconfigurationWithSync at the relay, or cell (re)selection by the relay).

Proposal 2 [17/17] – The remote UE determines cell change at the relay UE from the reception of the NotificationMessageSidelink. No additional specification to determine this at the remote UE (i.e. using the change of cell ID in SIB1) is needed.

Proposal 3 (modified) – To implement the stopping of timers, update section 5.8.9.10.4 such that the remote UE considers a cell change at the relay UE as a cell reselection. Detailed changes can be discussed in the rapporteur CR.

[R2-2206399](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206399%20-%20summary%20of%20%5b632%5d_phase2_summary.docx) Summary of [AT118-e][632][Relay] Cell change for remote UE (InterDigital) InterDigital discussion NR\_SL\_relay-Core

Proposal 4 [11/13] – The remote UE does not stop timers T301, T300, T302, T319, or T390, if running, upon reception of NotificationMessageSidelink with indicationType of relayUE-UuRLF.

Proposal 5 [10/13] – The remote UE does not stop timers T301, T300, T302, T319, or T390, if running, upon reception of NotificationMessageSidelink with indicationType of of relayUE-UuRRCFailure.

Discussion:

InterDigital confirm the proposals would mean no further spec impact.

Agreements:

Proposal 4 [11/13] – The remote UE does not stop timers T301, T300, T302, T319, or T390, if running, upon reception of NotificationMessageSidelink with indicationType of relayUE-UuRLF.

Proposal 5 [10/13] – The remote UE does not stop timers T301, T300, T302, T319, or T390, if running, upon reception of NotificationMessageSidelink with indicationType of of relayUE-UuRRCFailure.

System information issues (handled in email)

[R2-2204585](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204585%20General%20SIB%20forwarding%20for%20Remote%20UE.docx) General SIB forwarding for Remote UE [M119][H629] MediaTek Inc. discussion Rel-17 NR\_SL\_relay-Core

[R2-2204586](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204586%20Positioning%20SIB%20forwarding%20for%20Remote%20UE.docx) Positioning SIB forwarding for Remote UE [M119][H629] MediaTek Inc. discussion Rel-17 NR\_SL\_relay-Core

[R2-2204674](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204674%20%5bE083%5d%5bH593%5d%20Two%20copies%20of%20a%20same%20SIB%20and%20related%20remote%20UE%20behaviour.docx) [E083][H593] Two copies of a same SIB and related remote UE behaviour vivo discussion

[R2-2204886](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\Draft_R2-2204886.doc) Discussion on SI forwarding NEC Corporation discussion Rel-17 NR\_SL\_relay-Core

[R2-2205064](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205064%20Discussion%20on%20remote%20UE's%20SIB(s)%20acquisition%20and%20paging%20monitoring.docx) Discussion on remote UE’s SIB(s) acquisition and paging monitoring ZTE, Sanechips discussion Rel-17 NR\_SL\_relay-Core

[R2-2205065](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205065%20Correction%20on%20remote%20UEí) Correction on remote UE’s SIB(s) acquisition and paging monitoring ZTE, Sanechips CR Rel-17 38.331 17.0.0 3037 - F NR\_SL\_relay-Core

[R2-2205319](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205319.doc) Discussion on how to support posSIB(s) forwarding Xiaomi discussion

[R2-2205609](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205609%20Clarification%20of%20SI%20acquisition.doc) Clarification of SI acquisition for RRC\_IDLE/RRC\_INACTIVE Remote UE (RIL#: E084, H593) Samsung discussion Rel-17 NR\_SL\_relay-Core

* [AT118-e][620][Relay] System information issues (Qualcomm)

Scope: Discuss the system information proposals from agenda item 6.7.2.1 (R2-2204585, R2-2204586, R2-2204674, R2-2204886, R2-2205064, R2-2205065, R2-2205319, R2-2205609) and determine handling of the technical issues.

Intended outcome: Report to Monday CB session in R2-2206242

Deadline: Friday 2022-05-13 1800 UTC

[R2-2206242](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206242.docx) Summary report of [AT118-e][620][Relay] System information issues (Qualcomm) Qualcomm discussion NR\_SL\_relay-Core

[Easy] [Proposal 1]: support correction to NOTE in TS38.331 spec, section 5.8.9.9.2, to not use “always” for unsolicited SIB1 forwarding, as it is not mandatory and left to UE implementation. [15/19]

[Chair’s addendum: Below is the original note; the changes in R2-2206242 propose to strike out “either”, but the proposal suggests that the intention was to strike out “always”]

NOTE: The L2 U2N Relay UE always either forwards SIB1 requested by the connected L2 U2N Remote UE or performs unsolicited forwarding to the L2 U2N Remote UE based on L2 U2N Relay UE implementation.

Discussion:

Qualcomm clarify that the intention is to remove “either”.

Nokia think the current wording is ambiguous, and if we remove “either” it looks like the relay UE is required to do one or the other. They understand that the relay UE can decline to forward anything.

Lenovo wonder if the remote UE can even request SIB1. Samsung understand that SIB1 is included. Huawei indicate that the current signalling allows SIB1 request and SIB1 forwarding; on P1, they suggest that we remove the “always forwards” part and just say the relay may perform unsolicited forwarding.

Ericsson agree with Huawei’s suggestion.

vivo think this was previously discussed and we decided that the relay UE always provides SIB1 by one method or the other; they don’t think we need to re-discuss.

Nokia and Apple agree with Huawei’s suggestion. Chair asks if it would then be clear that the relay UE has to provide SIB1 somehow; Huawei indicate that this is captured in the CR.

Agreement:

[Proposal 1] (modified): support correction to NOTE in TS38.331 spec, section 5.8.9.9.2, as follows:

NOTE: The L2 U2N Relay UE may perform unsolicited forwarding to the L2 U2N Remote UE based on L2 U2N Relay UE implementation.

[Easy] Proposal 2: TP A in Annex A of R2-2205609 is not agreed, as the L2 U2N Remote UE behavior for SI acquisition is covered by added paragraph in section 5.2.2.2.1 of 38.331 CR update, for [Pre118-e][602][Relay] 38331 CR and rapporteur resolutions (Huawei) to address RIL List # E084, H593.[19/19].

Please provide comments on the corrections for the text in 38.331 to [AT118-e][633][Relay] Remaining ASN.1 review issues (Huawei).

[Easy] Proposal 3: support Change 5 in TP R2-2205065, with modification to use “and/or” instead i.e. Add ‘sl-SIB1-Delivery and/or’ in the first bullet 4 in clause 5.8.9.9.3. of TS 38.331 CR.[19/19]

[Easy] Proposal 4: Support the Change 7 in TP R2-2205065 and address the change with below modifications to RRCReconfiguration-IEs field descriptions in TS 38.331 CR. [18/19]

[Chair’s addendum: See draft changes under P4 in R2-2206242]

[Easy] Proposal 5: Proposals in R2-2204886 (i.e. to clarify the L2 U2N Relay UE behavior on how the L2 U2N Relay UE decides which SIBs to update to L2 U2N Remote UEs) are not agreed as the behavior is covered by conditions in section 5.8.9.9.2 of TS 38.331.[19/19]

[Easy] Proposal 6: Proposals in R2-2204674 are not agreed, i.e. (do not add a NOTE to specify that L2 U2N remote UE connected to L2 U2N relay UE that receives two copies of the same SIB via direct and indirect path use the SIB from the relay path), as it is up to UE implementation. [17/19]

Discussion:

vivo think the issue in P6 needs to be solved and future implementers will not understand what the UE should do if it receives two copies of the SIB. They think the spec should be clear and we should at least document what the expectation of the UE is.

Ericsson think we could detail that it refers to “two exact copies” of the same SIB.

Agreements:

[Easy] Proposal 2: TP A in Annex A of R2-2205609 is not agreed, as the L2 U2N Remote UE behavior for SI acquisition is covered by added paragraph in section 5.2.2.2.1 of 38.331 CR update, for [Pre118-e][602][Relay] 38331 CR and rapporteur resolutions (Huawei) to address RIL List # E084, H593.[19/19].

Please provide comments on the corrections for the text in 38.331 to [AT118-e][633][Relay] Remaining ASN.1 review issues (Huawei).

[Easy] Proposal 3: support Change 5 in TP R2-2205065, with modification to use “and/or” instead i.e. Add ‘sl-SIB1-Delivery and/or’ in the first bullet 4 in clause 5.8.9.9.3. of TS 38.331 CR.[19/19]

[Easy] Proposal 4: Support the Change 7 in TP R2-2205065 and address the change with below modifications to RRCReconfiguration-IEs field descriptions in TS 38.331 CR. [18/19]

[Chair’s addendum: See draft changes under P4 in R2-2206242]

[Easy] Proposal 5: Proposals in R2-2204886 (i.e. to clarify the L2 U2N Relay UE behavior on how the L2 U2N Relay UE decides which SIBs to update to L2 U2N Remote UEs) are not agreed as the behavior is covered by conditions in section 5.8.9.9.2 of TS 38.331.[19/19]

[Easy] Proposal 6: Proposals in R2-2204674 are not agreed, i.e. (do not add a NOTE to specify that L2 U2N remote UE connected to L2 U2N relay UE that receives two copies of the same SIB via direct and indirect path use the SIB from the relay path), as it is up to UE implementation. [17/19]

Agreements to be implemented in the rapporteur CR. For P6, document in a NOTE in the CR that it is up to UE implementation which SIB to use in this case.

[To discuss] Proposal 7a: RAN2 to agree that on-demand posSIBs is not supported by L2 U2N Remote UE in RRC\_IDLE/INACTIVE/CONNECTED state connected to the L2 U2N Relay UE (deferred to Rel-18 positioning WI). [13/18]

• corrections to TS 38.300, TS 38.331 to consider exceptions to previous RAN2#116bis-e agreement on “Any SIB which the RRC\_IDLE/RRC\_INACTIVE remote UE has a requirement to use (e.g. for relay purpose) can be requested by the remote UE (from the relay UE or the network)”.

• corrections to TS 38.331 to not allow the L2 U2N Remote UE in RRC\_CONNECTED state indicate posSIBs request in the DedicatedSIBRequest message.

Discussion:

Chair understands that there is no consensus to support adding posSIBs in this release.

Ericsson think the agreement should be reflected in the spec by requiring that the remote UE does not request posSIBs in the DedicatedSIBRequest. Chair thinks in this case the network could send it by dedicated signalling with no impact to the remote UE.

Huawei think we do not need to exclude certain SIBs from the dedicated request and think the posSIBs can be useful for OOC UE (e.g. it can receive PRS from other cells). NEC think the restriction is not needed. Lenovo think the restriction might be overspecifying.

Qualcomm agree with Ericsson and think it is inconsistent if we allow it in some states but not others. They think since the UE is not directly connected to the gNB some posSIBs may not be usable, e.g. for DL-TDOA, while GNSS posSIBs may be usable.

Ericsson agree with Qualcomm and think the states should be consistent. They think we have consensus not to support posSIB in any state.

OPPO think if there is controversy we should not exclude for now.

Nokia agree with Ericsson.

MediaTek think the restriction is unreasonable.

Apple think there is no exclude the connected case.

Lenovo think the RRC\_CONNECTED remote UE should be as close as possible to a Uu UE.

Huawei think in the ad hoc, the main reason why the request in idle/inactive was not supported is because the UE can request it in RRC\_CONNECTED. Ericsson understand that the discussion in the ad hoc was whether to support posSIBs for the remote UE, full stop.

OPPO understand that there are diverse views and think the suggested agreement is a reasonable tradeoff. They do not see consensus to go further.

Agreements:

Support for requesting posSIBs is not added in this release (on PC5 or Uu).

The existing support for posSIBs in DedicatedSIBRequest is not removed now. Can be further discussed if a restriction is needed.

Documents without identified RIL (no ASN.1 impact)

[R2-2204550](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204550.doc) Discussion on paging information management for a remote UE SHARP Corporation discussion NR\_SL\_relay-Core

[R2-2204551](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204551.doc) Discussion on cell change of remote UE due to relay UE's cell change SHARP Corporation discussion NR\_SL\_relay-Core

[R2-2204676](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204676%20OOC.docx) OOC concept for remote UE vivo discussion

[R2-2205113](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205113-Cause%20value%20for%20Relay%20UE%20(38.331%20running%20CR).docx) Cause value for Relay UE (38.331 running CR) LG Electronics France CR Rel-17 38.331 17.0.0 3051 - F NR\_SL\_relay-Core

[R2-2205115](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205115-remaining%20issues%20for%20control%20plane%20procedure%20for%20relay%20operation.docx) remaining issues for control plane procedure for relay operation LG Electronics France discussion Rel-17

[R2-2205131](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205131%20Connection%20establishment%20and%20resume%20failure%20occurrence%20to%20a%20L2%20U2N%20Remote%20UE.docx) Connection establishment and resume failure occurrence to a L2 U2N Remote UE ASUSTeK CR Rel-17 38.331 17.0.0 3052 - F NR\_SL\_relay-Core

[R2-2205132](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205132%20Associating%20two%20sidelink%20RLC%20bearer%20configurations%20for%20bi-directional%20sidelink%20RLC%20bearer%20to%20support%20L2%20U2N%20Relay.docx) Associating two sidelink RLC bearer configurations for bi-directional sidelink RLC bearer to support L2 U2N Relay ASUSTeK CR Rel-17 38.331 17.0.0 3053 - F NR\_SL\_relay-Core

[R2-2205856](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205856%20Correction%20for%20RRC%20reestablishment.docx) Correction for RRC Reestablishment in Sidelink relay Nokia, Nokia Shanghai Bell draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay\_enh-Core

[R2-2205991](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205991%20Clarification%20on%20relay%20and%20remote%20UE%20behavior%20during%20failure%20handling.docx) Clarification on relay and remote UE behavior during failure handling Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

RILs where some discussion is needed

R2-2205496 is on N111

[R2-2204764](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204764.docx) [C121] Necessity of Releasing the Paging Request of Remote UE via SidelinkUEInformationNR CATT discussion Rel-17 NR\_SL\_relay-Core

[R2-2204959](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204959%20%5bB104%5d%20TP%20on%20stop%20condition%20of%20T300%20v1.0.doc) [B104] TP on stop condition of T300 Lenovo discussion Rel-17

[R2-2204960](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204960%20%5bB105%5d%20TP%20on%20setup%20request%20procedure%20v1.0.doc) [B105] TP on setup request procedure Lenovo discussion Rel-17

[R2-2204961](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204961%20%5bB106%5d%20TP%20on%20re-establishment%20procedure%20v1.0.doc) [B106] TP on re-establishment procedure Lenovo discussion Rel-17

[R2-2205496](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205496%20Correction%20for%20setting%20cause%20value%20for%20sidelink%20relay.docx) Correction on cause value in sidelink relay Nokia, Nokia Shanghai Bell draftCR Rel-17 38.331 17.0.0 NR\_SL\_relay-Core

[R2-2206042](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206042%20-%20Discussion%20on%20%5bO090%5d.docx) Discussion on [O090] OPPO discussion Rel-17 NR\_SL\_relay-Core

MAC related

[R2-2204766](C:\\Users\\mtk16923\\Documents\\3GPP Meetings\\202205 - RAN2_118-e, Online\\Extracts\\R2-2204766.docx" \o "C:\Users\mtk16923\Documents\3GPP Meetings\202205 - RAN2_118-e, Online\Extracts\R2-2204766.docx) Discussion on the LCIDs of SL-SCH for Uu Logical Channels of Remote UE CATT discussion Rel-17 NR\_SL\_relay-Core

Stage 2 related

[R2-2204991](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204991-38300_Correction%20to%20support%20L3%20U2N%20Relay.docx) Correction to support L3 U2N Relay OPPO draftCR Rel-17 38.300 17.0.0 NR\_SL\_relay-Core

38.304 related

[R2-2205905](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205905%20(R17%20SL%20Relay%20WI_A6721_Paging_Corrections_in_304).docx) Draft CR on Corrections on Paging Reception by the Relay UE InterDigital draftCR Rel-17 38.304 17.0.0 NR\_SL\_relay-Core

Rapporteur’s proposed treatment appears agreeable

[R2-2204634](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38331_draftCR_(Rel-17)_R2-2204634%20-%20%5bO006,%20O007,%20O008,%20O010,%20O011,%20O054,%20O900%5d.docx) Correction on [O006, O007, O008, O010, O011, O054, O900] OPPO draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

[R2-2204765](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204765.docx) [C122]Conditions of RemoteUEInformationSidelink Transmission CATT discussion Rel-17 NR\_SL\_relay-Core

[R2-2204989](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204989-Discussion%20on%20inter%20layer%20interaction%20for%20NR%20sidelink%20relay.docx) Discussion on inter layer interaction for NR sidelink relay OPPO discussion Rel-17 NR\_SL\_relay-Core

[R2-2205321](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205321.doc) [X208] Discussion on remote UE’s on-demand SI in CONNECTED Xiaomi discussion

[R2-2205695](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205695%20%5bB100%5d%20SL%20Timers%20Broadcast%20in%20SIB1.docx) [B100] SL Timer Broadcast in SIB1 Lenovo discussion NR\_SL\_relay-Core Revised

[R2-2205699](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205699%20%5bB212%5d%20RRC%20Connected%20Remote%20UE%20cannot%20acquire%20SIB1.docx) [B212] RRC Connected Remote UE cannot acquire SIB1 Lenovo discussion NR\_SL\_relay-Core R2-2205695

[R2-2205906](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205906%20(R17%20SL%20Relay%20WI_A6721_RIL_U455.docx) [U455] Draft CR on Corrections to Paging DRX Cycle InterDigital draftCR Rel-17 38.331 17.0.0 NR\_SL\_relay-Core

[R2-2205907](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205907%20(R17%20SL%20Relay%20WI_A6721_RIL_U456_U473.docx) [U456][U473] Draft CR on Corrections to Trigger Conditions of RemoteUEInformationSidelink InterDigital draftCR Rel-17 38.331 17.0.0 NR\_SL\_relay-Core

[R2-2205908](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205908%20(R17%20SL%20Relay%20WI_A6721_RIL_U465.docx) [U465] Draft CR on Corrections to Relay UE Uu SI Request InterDigital draftCR Rel-17 38.331 17.0.0 NR\_SL\_relay-Core

[R2-2205909](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205909%20(R17%20SL%20Relay%20WI_A6721_RIL_U482.docx) [U482] Draft CR on Corrections to NotificationMessageSidelink InterDigital draftCR Rel-17 38.331 17.0.0 NR\_SL\_relay-Core

#### 6.7.2.2 Service continuity

Service continuity between Uu and relay paths, limited to intra-gNB cases.

Summary document

[R2-2206053](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206053.docx) Summary of 6.7.2.2 service continuity (Xiaomi) Xiaomi discussion Rel-17 NR\_SL\_relay-Core

Proposal 1: Change 4 and 5 in [1], [4], [5], [8] are critical changes.

Proposal 2: [2], [3], [6], [7], [9] are non-critical changes.

[1] R2-2204635 Correction on [O009, o017, O020, O022-O025] OPPO

[2] R2-2204795 Miscellaneous corrections for NR SL Relay in 38.300 ZTE, Sanechips

[3] R2-2204990 Correction to support IDLE INACTIVE relay UE OPPO

[4] R2-2205093 38.331 CR for SL relay events Samsung

[5] R2-2205320 [X200] Discussion on path swith failure upon target relay UE Pcell change Xiaomi

[6] R2-2205339 Service continuity open issues in L2 NR sidelink relay Sony

[7] R2-2205375 On the entry and leave conditions for path switch in SL relay Nokia, Nokia Shanghai Bell

[8] R2-2205633 Discussion on how remote UE gets its local ID in direct-to-indirect path switch when target relay UE is in IDLE/INACTIVE state Apple

[9] R2-2205987 Clarification on Uu threshold handling when configured with measurements of L2 U2N Relay Ues Huawei, HiSilicon CR

Discussion:

OPPO point out that R2-2204635 changes 4 and 5 are covered in [Pre118-e][602].

Flagged in summary as containing critical changes

[R2-2205093](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205093%2038.331%20CR%20for%20SL%20relay%20events.docx) 38.331 CR for SL relay events Samsung CR Rel-17 38.331 17.0.0 3047 - F NR\_SL\_relay-Core

- Add procedure of serving L2 U2N Relay UE to be applicable for event X2 in 5.5.4.1.

- Add procedure to exclude allowed-list and excluded-list of event X2 in 5.5.4.1.

- Add procedure of L2 U2N Relay UE detected on the associated frequency to be applicable for event Y2 in 5.5.4.1.

Discussion:

Samsung indicate the first two changes need to be agreed, and the third is already in the RRC CR.

Agreements:

- Add procedure of serving L2 U2N Relay UE to be applicable for event X2 in 5.5.4.1.

- Add procedure to exclude allowed-list and excluded-list of event X2 in 5.5.4.1.

[R2-2205633](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205633%20-%20Discussion%20on%20how%20remote%20UE%20gets%20its%20local%20ID%20in%20direct-to-indirect%20path%20switch.doc) Discussion on how remote UE gets its local ID in direct-to-indirect path switch when target relay UE is in IDLE/INACTIVE state Apple discussion Rel-17 NR\_SL\_relay-Core

Proposal 1: On how remote UE obtains its local ID when the target relay UE is IDLE/INACTIVE state, RAN2 is suggested to down-select between below Alt-1 and Alt-2:

• Alt-1: In a RRCReconfiguration message after relay UE enters CONNECTED state

o Main benefit is to simplify gNB operation on allocating / recycling local IDs which are not to be used if target relay UE fails to enter CONNECTED state

• Alt-2: In path switch command towards remote UE

o Main benefit is no latency for UL data transmission after path switch (i.e., remote UE UL data can be sent as early as the first RRCReconfigurationComplete message in step 4)

Discussion:

OPPO understand we intended alternative 2 based on the current procedures, and we rely on the network to align the procedures between remote and relay UEs. ASUSTeK and Nokia agree with OPPO.

Apple think the majority view on the reflector was for alternative 2, and we may capture a NOTE about the expected gNB alignment.

Huawei indicate the CR already implements alternative 2; they think the network is usually expected to provide aligned configurations and a NOTE may not be necessary. Apple think the IDs are provided at separate times so the NOTE may be helpful.

Ericsson agree with Huawei and think the NOTE is not needed. They think we should not specify gNB behaviour.

ZTE wonder if the local ID request IE could be absent in SUI of relay UE, so that the gNB is not required to allocate the remote local ID for the relay UE.

Agreement:

Proposal 1 (modified): Remote UE obtains its local ID when the target relay UE is IDLE/INACTIVE state in path switch command towards remote UE.

The gNB is expected to align the remote UE’s local ID between the remote and relay UEs.

Covered in [AT118-e][602]

[R2-2205320](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205320.doc) [X200] Discussion on path swith failure upon target relay UE Pcell change Xiaomi discussion

[R2-2205339](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205339.doc) Service continuity open issues in L2 NR sidelink relay Sony discussion Rel-17 NR\_SL\_relay-Core

[R2-2204635](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38331_draftCR_(Rel-17)_R2-2204635%20-%20%5bO009,%20O017,%20O020,%20O022-O025%5d.docx) Correction on [O009, o017, O020, O022-O025] OPPO draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

Stage 2 related

[R2-2204795](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204795%20Miscellaneous%20corrections%20for%20NR%20SL%20Relay%20in%2038.300.doc) Miscellaneous corrections for NR SL Relay in 38.300 ZTE, Sanechips CR Rel-17 38.300 17.0.0 0445 - F NR\_SL\_relay-Core

[R2-2204990](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204990-38300_Correction%20to%20support%20IDLE%20INACTIVE%20relay%20UE.docx) Correction to support IDLE INACTIVE relay UE OPPO draftCR Rel-17 38.300 17.0.0 NR\_SL\_relay-Core

Documents without identified RIL (no ASN.1 impact)

[R2-2205375](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205375%20On%20the%20entry%20and%20exit%20conditions%20for%20path%20switch%20in%20SL%20relay.docx) On the entry and leave conditions for path switch in SL relay Nokia, Nokia Shanghai Bell draftCR Rel-17 38.331 17.0.0 C NR\_SL\_relay-Core

[R2-2205987](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205987_38331_CR%233146_Rel-17_Clarification%20on%20Uu%20threshold%20handling%20when%20configured%20with%20measurements%20of%20L2%20U2N%20Relay%20UEs.docx) Clarification on Uu threshold handling when configured with measurements of L2 U2N Relay Ues Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3146 - F NR\_SL\_relay-Core

#### 6.7.2.3 Adaptation layer design

Including bearer mapping, remote UE identification, security aspects if any.

[R2-2204796](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204796%20Correction%20on%20BEARER%20ID%20determination.doc) Correction on BEARER ID determination ZTE, Sanechips CR Rel-17 38.351 17.0.0 0002 - F NR\_SL\_relay-Core

[R2-2204797](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204797%20Corrections%20on%20the%20DL%20bearer%20mapping.docx) Correction on the DL bearer mapping ZTE, Sanechips CR Rel-17 38.351 17.0.0 0003 - F NR\_SL\_relay-Core

[R2-2205133](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205133%20Corrections%20on%20SRAP%20PDU%20handling%20and%20ID%20field%20determination.docx) Corrections on SRAP PDU handling and ID field determination ASUSTeK CR Rel-17 38.351 17.0.0 0004 - F NR\_SL\_relay-Core

[R2-2205431](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205431%20Correction%20on%20the%20handling%20of%20unknown,%20unforeseen,%20and%20erroneous%20protocol%20data%20and%20other%20miscellaneous%20in%20SRAP.docx) Correction on the handling of unknown, unforeseen, and erroneous protocol data and other miscellaneous in SRAP Huawei, HiSilicon CR Rel-17 38.351 17.0.0 0005 - F NR\_SL\_relay-Core

#### 6.7.2.4 QoS

Mechanisms for E2E QoS management.

[R2-2204993](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204993-38321_Correction%20for%20sequential%20rule%20of%20destination%20index.doc) Correction for sequential rule of destination index OPPO draftCR Rel-17 38.321 17.0.0 NR\_SL\_relay-Core

#### 6.7.2.5 Discovery and re/selection

Including 5G ProSe Direct Discovery for the non-relaying case. Re-using LTE discovery and re/selection as baseline.

Summary document

[R2-2206056](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206056_Summary%20of%20AI%206.7.2.5%20on%20Discovery%20and%20(re)selection-v03_Rapp.docx) Summary of AI 6.7.2.5 on Discovery and (re)selection vivo discussion Rel-17 NR\_SL\_relay-Core

[to be agreed]

Proposal 1-1: RAN2 to agree UL/SL prioritization rules in MAC specification should also consider SL discovery transmissions.

Proposal 1-4: RAN2 to agree that resource pool selection procedure for discovery should be specified in MAC specification and this procedure is applicable to both single MAC PDU case and multiple MAC PDU case.

Discussion:

OPPO have some concern on P1-1; they agree with the intention but think the CR needs some tuning.

Apple think we should modify P1-1 to say the rules “apply to” discovery transmissions.

Agreements:

Proposal 1-1 (modified): RAN2 to agree UL/SL prioritization rules in MAC specification also apply to SL discovery transmissions.

Proposal 1-4: RAN2 to agree that resource pool selection procedure for discovery should be specified in MAC specification and this procedure is applicable to both single MAC PDU case and multiple MAC PDU case.

Detailed implementation of these agreements can be discussed in the MAC CR discussion.

[to be discussed]

Proposal 1-2: If Proposal 1-1 is agreed, further discuss whether the TP in R2-2205610 is agreeable.

Proposal 1-3: The TP in R2-2204769 (TS 38.321) to add definition of LCID for discovery is to be discussed.

Proposal 2-1: RAN2 to discuss whether the relay (re)selection procedure should be updated with adding cell (re)selection in the procedure text, and if yes, adopt the TP in R2-2204587 as baseline.

Proposal 2-2: RAN2 to discuss whether UE shall only monitor dedicated discovery RX pool(s) when performing discovery reception operation if the UE is (pre-)configured with dedicated discovery RX pool(s), and if yes, adopt the TP on [O058] in R2-2204636 as baseline.

Proposal 2-3: If Proposal 1-4 is agreed, RAN2 to further discuss whether the TP in R2-2204768 is agreeable, or we introduce a dedicated sub-clause for TX pool selection.

Proposal 2-4: RAN2 to discuss whether the Uu threshold conditions are also used to control whether a UE shall MONITOR discovery messages for relay operation, and if yes, to further discuss whether the TP in R2-2205345 is agreeable.

Proposal 2-5: RAN2 to discuss whether groupcast can be used for discovery transmission, and if no, adopt the TP in R2-2205963 as baseline.

Proposal 2-6: RAN2 to discuss whether SL CG is supported for 1) non-relay discovery message transmission and 2) relay discovery message transmission by relay/remote UE before remote UE connection with relay UE, and if both no, adopt the TP in R2-2205356 as baseline.

Proposal 2-7: RAN2 to discuss whether CBR should be measured for discovery in dedicated and/or shared pool, and if yes, adopt the TP in R2-2204564 as baseline.

[others]

Proposal 3: R2-2204992 (TS 38.304), R2-2205114(TS 38.321), and TP of P3 in R2-2205345(TS 38.331), can be handled by related CR rapporteur.

Proposal 4: R2-2205357 (TS 38.331) is an optimization and is de-prioritized.

Proposal 5: R2-2204636 (except [O058]), R2-2205063 are to be discussed in [Pre118-e][602].

* [AT118-e][621][Relay] Initial comments on discovery and (re)selection (vivo)

Scope: Collect company views on the issues raised in R2-2206056.

Intended outcome: Report to Wednesday session in R2-2206243

Deadline: Tuesday 2022-05-10 1800 UTC

[R2-2206243](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2206243.zip) Initial comments on discovery and (re)selection of AI 6.7.2.5 vivo discussion

[Easy]

[unanimous]Proposal 1a: RAN2 to confirm SL CG type-1 (if configured) can be used for Non-relay discovery transmission.

[unanimous]Proposal 1b: RAN2 to confirm SL CG type-1 (if configured) can be used for Relay discovery transmission in the following cases:

- By remote UE before connecting with relay UE

- By relay UE before or after connecting with remote UE

[Unanimous] Proposal 7: RAN2 confirms that CBR measurement is supported for NR SL discovery transmission.

Discussion:

ZTE think the intention of P1b is for L2 remote/relay UE and we could specify this; in previous meetings we had the agreement that L2 remote UE cannot be configured with CG type 1 if relay connection has been set up.

Ericsson have some concern about P1a and think it could be used by the remote UE when connected to a relay UE but for non-relay discovery. vivo indicate that there is no remote/relay concept for the non-relay discovery case, and any non-relay activity should be on a different unicast link.

OPPO agree with ZTE’s intention and wonder if we should clarify the case of L3 relay in P1b as well.

MediaTek understand that in stage 2 there was a proposal to limit the L3 relay operation to mode 2 only, and if we take this agreement allowing CG type 1 for L3 relay we should update the stage 2.

Apple wonder if there would be impact to the MAC spec; they think a NOTE could be added to clarify the applicability of the CG type 1.

Huawei think we would need to add information to the UAI for the UE to be able to request the CG for discovery, but this could be done at a subsequent meeting.

Ericsson are not sure of Huawei’s suggestion since the use of CG is anyway up to gNB implementation.

Agreements:

Proposal 1a (modified): RAN2 to confirm SL CG type-1 (if configured) can be used for Non-relay discovery transmission. This does not affect existing agreements restricting CG type 1 on the relay link.

Proposal 1b (modified): RAN2 to confirm SL CG type-1 (if configured) can be used for Relay discovery transmission in the following cases:

- By remote UE before connecting with relay UE (including L2 remote/relay UE)

- By relay UE before or after connecting with remote UE

- Confirm that SL CG type-1 can always be used for L3 remote/relay UE if the gNB configures it

A NOTE can be added to the MAC spec to indicate P1a/P1b, subject to checking in the MAC CR discussion.

[Unanimous] Proposal 7: RAN2 confirms that CBR measurement is supported for NR SL discovery transmission.

[10/13] Proposal 5: TP in R2-2205345 is not agreed. (i.e. Uu threshold conditions are not used to control whether a UE shall MONITOR discovery messages for relay operation)

[11/13] Proposal 10: TP in R2-2205345 is not agreed. (i.e. cell definition for remote UE is already clear)

Discussion:

Xiaomi think if we do not take P5, the discovery procedure is partly broken; in the model B scenario, it could be impossible to send the response message because the UE monitors but cannot transmit, and in the model A procedure it may not be clear if the communication link can be established (the UE may receive the message and establish the link because there is no threshold check, but then be unable to act as a relay).

InterDigital think these corner cases exist, but P5 is similar to legacy procedures in LTE where the thresholds were only used for transmission to allow the eNB to control interference, and they would prefer to follow this.

Qualcomm think only the Uu link quality thresholds are considered for discovery, and monitoring would be based on the reselection thresholds. They agree with InterDigital about staying with the legacy behaviour.

vivo think the monitoring could be left to UE implementation.

Xiaomi emphasise that the transmission of sidelink communication could be inhibited, and the UE implementation could trigger interactions with upper layers that then could not be carried out.

Agreements:

[10/13] Proposal 5: TP in R2-2205345 is not agreed. (i.e. Uu threshold conditions are not used to control whether a UE shall MONITOR discovery messages for relay operation)

[11/13] Proposal 10: TP in R2-2205345 is not agreed. (i.e. cell definition for remote UE is already clear)

[For discussion]

[6/13] Proposal 2: The TP in R2-2204587 is not agreed (i.e. current NOTE-3 already correctly captures the agreement for cell/relay (re)selection).

Discussion:

vivo indicate that companies expressed concerns that the TP would add a new condition to trigger cell reselection, but some companies felt that another change in the same spirit could be considered.

MediaTek think the formulation of the proposal is a little strange, and maybe we could confirm the issue and leave open the topic for future discussion.

Xiaomi do not see that there is a need to clarify beyond the existing NOTE 3. vivo report that the six companies listed as supporting the proposal felt the NOTE was already clear.

[9/13] Proposal 3: RAN2 to agree that the UE should only monitor dedicated resource pool(s) for discovery once configured by network or pre-configuration. The dedicated pool should be a superset to cover all possible discovery transmission in different dedicated/shared pools, which can be left to gNB implementation.

[10/10] Proposal 4: If Proposal 3 is agreed, the TP on [O058] in R2-2204636 is agreed.

Discussion:

Ericsson think there may be other UEs using shared resource pool and we should not restrict UE monitoring behaviour unnecessarily (similar to the threshold discussion above). Xiaomi and InterDigital agree.

InterDigital think the argument for the proposal was that the UE would need to monitor fewer pools, but if we constrain the configuration as suggested, the monitoring at the UE is just as bad as if we did not have the proposal.

Nokia, Lenovo, NEC, and Kyocera agree with Ericsson.

vivo indicate that the current RRC spec says the UE should only monitor the dedicated pool; if we want to avoid constraining the UE’s monitoring behaviour, we should update this requirement as well.

Apple recall that the reason to introduce the dedicated pool was to allow power saving, and if we do not have something like this proposal, it is not clear what the benefit of the dedicated pool is.

vivo clarify that in the normal configuration procedure, the UE only monitors the dedicated pool, but in preconfiguration the RRC says the UE monitors the dedicated or shared pool.

ZTE agree with Ericsson and think it is difficult in inter-PLMN scenarios to ensure a unified dedicated resource pool configuration.

Xiaomi think the offline discussion talked originally about whether to prioritise the dedicated pools.

OPPO supported monitoring only the dedicated resource pool, but they hear more voices now for leaving it open; they wonder if we could agree that the UE monitors the dedicated pool if configured, and the shared pool if configured.

Ericsson think we could leave it to UE implementation.

vivo think if we do not have P3, the RRC spec needs to be updated, because we currently have an if/else indicating which pools to monitor. InterDigital and CATT have the same understanding. OPPO think this could be addressed in the CR discussion. Xiaomi think a NOTE might be enough.

[For discussion] Proposal 6: RAN2 to send an LS to SA2 to check whether discovery message can be transmitted in groupcast [8/13] and/or unicast [7/13] manner.

Discussion:

OPPO see that some companies have this concern, and think the two directions are to maintain the AS layer spec as it is and add the cast type indicator in SA2, or keep the SA2 spec as it is and have some further investigation of the AS specs. Their view is that restricting discovery to broadcast may be infeasible and offline discussion may be helpful.

MediaTek think the discovery message is mainly transmitted by broadcast or groupcast, but if there is already a unicast link with a peer UE there should be no need to re-discover; so they do not see the use case for unicast.

Qualcomm agree with MediaTek about the unicast point and think discovery with a pre-existing unicast link was not previously discussed. They think there are related issues that would need to be discussed, e.g. with the PDCP format.

Qualcomm do not see the benefit of using unicast or groupcast when HARQ feedback is disabled.

OPPO indicate that unicast discovery is for the response message in model B.

Qualcomm think the cast type indication has to come from upper layers, and if it is missing in SA2 specs the functionality will not work without it.

[For discussion] Proposal 8a: When UE is configured to transmit discovery, CBR measurements can be performed in dedicated discovery pool or shared pool, based on which pool the UE selects to transmit discovery.

[For discussion] Proposal 8b: When UE is configured to transmit discovery, in addition to dedicated discovery pool or shared pool, CBR measurements can also be performed in other pools (e.g. tx-PoolMeasToAddModList, sl-TxPoolExceptional) as legacy behaviour in sidelink communication.

Discussion:

OPPO agree with the intention, but wonder in P8b if it just confirms legacy behaviour. vivo clarify that a spec change is needed; the current spec says if the UE is configured to transmit communication, it is expected to perform CBR in the legacy pools, but the spec does not say something similar for discovery.

[For discussion] Proposal 9: TP of opt1 in R2-2204564 can be revised to minimize the spec change to reflect the CBR measurement on discovery, or we leave it to RRC CR offline discussion.

Agreements:

Proposal 2 (modified): The TP in R2-2204587 is not agreed (other clarifications of the interaction between cell and relay (re)selection can be considered in future).

The UE is expected to monitor the dedicated discovery pool if configured (as currently specified in RRC); we do not specify that the UE monitors only the dedicated discovery pool after it is configured. Details to be resolved in the RRC CR discussion, i.e. whether something needs to be captured.

Proposal 8a: When UE is configured to transmit discovery, CBR measurements can be performed in dedicated discovery pool or shared pool, based on which pool the UE selects to transmit discovery.

Proposal 8b: When UE is configured to transmit discovery, in addition to dedicated discovery pool or shared pool, CBR measurements can also be performed in other pools (e.g. tx-PoolMeasToAddModList, sl-TxPoolExceptional) as legacy behaviour in sidelink communication.

Implementation of P8a/P8b can be handled in RRC CR discussion.

* [AT118-e][640][Relay] Cast type for discovery (OPPO)

Scope: Discuss the options on groupcast and unicast for discovery (P6 of R2-2206243) and determine whether spec impact and/or an LS to SA2 is needed.

Intended outcome: Report to Monday week 2 session in R2-2206381

Deadline: Friday 2022-05-13 1800 UTC

[R2-2206381](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206381%20-%20Summary%20of%20%5b640%5d%20Cast%20type%20for%20discovery%20(OPPO)_final_V01_Rapp.doc) Summary of [640] Cast type for discovery (OPPO) OPPO discussion

Proposal 1 Send LS to S2 including: 1) ask S2 if they can provide UC/GC/BC cast-type-indicator to AS layer, 2) if no, whether SA2 is fine if all discovery message sent to either UC/GC/BC destination L2 ID always uses BC-type cast-type-indicator in SCI and are filtered in MAC layer based on destination L2 ID by assuming it is BC-type discovery message.

Proposal 2 R2 postpone the discussion till feedback from S2.

Discussion:

Ericsson think option 2 in P1 is divided between Tx and Rx UE parts.

Apple think we should explicitly mention the discovery messages in part 1 of P1, and on the second part, they think we can solve the MAC layer filtering problem based on SA2 decision, but we do not need to commit to a specific solution now; they think there are other alternatives at least for model B.

CATT think part 2 of P1 is not really needed.

MediaTek understand that P1 exhausts all the foreseeable alternatives, i.e. these are the only solutions we can see, so they think we should keep P1 as it is. Qualcomm agree with keeping part 2 of P1.

OPPO indicate in response to Apple’s question that the proposal intends to say that if only BC type indicator is used, the Rx UE must do some filtering at MAC layer.

Huawei also think the proposal is fine as it is, and the wording can be fine-tuned by email.

Intel think we could remove “always”, if the UE knows the source ID by pre-configuration.

Agreement:

Proposal 1 (modified) Send LS to S2 including: 1) ask S2 if they can provide UC/GC/BC cast-type-indicator to AS layer, 2) if no, whether SA2 is fine if all discovery message sent to UC/GC/BC destination L2 ID always uses BC-type cast-type-indicator in SCI and are filtered in MAC layer based on destination L2 ID by assuming it is BC-type discovery message.

* [AT118-e][645][Relay] LS to SA2 on cast type in discovery (OPPO)

Scope: Draft an LS to SA2 asking 1) if upper layers can provide UC/GC/BC cast-type-indicator to AS layer, 2) if no, whether SA2 is fine if all discovery message sent to UC/GC/BC destination L2 ID always uses BC-type cast-type-indicator in SCI and are filtered in MAC layer based on destination L2 ID by assuming it is BC-type discovery message.

Intended outcome: Approved LS (without CB if possible) in R2-2206391

Deadline: Thursday 2022-05-19 0400 UTC

[R2-2206391](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206391%20-%20LS%20on%20Cast%20Type%20for%20Discovery%20message.docx) LS on Cast Type for Discovery message RAN2 LS out Rel-17 NR\_SL\_relay\_enh-Core To:SA2 Cc:CT1

* Approved (email discussion [AT118-e][645])

RILs where some discussion is needed

[R2-2204564](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204564%20%5bV353%5d%5bZ652%5d%20Discussion%20and%20corrections%20on%20CBR%20measurements%20for%20NR%20SL%20discovery.docx) [V353][Z652] Discussion and corrections on CBR measurements for NR SL discovery vivo discussion

[R2-2204587](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204587%20Relay%20selection%20Requirement%20conflict.docx) Relay selection requirement conflict [M112][v208] MediaTek Inc. discussion Rel-17 NR\_SL\_relay-Core

[R2-2204636](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38331_draftCR_(Rel-17)_R2-2204636%20-%20%5bO042,%20O047-O049,%20O058-O060%5d.docx) Correction on [O042, O047-O049, O058-O060] OPPO draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

[R2-2204675](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204675%20%5bV410%5d%5bO058%5d%20Dedicated%20pool%20for%20discovery%20reception.docx) [V410][O058] Dedicated pool for discovery reception vivo discussion

MAC related

[R2-2204767](C:\\Users\\mtk16923\\Documents\\3GPP Meetings\\202205 - RAN2_118-e, Online\\Extracts\\R2-2204767.docx" \o "C:\Users\mtk16923\Documents\3GPP Meetings\202205 - RAN2_118-e, Online\Extracts\R2-2204767.docx) Discussion on Resource Pool Selection for Discovery Message CATT discussion Rel-17 NR\_SL\_relay-Core

[R2-2204768](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204768.docx) Correlation on Resource Pool Selection for Discovery Message CATT draftCR Rel-17 38.321 17.0.0 F NR\_SL\_relay-Core

[R2-2204769](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204769.docx) Introduction of LCID for discovery message CATT draftCR Rel-17 38.321 17.0.0 F NR\_SL\_relay-Core

[R2-2205114](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205114-Reduction%20of%20some%20parts%20of%20selection%20of%20logical%20channels%20in%20SL%20Relay%20%20(38.321%20running%20CR).docx) Reduction of some parts of selection of logical channels in SL Relay (38.321 running CR) LG Electronics France CR Rel-17 38.321 17.0.0 1254 - F NR\_SL\_relay-Core

[R2-2205356](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205356%20Discussion%20on%20MAC%20functionality%20for%20discovery.docx) Discussion on MAC functionality for discovery Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

[R2-2205610](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205610%20Correction%20on%20SL%20discovery%20and%20UL%20prioritization.doc) Correction on SL discovery and UL prioritization Samsung discussion Rel-17 NR\_SL\_relay-Core

38.304 related

[R2-2204992](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204992-38304_Correction%20to%20support%20non-relay%20discovery.docx) Correction to support non-relay discovery OPPO draftCR Rel-17 38.304 17.0.0 NR\_SL\_relay-Core

Documents without identified RIL (no ASN.1 impact)

[R2-2205063](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205063%20Corrections%20on%20the%20Sidelink%20discovery%20transmission.docx) Correction on the Sidelink discovery transmission ZTE, Sanechips CR Rel-17 38.331 17.0.0 3036 - F NR\_SL\_relay-Core

[R2-2205345](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205345.docx) Sidelink discovery operation - monitoring and transmission Beijing Xiaomi Mobile Software draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

Documents without identified RIL (ASN.1 impact)

[R2-2205357](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205357%20Assisting%20L2%20Remote%20UE%20to%20correctly%20evaluate%20threshold%20condition.docx) Assisting L2 Remote UE to correctly evaluate threshold condition Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

RLC related

[R2-2205963](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.322_draftCR(Rel-17)_R2-2205963%20-%2038.322%20CR%20for%20removing%20groupcast%20transmission%20mode%20for%20sidelink%20discovery.docx) Correction on Groupcast transmission mode support for sidelink discovery Qualcomm Incorporated draftCR Rel-17 38.322 17.0.0 C NR\_SL\_relay-Core

#### 6.7.2.6 UE capabilities

[R2-2204637](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38331_draftCR_(Rel-17)_R2-2204637%20-%20Correction%20on%20UE%20capability%20for%20discovery%20BC%20list%20(38.331).docx) Correction on UE capability for discovery BC list (38.331) OPPO draftCR Rel-17 38.331 17.0.0 B NR\_SL\_relay-Core

[R2-2204638](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38306_draftCR_(Rel-17)_R2-2204638%20-%20Correction%20on%20UE%20capability%20for%20discovery%20BC%20list%20(38.306).docx) Correction on UE capability for discovery BC list (38.306) OPPO draftCR Rel-17 38.306 17.0.0 B NR\_SL\_relay-Core

[R2-2204770](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204770.docx) Further discussion on UE capability CATT discussion Rel-17 NR\_SL\_relay-Core

[R2-2205988](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205988%20Clarification%20on%20supported%20BC%20of%20Uu%20and%20sidelink%20discovery.docx) Clarification on supported BC of Uu and sidelink discovery Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

#### 6.7.2.7 ASN.1 issues

Any contributions related only to the details of relay-specific ASN.1 in 38.331.

Output of pre-meeting RRC CR discussion [602]

[R2-2206077](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2206077.zip) Draft CR for SL relay class1/2 RIL issues (Output of Pre118-e #602) Huawei, HiSilicon draftCR Rel-17 38.331 17.0.0 NR\_SL\_relay-Core

[R2-2206078](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206078%20Report%20of%20Pre-118-e%20%23602.docx) Report of Pre118-e #602 Huawei, HiSilicon report Rel-17 NR\_SL\_relay-Core

Higher priority issues (class 2)

Issue 4: PC5 RLC bearer and SRAP configuration for remote UE’s SRB1 transmission at PC5 hop

Proposal 1: Regarding the configuration used for SRB1 transmission/reception at PC5 hop, RAN2 to agree:

– All SRB1 messages are allowed to use default SL-RLC1, i.e. remove the dedicated configuration of PC5 RLC from RRCReestablishment message;

– Discuss whether to remove the dedicated configuration of PC5 RLC from RRCSetup message;

– Define default configuration of SRAP used for reception of RRCResume/RRCReestablishment at PC5 hop, in order to establish SRAP entity and pass the messages to RRC layer.

Discussion:

Ericsson think since RRCSetup is not integrity protected, a dedicated configuration may not be a good idea.

Qualcomm understand that the RRCSetup is similar to what we have on Uu and it does not make sense to remove the configuration for RLC for SRB1. For RRCReestablishment they think it should be removed. Qualcomm think there may be a concern in RAN3 about providing the SL-RLC configuration across F1 interface.

Apple have the same view as Qualcomm; they think we had a previous agreement to include the dedicated configuration, and this is analogous to configuring Uu SRB1. They do think it should be removed from RRCReestablishment, not due to security but because it can be multiplexed with the RRCReconfiguration.

Samsung have the same concern as Ericsson. Chair wonders why it is a different issue from Uu SRB1; Samsung understand that the message carries more of the remote UE’s dedicated configuration.

Intel agree on Uu we have the SRB1 configuration, but think we should check the security concern and essentiality of the configuration offline.

Ericsson indicate we currently allow providing any configuration in RRCSetup, not just SRB1.

Issue 17: Missing information of PCI and ARFCN-DL for key derivation during RRC resume/reestablishment procedure

Proposal 2: PCI and ARFCN-DL should be provided to remote UE to derive KgNB before remote UE receiving RRCResume/RRCReestablishment message. FFS using PC5 RRC or the RRC container in discovery message.

Discussion:

Intel wonder if we have a solution for the target cell ID that is required for the short MAC-I. Huawei indicate that the NCGI is available in the discovery message. Ericsson have the same understanding but want to double-check.

Huawei think SIB1 should be available before RRCReestablishment.

Issue 18: To enable allowlist for Event X1

Proposal 3: RAN2 to agree adding useAllowedCellList in event X1.

Issue 20. Confirm the LCIDs of SL\_RLC1, SL\_RLC0, SL SRB4 are 56, 57, 58.

Proposal 4: RAN2 to confirm the LCIDs of SL\_RLC1, SL\_RLC0, SL SRB4 are 56, 57, 58.

Agreements:

Proposal 1 (modified): Regarding the configuration used for SRB1 transmission/reception at PC5 hop, RAN2 to agree:

– All SRB1 messages are allowed to use default SL-RLC1, i.e. remove the dedicated configuration of PC5 RLC from RRCReestablishment message;

– Discuss offline in [AT118-e][633] whether to remove the dedicated configuration of PC5 RLC from RRCSetup message;

– Define default configuration of SRAP used for reception of RRCResume/RRCReestablishment at PC5 hop, in order to establish SRAP entity and pass the messages to RRC layer.

Proposal 2 (modified): PCI and ARFCN-DL should be provided to remote UE to derive KgNB before remote UE receiving RRCResume/RRCReestablishment message. Discuss offline in [AT118-e][633] whether to use PC5-RRC or the RRC container in discovery message; the availability of target cell ID can also be checked if an issue is found.

Proposal 3: RAN2 to agree adding useAllowedCellList in event X1.

Proposal 4: RAN2 to confirm the LCIDs of SL\_RLC1, SL\_RLC0, SL SRB4 are 56, 57, 58.

Medium priority issues (may have asn.1 impact)

Issue 6: How to determine serving cell change of target relay UE before path switch

Proposal 5: RAN2 to down select among the solutions for remote UE determining target relay UE’s serving cell change:

– Based on measurement report;

– Based on cell ID indicated in both of path switch command and discovery message, i.e. NCGI is to be added to path switch command.

– Keep the current description, i.e. left to UE implementation.

Lower priority issues (class 1)

Issue 2: Whether the concept of PCell/current cell is applicable to L2 remote UE

Proposal 6: RAN2 to agree keeping the concept of PCell/current cell for remote UE.

Issue 3: Discuss whether L2 relay can be configured with HO without DRB and/or SRB2

Proposal 7: RAN2 to confirm L2 relay cannot be configured with HO without DRB and/or SRB2 (Same requirement as legacy UE).

Issue 16: Clarify whether CHO can be configured to relay UE

Proposal 8: RAN2 to confirm CHO cannot be configured to L2 U2N Relay UE.

Issue 11: Clarification on the term of “no suitable cell” for OoC case during AS criteria checking, e.g. no serving cell, out of coverage on the frequency used for SL communication, no acceptable cell, no cell to camp on

Proposal 9: RAN2 to discuss to replace “no suitable cell” with which one from “no acceptable cell” or “no serving cell” or “no cell to camp on”.

Issue 5: Clarify the meaning and differentiation of the following term: capable of/acting as/is a L2 U2N Relay UE or Remote UE

Proposal 10: Update the RRC specification as following:

– For the procedural text only applicable to UEs acting as U2N remote UE or U2N relay UE, use “UE is acting as U2N remote/relay UE”

– For the procedural text common for UEs acting as U2N remote/relay UE and UEs to be acting as U2N remote/relay UE, use “UE capable of U2N remote/relay UE operation”

Issue 9: Regarding measurement reporting on candidate relay, clarify if the strongest relay is among the ones met upper layer criteria.

Proposal 11: RAN2 to confirm the remote UE only reports the relay UEs met both of upper layer criteria and AS layer criteria in the measurement results.

Issue 15: Whether to specify remote UE behaviour of re-establish PC5 RLC channel of SRB1 during RRC reestablishment

Proposal 12: RAN2 to discuss whether to specify remote UE behaviour of re-establish PC5 RLC channel of SRB1 during RRC reestablishment.

* [AT118-e][633][Relay] Remaining ASN.1 review issues (Huawei)

Scope: Discuss the remaining issues from R2-2206077, prioritising the high and medium priority issues.

Intended outcome: Report to Monday week 2 session in R2-2206254

Deadline: Friday 2022-05-13 1800 UTC

[R2-2206254](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206254%20Report%20of%20%5bAT118-e%5d%5b633%5d.docx) Report of [AT118-e][633][Relay] Remaining ASN.1 review issues (Huawei) Huawei, HiSilicon discussion

Higher priority issues:

[12/14] Proposal 1a: Keep the dedicated SL RLC and SRAP configuration in RRCSetup message for remote UE’s SRB1 transmission/reception at PC5 hop as the current RRC specification.

Proposal 1b: Remove the sl-ServingCellInfo from RRCSetup message to the first RRCReconfiguration message. Make the same change to RRCReestablishment/RRCResume message.

[11/14] Proposal 2a: PCI and ARFCN-DL of relay UE’s serving cell is included in the RRC container in discovery message for KgNB derivation.

Proposal 2b: PCI is removed from sl-ServingCellInfo.

[13/14]Proposal 2c: The cell identity in cellAccessRelatedInfo (from either discovery message or SIB1) is used to calculate shortMAC-I at remote UE as legacy, and no extra spec impact is needed.

Discussion:

Ericsson are OK with the proposals in principle but have a comment on P1a: If the intention is to have this configuration only for SRB1, we should have only the IEs that are necessary. Chair suggests we could clarify in field descriptions; Ericsson think we should specify the IEs that can be included.

Intel assume in the procedural text, we would say if the network did not include the configuration, the UE would use the default, so a network with a security concern can omit it.

Huawei indicate we already have field descriptions indicating that the dedicated configurations only apply to SRB1, and on Intel’s point, they think we can use the same text as Uu for the RLC configuration, but the SRAP configuration must be present because it includes the local UE IDs. OPPO, Qualcomm, and CATT agree with Huawei.

Ericsson would like to have the same kind of description as for the RRCReconfiguration, with an explicit list of the IEs that can be included.

Apple think there is a missing proposal with ASN.1 impact on discovery signalling (issue A912). Huawei understand that this was commented in the offline discussion but did not have support.

Intel indicate on P2a that they can accept the majority preference for discovery, but they think the argument made in the discussion that notification may precede cell reselection is wrong in light of other agreements. They wonder if there is a clear expectation on when the discovery message is sent to keep the interruption time down.

Huawei clarify that this is for the remote UE’s reestablishment, and the discussion on cell reselection was about the relay UE’s reestablishment; if the relay UE experiences RLF, the relay UE needs to send the notification immediately, which means it may not obtain the new cell’s information. On the discovery message timing, they indicate it is up to UE implementation which discovery model would be used, and this affects the timing of the messages.

Qualcomm think on P1b, it is not clear why we would remove the sl-ServingCellInfo, and we have previous agreements that the C-RNTI is sent in the RRCSetup. Huawei indicate that this was suggested in the discussion, motivated by the desire to keep dedicated configuration other than SRB1 out of RRCSetup for security reasons. Intel understand that the C-RNTI is not needed until re-establishment, so there is time for the RRCReconfiguration.

Qualcomm think we should clarify where the C-RNTI is included.

Intel think discovery gives a potentially large delay, but they can accept using it.

Agreements:

[12/14] Proposal 1a: Keep the dedicated SL RLC and SRAP configuration in RRCSetup message for remote UE’s SRB1 transmission/reception at PC5 hop as the current RRC specification.

Proposal 1b: Remove the sl-ServingCellInfo from RRCSetup message to the first RRCReconfiguration message. Make the same change to RRCReestablishment/RRCResume message.

[11/14] Proposal 2a: PCI and ARFCN-DL of relay UE’s serving cell is included in the RRC container in discovery message for KgNB derivation.

Proposal 2b: PCI is removed from sl-ServingCellInfo.

[13/14]Proposal 2c: The cell identity in cellAccessRelatedInfo (from either discovery message or SIB1) is used to calculate shortMAC-I at remote UE as legacy, and no extra spec impact is needed.

Medium priority issues:

[11/14] Proposal 3: It is left to remote UE implementation on how to identify relay UE’s serving cell change in case of path switch, i.e. keep the current description in spec.

Agreement:

[11/14] Proposal 3: It is left to remote UE implementation on how to identify relay UE’s serving cell change in case of path switch, i.e. keep the current description in spec.

Low priority issues:

[14/14] Proposal 4: Keep the concept of PCell/current cell for remote UE.

[14/14] Proposal 5: RAN2 to confirm that L2 relay cannot be configured with HO without DRB and/or SRB2 (Same requirement as legacy UE).

[11/14] Proposal 6: RAN2 to confirm that CHO cannot be configured to L2 U2N Relay UE.

Discussion:

Nokia are concerned that this proposal may require some specific action, e.g., if the UE starts acting as a relay while waiting for a CHO trigger. They also do not understand what the concern is that requires the restriction.

Qualcomm agree with Nokia, and think we should not be putting restrictions on a feature that a UE can support (compare DC).

Xiaomi agree with Nokia.

OPPO suggest we would have no spec effort for support of CHO for relay in this release. Huawei agree. Nokia agree.

Lenovo and LG agree with Nokia’s concern.

Ericsson think this was not previously investigated and we are not sure of the implication; they wonder if we take OPPO’s solution, what we will do if something turns out to be broken, e.g., in IOT.

OPPO think if we say no additional spec effort, it is essentially the same as having no agreement for this issue. Ericsson think if we agree to have CHO for the relay, it is not clear what will happen to the remote UE, e.g. for handover to SCG. They are concerned about the case that CHO triggers an MR-DC configuration that would not be compatible with relaying, and they are concerned that there may be other cases not investigated.

vivo think Ericsson’s concern is well founded and we do not yet know what the impact of CHO might be.

Chair suggests we could have guidance that the network does not configure CHO and L2 U2N Relay UE together.

Nokia think Ericsson have a point and there may be issues. They think there may be further spec impact to forbid configuring the features together.

Proposal 7: RAN2 to discuss if clarification on the term of “no suitable cell” for OoC case during AS criteria checking is needed, (e.g. no serving cell, out of coverage on the frequency used for SL communication, no acceptable cell, no cell to camp on).

Proposal 8: To update the RRC specification as follows:

[14/14]– For the procedural text only applicable to UEs acting as U2N remote UE or U2N relay UE, use “UE is acting as U2N remote/relay UE”

[12/14]– For the procedural text common for UEs acting as U2N remote/relay UE and UEs to be acting as U2N remote/relay UE, use “UE capable of U2N remote/relay UE operation”

[14/14] Proposal 9: RAN2 to confirm remote UE only reports the relay UEs fulfil upper layer criteria and AS layer criteria in the measurement results in case of reporting up to N strongest candidate relay UEs,

Discussion:

Ericsson have some concern with the second bullet under P8, because a “capable” UE may not have intentions of using the feature. Huawei understand that this text is to replace “to be acting as” with “capable”. Chair understands that this text applies to UEs that might act as a remote/relay UE but are not doing it now; Huawei, OPPO, and Apple have the same understanding.

OPPO think this issue needs to be elucidated with respect to specific spec details.

[6/14:8/14] Proposal 10: RAN2 to discuss whether to specify PC5 RLC reestablishment for SRB1 transmission during RRC reestablishment. (If not, “release the old RLC PC5 channel and establish a new RLC PC5 channel” can be used to achieve RLC reestablishment-like behaviour.)

[10/14] Proposal 11: Agree the proposed change in V200/v201.

Discussion:

On P11, Huawei indicate that it is a correction to a legacy note saying that the RRC connection is triggered by upper layer; we now have the case that it is triggered by remote UE’s access, which is not an upper-layer trigger.

On P10, Ericsson think we need to decide this meeting or we will have a NBC problem. OPPO understand that it is a UE internal question; Ericsson think the RLC SN has to be reset to 0 and this needs to be synchronised. OPPO think this is done by either mechanism

Agreements:

[14/14] Proposal 4: Keep the concept of PCell/current cell for remote UE.

[14/14] Proposal 5: RAN2 to confirm that L2 relay cannot be configured with HO without DRB and/or SRB2 (Same requirement as legacy UE).

CHO cannot be configured to L2 U2N Relay UE. The network should not configure a UE as a L2 U2N Relay UE while waiting for CHO trigger.

Proposal 8 (modified): To update the RRC specification as follows:

[14/14]– For the procedural text only applicable to UEs acting as U2N remote UE or U2N relay UE, use “UE is acting as U2N remote/relay UE”

[12/14]– For the procedural text common for UEs acting as U2N remote/relay UE and UEs that can act as U2N remote/relay UE but are not currently acting as U2N remote/relay UE, use “UE capable of U2N remote/relay UE operation”

[14/14] Proposal 9: RAN2 to confirm remote UE only reports the relay UEs fulfil upper layer criteria and AS layer criteria in the measurement results in case of reporting up to N strongest candidate relay UEs,

[10/14] Proposal 11: Agree the proposed change in V200/v201.

P7 can be discussed in rapporteur CR.

At RRC re-establishment, the UE performs either of the following operations:

* PC5 RLC is re-established for SRB1; or
* “release and add” mechanism with the PC5 RLC channel is used to achieve re-establishment-like behaviour.

Discuss in rapporteur CR how to capture this.

RILs where some discussion is needed

[R2-2204958](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204958%20%5bB103%5d%20TP%20for%20initiation%20condition%20of%20notification%20message%20v1.0.doc) [B103] TP for initiation condition of notification message Lenovo discussion Rel-17

[R2-2205634](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205634%20-%20Discussion%20on%20whether%20UE%20dedicated%20PC5%20configuration%20can%20be%20configured%20in%20RRCReestablishment%20message%20(RIL%20A308,%20A906).doc) Discussion on whether UE dedicated PC5 configuration can be configured in RRCReestablishment message (RIL A308, A906) Apple discussion Rel-17 NR\_SL\_relay-Core

[R2-2205635](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205635%20-%20Discussion%20on%20definition%20of%20U2N%20remote%20UE%20(RIL%20A304,%20A305,%20A307,%20A311).doc) Discussion on definition of U2N remote UE (RIL A304, A305, A307, A311) Apple discussion Rel-17 NR\_SL\_relay-Core

[R2-2205685](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205685%20%5bB207%5d%5bB208%5d%20Correction%20in%20NR%20sidelink%20U2N%20Remote%20UE%20operation.docx) [B207][B208] Correction in NR sidelink U2N Remote UE operation Lenovo Mobile Com. Technology CR Rel-17 38.331 17.0.0 3112 - F NR\_SL\_relay-Core

[R2-2205774](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205774-%20%5bE082%5d%20Correction%20on%20receiving%20short%20message%20by%20remote%20UE.docx) [E082] Correction on receiving short message by remote UE Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

[R2-2205775](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205775-%20%5bE084%5d%5bE085%5d%20Correction%20on%20on-demand%20SIB%20for%20SL%20relay.docx) [E084][E085] Correction on on-demand SIB for SL relay Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

[R2-2205826](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205826-SL-Setup_Reest.docx) [M116, A906, I012, I046] SL information in RRC Setup and Reestablishment messages Intel Corporation discussion Rel-17 NR\_SL\_relay-Core Late

RILs marked PropReject with ongoing discussion in pre-meeting [602]

R2-2205066 appears to be on Z618

R2-2205228 is included for E044 only (others are PropAgree)

[R2-2204678](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204678%20%5bV207%5d%5bV208%5d%20L2%20U2N%20Remote%20UE%20RRC%20re-establishment%20procedure.docx) [V207][V208] L2 U2N Remote UE RRC re-establishment procedure vivo discussion

[R2-2204680](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204680%20%5bZ684%5d%20Max%20destination%20index%20and%20resource%20allocation%20impact.docx) [Z684] Max destination index and resource allocation impact vivo discussion

[R2-2205066](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205066%20Correction%20on%20PC5%20RLC%20channel%20configuration.docx) Correction on PC5 RLC channel configuration ZTE, Sanechips CR Rel-17 38.331 17.0.0 3038 - F NR\_SL\_relay-Core

[R2-2205092](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205092%2038.331%20CR%20for%20allow%20and%20exclude%20list%20on%20eventX1(RIL%23%20S776).docx) 38.331 CR for allow and exclude list on eventX1 (RIL#:S776) Samsung CR Rel-17 38.331 17.0.0 3046 - F NR\_SL\_relay-Core

[R2-2205228](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205228%20-%2038331%20correction%20on%20RIL%20issues%20(E041,%20E043,%20E044%20and%20E045).docx) Correction on RIL issues (E041, E043, E044 and E045) Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

[R2-2205645](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205645%20Discussion%20on%20SIB%20configuraiton%20for%20relay%20support.doc) [A903] Discussion on SIB12 configuration for relay support Apple discussion Rel-17 NR\_SL\_relay-Core

[R2-2205776](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205776-%20%5bE086%5d%20Correction%20on%20cell%20barring%20for%20SL%20relay.docx) [E086] Correction on cell barring for SL relay Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

[R2-2205780](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205780-%20%5bE104%5d%5bE112%5d%20Correction%20on%20handling%20on%20timer%20T420.docx) [E104][E112] Correction on handling on timer T420 Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

RILs discussed in pre-meeting [608]

[R2-2204679](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204679_%5bv213%5d%20Discussion%20on%20timers%20related%20issues.docx) [V213] Discussion on timers related issues vivo discussion

RILs discussed in pre-meeting [610]

[R2-2205962](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.331_draftCR(Rel-17)_R2-2205962%20-%2038.331%20RILQ539%20correction%20for%20removal%20of%20unicast%20and%20groupcast%20transmission%20mode%20for%20sidelink%20discovery.docx) RIL#Q539 - Correction on Groupcast and unicast transmission modes support for sidelink discovery Qualcomm Incorporated draftCR Rel-17 38.331 17.0.0 C NR\_SL\_relay-Core

New RILs since v192

[R2-2204962](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204962%20%5bB107%5d%20TP%20on%20unsuitale%20relay%20during%20re-establishment%20v1.0.doc) [B107] TP on unsuitable relay during re-establishment Lenovo discussion Rel-17

Rapporteur handling appears agreeable

[R2-2204677](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204677%20%5bV202%5d%5bV205%5d%20PC5%20RRC%20connection%20establishment%20and%20release%20trigger.docx) [V202][V205] PC5 RRC connection establishment and release trigger vivo discussion

[R2-2204994](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204994-38331_Correction%20on%20the%20definition%20of%20suitable%20relay%20UE.docx) Correction on the definition of suitable relay UE OPPO draftCR Rel-17 38.331 17.0.0 NR\_SL\_relay-Core

[R2-2205186](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205186%20-%2038331%20correction%20on%20RIL%20E132.docx) Correction on RIL issue E132 Ericsson draftCR Rel-17 38.331 17.0.0 NR\_SL\_relay-Core

[R2-2205646](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205646%20Discussion%20on%20relay%20UE%20notificaiton%20upon%20Uu%20RLF%20.doc) [A309] Discussion on relay UE notification upon Uu RLF Apple discussion Rel-17 NR\_SL\_relay-Core

[R2-2205690](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205690%20%5bB209%5d%5bB10%5d%5bB211%5d%20Various%20corrections%20for%20Paging%20monitoring%20and%20SI%20Acquisition.docx) [B209][B10][B211] Various corrections for Paging monitoring and System Information acquisition Lenovo CR Rel-17 38.331 17.0.0 3113 - F NR\_SL\_relay-Core

[R2-2205773](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205773-%20%5bE080%5d%20Correction%20on%20UE%20states%20and%20state%20transitions%20for%20SL%20relay.docx) [E080] Correction on UE states and state transitions for SL relay Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

[R2-2205777](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205777-%20%5bE087%5d%20Correction%20on%20paging%20reception%20by%20the%20remote%20UE.docx) [E087] Correction on paging reception by the remote UE Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

[R2-2205778](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205778-%20%5bE090%5d%20Correction%20on%20reconfigurationWithSync%20handling%20during%20path%20switch.docx) [E090] Correction on reconfigurationWithSync handling during path switch Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

[R2-2205779](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205779-%20%5bE093%5d%20Correction%20on%20new%20UE%20timers%20for%20remote%20UE.docx) [E093] Correction on new UE timers for remote UE Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_relay-Core

Added in skeleton v4

[R2-2206072](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206072%20%5bH810%5d%5bM106%5d%5bO075%5d%5bO076%5d%5bB207%5d%5bB208%5d%20On%20term%20of%20OoC,%20suitable%20cell,%20serving%20cell.docx) [H810][M106][O075][O076][B207][B208] On term of OoC, suitable cell, serving cell Huawei, HiSilicon discussion Rel-17 NR\_SL\_relay-Core

[R2-2206073](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206073%20%5bH808%5d%5bX200%5d%20Identification%20of%20target%20Relay%20UE‘s%20serving%20cell%20change.docx) [H808][X200] Identification of target Relay UE‘s serving cell change Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3158 - F NR\_SL\_relay-Core

[R2-2206074](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206074%20%5bH811%5d%5bN005%5dChange%20SetupRelease%20to%20optional%20for%20L2%20remote%20configuration%20in%20RRCSetup,Resume,Reestablishment.docx) [H811][N005]Change SetupRelease to optional for L2 remote configuration in RRCSetup/Resume/Reestablishment Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3159 - F NR\_SL\_relay-Core

[R2-2206075](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206075%20%5bH812%5d%5bO94%5d%5bI012%5d%20SRB1%20SRAP%20configuration%20and%20defaut%20RLC%20configuration%20at%20PC5%20hop.docx) [H812][O94][I012] SRB1 SRAP configuration and defaut RLC configuration at PC5 hop Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3160 - F NR\_SL\_relay-Core

[R2-2206076](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206076%20%5bH809%5d%5bA304%20A305%20A307%5d%20Clarification%20on%20the%20meaning%20of%20capable%20of,%20acting%20as,%20is%20L2%20U2N%20remote%20or%20relay%20UE.docx) [H809][A304, A305, A307, A311] Clarification on the meaning of acting as/capable of/is a relay UE/remote UE Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3171 - F NR\_SL\_relay-Core

Withdrawn/Not available

R2-2205187 Correction on RIL issues (E041, E043, E044 and E045) Ericsson discussion Rel-17 38.331 NR\_SL\_relay-Core Withdrawn

### 6.7.3 Other

Any other topics on NR sidelink relay.

MAC related

[R2-2204773](C:\\Users\\mtk16923\\Documents\\3GPP Meetings\\202205 - RAN2_118-e, Online\\Extracts\\R2-2204773.docx" \o "C:\Users\mtk16923\Documents\3GPP Meetings\202205 - RAN2_118-e, Online\Extracts\R2-2204773.docx) Miscellaneous Corrections on SL Relay CATT draftCR Rel-17 38.321 17.0.0 F NR\_SL\_relay-Core

TR 37.985 related

[R2-2204800](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204800%20TP%20to%20introduce%20Rel-17%20sidelink%20relay%20and%20discovery%20for%20TR%2037.985.docx) TP to introduce Rel-17 sidelink relay and discovery in TR 37.985 ZTE, Sanechips draftCR Rel-17 37.985 17.1.1 NR\_SL\_relay-Core

Discussion:

CATT point out the TR is not in the relay WID. vivo understand there was a similar issue with MUSIM.

Chair will consult with the RAN2 secretary on procedure for this TR.

* [AT118-e][618][Relay] 37985 relay TP (ZTE)

Scope: Evaluate the TP in R2-2204800 and produce an endorsable version.

Intended outcome: Endorsed TP in R2-2206239 and approved LS to RAN1 in R2-2206240 (without CBs)

Deadline: Wednesday 2022-05-18 0400 UTC

[R2-2206519](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206519%20Summary%20of%20%5bAT118-e%5d%5b618%5d%5bRelay%5d%2037985%20relay%20TP%20(ZTE).docx) Summary of [AT118-e][618][Relay] 37985 relay TP (ZTE) ZTE discussion Rel-17 NR\_SL\_relay-Core

* Noted (email discussion [AT118-e][618])

R2-2206239 TP to introduce Rel-17 sidelink relay and discovery in TR 37.985 ZTE, Sanechips draftCR Rel-17 37.985 17.1.1 NR\_SL\_relay-Core

* Not provided (postponed in email discussion [AT118-e][618])

R2-2206240 (LS from [618]) ZTE LS out Rel-17 To:RAN1

* Not provided (email discussion [AT118-e][618])

Stage 2 related

[R2-2205432](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205432%20Corrections%20on%20stage2%20specification%20for%20sidelink%20relay.docx) Corrections on stage2 specification for sidelink relay Huawei, HiSilicon CR Rel-17 38.300 17.0.0 0459 - F NR\_SL\_relay-Core

[R2-2205781](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205781-%20Misc%20correction%20on%2038.300%20for%20SL%20relay.docx) Misc correction on 38.300 for SL relay Ericsson draftCR Rel-17 38.300 17.0.0 F NR\_SL\_relay-Core

PDCP related

[R2-2205611](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205611%20Support%20of%20non-IP%20PDU%20type%20in%20PDCP%20protocol.doc) Support of non-IP PDU type in PDCP protocol Samsung discussion Rel-17 NR\_SL\_relay-Core

Other

[R2-2205989](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205989_36331_CR%234814_Rel-17_Clarification%20on%20NR%20sidelink%20relay%20related%20configuration.docx) Clarification on NR sidelink relay related configuration Huawei, HiSilicon CR Rel-17 36.331 17.0.0 4814 - F NR\_SL\_relay-Core

* Postponed (can be seen as a TEI17 CR in future)

Discussion:

Chair indicates the LTE RRC spec is not in the Rel-17 relay WID. Ericsson and CATT have the same understanding.

Huawei indicate this is a clarification, and the LTE RRC only refers to an RRC container without clarifying what can be included.

OPPO think it is not a critical issue.

## 6.11 NR positioning enhancements

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

WI has been declared 100% complete.

### 6.11.1 Organizational

Rapporteur input. Incoming LS etc. This AI is reserved for rapporteur and organizational inputs. For LSes that need action or have impact beyond taking into account by CR rapporteurs: One tdoc by contact company (one company) to address the LS and potential reply is considered Rapporteur Input and may be provided. Related documents and proposed responses from companies other than the contact company should be submitted to the corresponding technical agenda item.

Incoming LSs with RAN2 in Cc:

[R2-2204477](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204477_R4-2206980.docx) LS on lower Rx beam sweeping factor for latency improvement (R4-2206980; contact: Intel) RAN4 LS in Rel-17 To:RAN1 Cc:RAN2

* Noted without presentation (email discussion [AT118-e][600])

Incoming LSs with RAN2 in To: and “take into account” action

[R2-2204420](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204420_R1-2202849.docx) Reply LS on positioning issues needing further input (R1-2202849; contact: CATT) RAN1 LS in Rel-17 To:RAN2 Cc:RAN3

* Noted without presentation (email discussion [AT118-e][600])

[R2-2204424](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204424_R1-2202912.docx) Reply LS on Positioning Reference Units (PRUs) for enhancing positioning performance (R1-2202912; contact: CATT) RAN1 LS in Rel-17 To:RAN2 Cc:RAN3, SA2

* Noted without presentation (email discussion [AT118-e][600])

[R2-2204425](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204425_R1-2202922.docx) LS on multiple measurement instances (R1-2202922; contact: CATT) RAN1 LS in Rel-17 To:RAN2, RAN3

* Noted without presentation (email discussion [AT118-e][600])

[R2-2204441](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2204441.zip) Response LS on determination of location estimates in local co-ordinates (S2-2201545; contact: Ericsson) SA2 LS in Rel-17 To:RAN2 Cc:RAN1, RAN3

* Noted without presentation (email discussion [AT118-e][600])

[R2-2204464](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204464_R1-2202847.docx) LS on frequency information of SRS for positioning resources (R1-2202847; contact: CATT) RAN1 LS in Rel-17 To:RAN2, RAN3

* Noted without presentation (email discussion [AT118-e][600])

[R2-2204508](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204508_R4-2207088.docx) Reply LS on latency improvement for PRS measurement with MG (R4-2207088; contact: Huawei) RAN4 LS in Rel-17 To:RAN2, RAN1 Cc:RAN3

* Noted without presentation (email discussion [AT118-e][600])

[R2-2204521](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2204521.zip) Reply LS on Positioning in RRC\_INACTIVE State (S2-2203250; contact: Huawei) SA2 LS in Rel-17 To:RAN2 Cc:RAN3

* Noted without presentation (email discussion [AT118-e][600])

Incoming LSs with RAN2 in To: and other action

[R2-2204478](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204478_R4-2206998.docx) LS on the UE/TRP TEG framework (R4-2206998; contact: CATT) RAN4 LS in Rel-17 To:RAN1, RAN2

* [AT118-e][626][POS] LS on TEG framework (CATT)

Scope: Handle the LS in R2-2204478, determine a way forward, and draft a reply.

Intended outcome: Approved LS (without CB if possible) in R2-2206249

Deadline: Friday 2022-05-13 1800 UTC

[R2-2206385](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206385%20Report%20of%20%5bAT118-e%5d%5b626%5d%5bPOS%5d%20LS%20on%20TEG%20framework%20(CATT).docx) [AT118-e][626][POS] LS on TEG framework (CATT) CATT discussion

* Noted without presentation

Agreement:

Delete the timingErrorMargin in LPP and wait for guidance from RAN4 (decision of email discussion [AT118-e][626]).

R2-2206249 Reply LS on the UE/TRP TEG framework (R4-2206998; contact: CATT) CATT LS out Rel-17 To:RAN4 Cc:RAN1,RAN3

* Not provided (email discussion [AT118-e][626] concluded that no LS is needed)

[R2-2204491](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204491_R3-222721.docx) Questions concerning the implementation of RAN1 agreements in NRPPa (R3-222721; contact: Ericsson) RAN3 LS in Rel-17 To:RAN1, RAN2 Cc:RAN4

* [AT118-e][630][POS] LS on DL-AoD signalling load (Ericsson)

Scope: Discuss the concern on signalling load raised in R2-2204491 and draft a reply.

Intended outcome: Approved LS (without CB if possible) in R2-2206251

Deadline: Tuesday 2022-05-17 1800 UTC

R2-2206251 (LS from [630]) Ericsson LS out Rel-17 To:RAN3 Cc:RAN1

* Not provided (email discussion [AT118-e][630])

[R2-2206150](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206150_Response%20LS%20from%20RTCM%20on%20GNSS%20integrity_2.docx) Response LS to RTCM SC134 on GNSS integrity (RTCM; contact: ESA) RTCM LS in Rel-17 NR\_pos\_enh-Core To:RAN2

* Postponed (email discussion [AT118-e][600])

Draft replies

[R2-2204684](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204684%20%5bDraft%5d%20Reply%20LS%20on%20the%20response%20of%20the%20positioning%20issues%20from%20RAN1(R1-2202849;%20contact%20CATT).docx) [Draft] Reply LS on the response of the positioning issues from RAN1(R1-2202849; contact: CATT) CATT LS out Rel-17 To:RAN1 Cc:RAN3

[R2-2204685](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204685%20Reply%20LS%20on%20the%20reply%20LS%20on%20Positioning%20Reference%20Units%20(PRUs)%20for%20enhancing%20positioning%20performance%20(R1-2202912%20%20contact%20CATT).docx) Reply LS on the reply LS on Positioning Reference Units (PRUs) for enhancing positioning performance (R1-2202912; contact: CATT) CATT LS out Rel-17 To:RAN1 Cc:RAN3, SA2

[R2-2204686](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204686%20Reply%20LS%20on%20multiple%20measurement%20instances%20(R1-2202922;%20contact%20CATT).docx) Reply LS on multiple measurement instances (R1-2202922; contact: CATT) CATT LS out Rel-17 To:RAN1 Cc:RAN3

[R2-2204688](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204688%20Reply%20LS%20on%20UETRP%20TEG%20framework%20issues%20(R4-2206998;%20contact%20CATT).docx) Reply LS on the UE/TRP TEG framework (R4-2206998; contact: CATT) CATT LS out Rel-17 To:RAN4 Cc:RAN1,RAN3

Rapporteur work plan

[R2-2204934](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204934%20Known%20corrections&issues%20for%20Rel-17%20positioning%20WI.docx) Known corrections/issues for the correction phase on Rel-17 positioning WI Intel Corporation discussion Rel-17 NR\_pos\_enh-Core

* Noted without presentation (email discussion [AT118-e][600])

Stage 2

[R2-2204930](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204930_Open%20issues%20on%20TS38.305%20.docx) Open issues on TS38.305 Intel Corporation discussion Rel-17 NR\_pos\_enh-Core

[R2-2204931](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204931-38.305%20CR%20for%20Positioning%20WI.docx) 38.305 CR for Positioning WI Intel Corporation draftCR Rel-17 38.305 17.0.0 F NR\_pos\_enh-Core

[R2-2204995](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204995%20Correction%20on%20stage-2%20for%20path%20RSRP.docx) Corrections on stage 2 for path RSRP Huawei, HiSilicon CR Rel-17 38.305 17.0.0 0092 - F NR\_pos\_enh-Core

38.331

[R2-2205859](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205859%20Positioning%20RRCCR.docx) Correction based upon Positioning RILs Ericsson CR Rel-17 38.331 17.0.0 3121 - F NR\_pos\_enh-Core Late

37.355

[R2-2205828](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205828_(Summary%20of%20LPP%20Updates).docx) Summary of LPP Updates and Open Issues Qualcomm Incorporated discussion

[R2-2205829](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205829_(draft%20CR%2037355%20LPP%20Updates).docx) LPP Updates Qualcomm Incorporated draftCR Rel-17 37.355 17.0.0 F NR\_pos\_enh-Core

* [AT118-e][622][POS] 38305 positioning CR (Intel)

Scope: Review and update the rapporteur CR (R2-2204931), also taking into account proposals in the stage 2 related tdocs: R2-2205655, R2-2204690, R2-2205017, R2-2205488, R2-2205805, stage 2 proposals from AI 6.11.2.1. Also check the CR in R2-2204689 to 36.305. Discussion should coordinate with the handling of agenda item summaries.

Intended outcome: Agreed CRs to 38.305 in R2-2206244 and 36.305 in R2-2206245 (without CBs if possible)

Deadline: Tuesday 2022-05-17 1800 UTC

R2-2206386 (Report from [622]) Intel Corporation discussion

[R2-2206244](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206244%20-38.305%20CR%20for%20Positioning%20WI%20v04.docx) 38.305 CR for Positioning WI Intel Corporation CR Rel-17 38.305 17.0.0 0099 -F NR\_pos\_enh-Core

* Agreed (email discussion [AT118-e][622])

[R2-2206245](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206245%20-36.305%20CR%20for%20Positioning%20WI%20v02.docx) 36.305 CR for Positioning WI Intel Corporation CR Rel-17 36.305 17.0.0 0109 -F NR\_pos\_enh-Core

* Agreed (email discussion [AT118-e][622])
* [AT118-e][623][POS] 38331 positioning CR (Ericsson)

      Scope: Review and update the rapporteur CR, taking into account decisions of this meeting.  Discussion should coordinate with the handling of agenda item summaries.  Tdocs related to the RRC ASN.1 review from AI 6.11.2.9 can also be taken into account where discussion is needed on the rapporteur handling of a RIL item.

      Intended outcome: Agreeable CR in R2-2206246 and report in R2-2206383

      Deadline:  Tuesday 2022-05-17 1800 UTC

[R2-2206383](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206383.docx) [AT118-e][623][POS] 38331 positioning CR (Ericsson) Ericsson discussion

Proposal 1 RIL E064 is agreed; i.e TEG reporting config is decoupled from SRS-Config

Proposal 2 The procedure text for periodic TEG reporting does not need further change as suggested by RIL H568.

Proposal 3 E066 is not agreed; i.e delta signalling structure of TEG reporting is not introduced.

Proposal 4 Serving cell ID is used for the frequency information for TEG reporting.

Discussion:

Huawei think on P2, the UE needs to know how to set the contents of the report, and they are not completely sure if the current RRC procedure is clear on this.

Ericsson think P2 is somewhat obviated by the previous discussion on TEG reporting.

On P4, Qualcomm think this may be OK for RRC, but it would not work in LPP where the LMF is not guaranteed to know the serving cell. In LPP, they have used the ARFCN and they agree with vivo’s contribution that the offset from Point A is also needed. vivo agree that P4 only works for RRC.

Huawei agree with Qualcomm that only the gNB knows the serving cell ID, so it is only useful for RRC; they also wonder if the RAN3 spec is compatible with this, since the gNB needs to convert the information to a similar format as LPP, but this is outside RAN2 scope. Qualcomm indicate they checked NRPPa and found that they have the ARFCN+offsetFromPointA.

Agreements:

Proposal 1 RIL E064 is agreed; i.e TEG reporting config is decoupled from SRS-Config

Proposal 3 E066 is not agreed; i.e delta signalling structure of TEG reporting is not introduced.

Proposal 4 (modified) Serving cell ID is used for the frequency information for TEG reporting in RRC.

[R2-2206246](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206246.docx) Correction based upon Positioning RILs Ericsson CR Rel-17 38.331 17.0.0 3121 1 F NR\_pos\_enh-Core

* [Post118-e][602][POS] 38.331 positioning CR (Ericsson)

Scope: Update and check the CR in R2-2206246.

Intended outcome: Agreed CR

Deadline: Short (for RP)

* [AT118-e][624][POS] 37355 positioning CR (Qualcomm)

Scope: Review and update the rapporteur CR (R2-2205829), taking into account decisions of this meeting. Discussion should coordinate with the handling of agenda item summaries.

Intended outcome: Agreeable CR in R2-2206247 and report in R2-2206593

Deadline: Tuesday 2022-05-17 1800 UTC

[R2-2206593](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206593_(%5bAT118-e%5d%5b624%5d%5bPOS%5d%2037355%20positioning%20CR)_Summary.docx) Summary of [AT118-e][624][POS] 37355 positioning CR (Qualcomm) Qualcomm Incorporated discussion

Discussion:

Qualcomm indicate that the requested changes are implemented in the current CR.

* Noted

[R2-2206247](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206247_(draft%20CR%2037355%20LPP%20Updates)_v02.docx) LPP Updates Qualcomm Incorporated draftCR Rel-17 37.355 17.0.0 F NR\_pos\_enh-Core

* [Post118-e][603][POS] 37.355 positioning CR (Qualcomm)

Scope: Update and check the CR in R2-2206247.

Intended outcome: Agreed CR

Deadline: Short (for RP)

* [AT118-e][625][POS] 38321 positioning CR (Huawei)

Scope: Develop a rapporteur CR, taking into account decisions of this meeting. Discussion should coordinate with the handling of agenda item summaries.

Intended outcome: Agreeable CR in R2-2206248 and report in R2-2206392

Deadline: Tuesday 2022-05-17 1800 UTC

[R2-2206392](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206392%20Email%20discussion%20for%20MAC%20CR.doc) Summary for [AT118-e][625][POS] 38321 positioning CR (Huawei) Huawei, HiSilicon discussion

Proposal1: Regarding the format of the DL MAC CE for PPW activation/deactivation, confirm on the following:

 Scell index is needed in the MAC CE

 The length of the PPW id is 2 bit

 Only a single PPW can be activated/deactivated by the MAC CE

Proposal2: Adopt the TP in R2-2204996 for the MAC CE for MG activation/deactivation command/request but remove the wording "has a fixed 8-bit size". (10/11)

Proposal3: Conditions for cancelling triggered MAC CE from the upper layer does not need to be captured in the MAC spec. (6/9)

Discussion:

Huawei indicate a comment was received that the third bullet of P1 may be reverted by RAN1, so perhaps it would be safer to keep our current format and take only the first two bullets.

Qualcomm ask if the PPW ID is really unambiguous with 2 bits if the UE has 4 PPWs per BWP; does the UE know which BWP the ID refers to?

Huawei understand that 2 bits is enough within the scope of a BWP, and if we know which BWP is activated, we do not need to know the BWP ID, only the PPW ID within the active BWP. Qualcomm wonder if we activate 4 PPWs at once, it would be clear which ID refers to which PPW. Huawei think if multiple BWPs are active, they would be distinguished by serving cell, and the PPW can only be activated/deactivated within the active BWP.

Huawei indicate that P2 is editorial and not controversial.

On P3, Huawei indicate that if cancellation is triggered by the MAC layer itself, it does need to be captured in the MAC spec, and this is in line with the proposal, which only refers to the upper layer trigger. They think having the RRC layer trigger the MAC layer to cancel does not need to be specified.

ZTE acknowledge that this is a corner case, but they think the previous agreement does need to be captured in the MAC spec that if there is an indication from upper layers, it will be carried out by the MAC layer.

Samsung also prefer to capture the previous agreement, but they have some sympathy with the view that the current cancel procedure implicitly captures it; they suggest a NOTE as a compromise, to explain some possible reasons for cancellation.

Xiaomi think if we agree to P3, we can agree that MAC manages the MAC CE for positioning MG in accordance with upper layer requests.

Huawei think if we add a NOTE, it should be in the RRC spec instead of the MAC. They understand that the MAC just follows orders from RRC. They think Xiaomi’s comment is OK.

Ericsson think we should take some time rather than creating a NOTE on the fly; it could be fixed next meeting.

OPPO wonder about P1; they do not see why the serving cell index is needed. Huawei indicate that it is because the PPW is configured per BWP, and this is what disambiguates the BWPs.

Agreements:

Proposal1 (modified): Regarding the format of the DL MAC CE for PPW activation/deactivation, confirm on the following:

 Serving cell index is needed in the MAC CE

 The length of the PPW id is 2 bit

Proposal2: Adopt the TP in R2-2204996 for the MAC CE for MG activation/deactivation command/request but remove the wording "has a fixed 8-bit size". (10/11)

Proposal3 (modified): Detailed conditions for cancelling triggered MAC CE from the upper layer does not need to be captured in normative text in the MAC spec. Indicate in the cancellation procedure that MAC follows requests from upper layer.

R2-2206248 Correction to MAC spec for positioning enhancement Huawei, HiSilicon CR Rel-17 38.321 17.0.0 1298 - F NR\_pos\_enh-Core

* [Post118-e][604][POS] 38.321 positioning CR (Huawei)

Scope: Update and check the CR in R2-2206248

Intended outcome: Agreed CR

Deadline: Short (for RP)

Withdrawn/Not available

R2-2204687 Reply LS on frequency information of SRS for positioning resources (R1-2202847; contact: CATT) CATT LS out Rel-17 To:RAN1 Cc:RAN3 Late

=> Withdrawn

### 6.11.2 Essential corrections

No documents should be submitted to 6.11.2. Please submit to 6.11.2.x.

#### 6.11.2.1 Latency enhancements

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

[R2-2206147](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206147%20Summary%20of%20AI%206.11.2.1%20on%20latency.docx) Summary of AI 6.11.2.1 on latency ZTE Corporation discussion Rel-17 NR\_pos\_enh-Core

* Revised in R2-2206340

[R2-2206340](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206340%20Summary%20of%20AI%206.11.2.1%20on%20latency.docx) Summary of AI 6.11.2.1 on latency ZTE, Sanechips discussion Rel-17 NR\_pos\_enh-Core

ASN.1 issues:

Proposal 14: Support to delete the area-id-r17 in current LPP spec. FFS whether the associated cell list is valid.

Discussion:

Qualcomm think the deletion is OK but are not sure what the FFS means. They also wonder in P16, what we would broadcast if we delete the area ID. They understand the area ID is just an index into the list of cells and can be handled by implementation without signalling it.

Huawei understand that we do not need the area ID but we do need the cell list; Apple agree. Huawei think there are some issues in the CR for P16, including handling of the posSIB content in the RRC CR when it should be in LPP.

Ericsson understand that the network should be allowed to broadcast cell lists for multiple areas and some form of ID is needed for this.

Intel wonder if the intention is to use the cell list to let the UE know if the preconfigured AD should be stored, or to indicate “if you are in this area then use this AD”. They note that we have a requirement for the UE to be able to obtain SFN from some cell in the AD for DL-TDOA, and there should now be a similar requirement that the UE can only use the preconfigured AD if it can acquire the SFN from some cell in the validity list. So they wonder if the serving cell must always be included in the list to guarantee availability of the SFN.

Huawei understand that when the UE moves to a certain area, if it has stored AD with associated cell IDs valid in that area, it will check if the current cell is in the associated cell list; if so, it can use the AD. So they think the SFN issue mentioned by Intel is not related to the preconfigured AD.

OPPO think we should keep the cell list.

Apple have the same understanding as Huawei about how the preconfigured AD work.

Fraunhofer think the area ID could be used to request AD for a specific area, and the cell list could be optional with the area ID used as a shorthand if the cell list has already been provided.

Nokia think tracking the cell lists without an explicit ID may be an implementation problem on the network side.

Fraunhofer think the area ID can be OPTIONAL but do not see value in deleting it. Chair asks what the use case is if the UE cannot request an area; Fraunhofer think that if AD are broadcasted for multiple areas (i.e. P16), the ID can distinguish instances, and it can avoid repeating a cell list.

Nokia think the deletion is not due to a critical problem but is more of a signalling optimisation.

Huawei do not understand Nokia’s concern with the management of AD on the network side. Intel agree with Huawei, and think we agreed last meeting to the list-based approach and the area ID is superfluous.

Proposal 15: Support UE to request pre-configured assistance data associated with area validity in each positioning method AD request.

Discussion:

Chair wonders if this is really a correction. Qualcomm indicate that if the network provides AD for multiple areas, the UE eventually has to request new AD, and it can only use the legacy format. On Fraunhofer’s concern about the area ID, Qualcomm are not sure how the UE would know which area to request for.

Ericsson support the proposal and think it can be LMF implementation to select the area.

Intel are not against the proposal but would like to understand how/if the UE determines which area it wants AD for, and how the LMF can determine if it should trust the UE decision.

Nokia view this proposal as new functionality; they think if area-based AD are available at the UE for the current cell, the UE will use that AD, and otherwise it issues the legacy request.

Apple think Ericsson’s description is OK, but the proposal as written with the inclusion of an area ID would be new functionality.

Huawei agree with Qualcomm about the symmetry between request and response in LPP, but would like to understand the relation of the request with the current PCell; they understand that the current PCell is already a kind of area indicator that the network can use to guide the selection of AD. So they think a boolean value would be sufficient.

vivo see this as an optimisation and think the LMF can provide the preconfiguration to the UE based on capability without the need for an explicit request.

ZTE agree with Huawei’s comment that a boolean value would be sufficient.

Intel agree with Nokia and think we should not introduce new functionality.

Qualcomm think there is some confusion: The input contributions included a proposal with an included number of areas (similar to the proposal for a boolean indication), and also a proposal that the UE requests a specific area. For the latter, they do not see how the UE knows which area ID to request. They do not see this as an optimisation because we always have request/provide symmetry.

Ericsson can accept the boolean indicator. OPPO and Apple think boolean is enough.

CATT doubt if the UE can get the area ID for the request.

Proposal 16: Support to introduce a new posSIB to include the area validity of pre-configured AD.

Discussion:

Ericsson think this would be aligned with how LPP is designed and the new AD need to be reflected in a posSIB so it can be provided via broadcast.

Nokia think the proposal makes some sense but was not brought during the main part of the WI, and they are hesitant to add last-minute functionality.

Huawei think another solution would be to add the cell list to the DL-PRS assistance data, which is already broadcasted.

Qualcomm think the proposal from Huawei to include the area ID in the DL-PRS AD is not necessary because it suggests that each cell broadcasts AD, which would then be available to the UE anyhow from reading the broadcast. They also see impact to RRC and NRPPa that would require further changes.

Ericsson think the change is minor compared to the number of SIBs already added.

CATT think the proposal is not necessary.

Fraunhofer would prefer to have the broadcast available.

On Qualcomm’s concern, Ericsson do not see that the broadcast AD can provide area-associated AD.

Ericsson think the UE can avoid the latency/power cost of reading the posSIB. Fraunhofer and vivo have a similar understanding.

Agreements:

Proposal 14 (modified): Deletion of the area-id-r17 in current LPP spec to be checked in LPP CR discussion (not related to broadcast).

Proposal 15 (modified): Support UE to request pre-configured assistance data associated with area validity in each positioning method AD request. The indicator is a boolean flag but not an explicit area ID.

Important procedure issues:

Measurement gaps in MAC:

Proposal 1: RAN2 to agree the change in 38.321 draft CR R2-2204700 and R2-2205656 for pre-configured MG MAC CE activation/deactivation request/command design.

Proposal 8: RAN2 to agree the change in draft CR R2-2205309 for capturing the cancellation procedure of UL MAC CE for pre-configured MG in 38.321.

* P1 and P8 to be checked in MAC CR discussion [AT118-e][625].

Measurement gaps in RRC:

Proposal 4: RAN2 to agree that UE considers the activated preconfigured measurement gaps to be in deactivated state when HO happens, and takes R2-2205048 TP of 38.331, section 5.3.5.5.2 as baseline.

Proposal 5: RAN2 to discuss that after a positoning measurment gap is deactivated due to handover, RRC triggers the lower layer to send another request for MG activation. If agreed, adopt CR of R2-2205048, section 5.5.6.2 part as baseline.

Proposal 6: For pre-configured MG, the UL MAC CE deactivation procedure triggered by upper layer should be captured in 38.331, specifically in:

Option 1: section 5.5.6.2, i.e., the initiation of Location Measurement Indication procedure.

FFS: whether R2-2205000 can be supported

Option 2: a new section, e.g, section 5.5.2.x parallel to the measurement gap configuration procedure.

FFS: whether corresponding changes in R2-2205310 can be supported

Proposal 7: For pre-configured MG, the UL MAC CE cancellation procedure triggered by upper layer should be captured in 38.331, specifically in:

Option 1: section 5.5.6.2, i.e., the initiation of Location Measurement Indication procedure.

FFS: whether R2-2204703 can be supported

Option 2: a new section, e.g, section 5.5.2.x parallel to the measurement gap configuration procedure.

FFS: whether corresponding changes in R2-2205310 can be supported

PPW:

Proposal 10: RAN2 to agree the change in 38.321 draft CR R2-2204742 to delete ‘consists of a single octet’, clarify the UE behaviour when PPW is activated should follow the clause 5.24, and modify the numEntry field. Huawei understand the proposal is correct because there can be 4 PPWs activated at the same time; Qualcomm understand that the MAC CE can only activate/deactivate one at a time.

* To be checked in the MAC discussion (confirm consistency with RAN1 parameter list).

Discussion:

Qualcomm think the PPW is not fully aligned with RAN1 and the single octet size may be correct. In general they see mismatches between RAN1/RRC/MAC.

Proposal 11: Support to adopt the same procedure for pre-configured PPW and pre-configured MG. The RAN2 changes including:

• Introduce a new UL MAC CE for PPW activation/deactivation request;

• Add UE capabilities for UL/DL MAC-CE based PPW activation.

The RAN3 changes including:

• Include the UE DL-PRS processing capability outside measurement gaps in the NRPPa MEASUREMENT PRECONFIGURATION REQUIRED message.

• Include information on what has been preconfigured in the target device (MGs and/or PPW) in the NRPPa MEASUREMENT PRECONFIGURATION CONFIRM message.

• Enable the NRPPa MEASUREMENT ACTIVATION message to activate/deactivate preconfigured PRS processing windows.

If agreed, adopt TPs of 38.305, 38.321, 38.331, 37.355 in R2-2205764 as baseline. Send LS to RAN1 and RAN3 for confirmation.

Discussion:

Ericsson think RAN1 did not ask for this. Qualcomm understand that RAN2 were asked to design the procedure and we need this functionality.

Proposal 12: Regarding UE capability of PPW, UE only needs to report whether PPW is supported or not to LMF.

* Any related concern can be raised in the capability discussion [AT118-e][627].

Discussion:

Qualcomm understand that there are additional PPW capabilities in the RAN1 agreements (both in RRC and LPP).

ZTE think P12 can be discussed together with P11. Ericsson agree. Intel think we should follow the RAN1 feature list.

Other optimization/stage-2 changes:

Proposal 2: Support to use a RRC signalling to indicate UE which protocol layer is used for transmitting measurement gap request (RRC or MAC).

Proposal 3: RAN2 to discuss UL MAC CE for pre-configured measurement gap has the provision to include BSR.

Proposal 9: RAN2 to agree the changes in 38.305 draft CR R2-2205810 on pre-configured PPW and MG.

Proposal 13: Support UE to deactivate PPW via UL RRC message, i.e., in UEPositioningAssistanceInfo.

* [AT118-e][635][POS] Cross-group alignment for PPW (Qualcomm)

Scope: Check P11 from R2-2206147 and determine whether to align the PPW/MG procedures.

Intended outcome: Report to Wednesday CB session in R2-2206256

Deadline: Tuesday 2022-05-17 1800 UTC

[R2-2206256](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206256_(%5bAT118-e%5d%5b635%5d%5bPOS%5d_PPW_Issues)_Summary.docx) [AT118-e][635][POS] Cross-group alignment for PPW (Qualcomm) Qualcomm Incorporated discussion Rel-17 NR\_pos\_enh-Core

* Noted (email discussion [AT118-e][635])
* [AT118-e][634][POS] Measurement gap RRC aspects (Huawei)

Scope: Conclude on remaining RRC issues on measurement gaps, taking into account P4-P7 in the summary R2-2206340 as well as the related tdocs R2-2204543, R2-2205267, R2-2205291, and R2-2205726. Related MAC issues can be considered in the MAC CR discussion.

Intended outcome: Report to Monday week 2 session in R2-2206255

Deadline: Friday 2022-05-13 1800 UTC

[R2-2206255](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206255%20Email%20discussion%20for%20Positioning%20Measurment%20Gap_v13_final.doc) Email discussion for Positioning Measurement Gap Huawei, HiSilicon discussion Rel-17 NR\_pos\_enh-Core

Proposals potentially easy-to-agree:

Proposal1: If a UE wants to perform PRS measurement and a certain pre-configured measurement gap (not a pre-configured positioning measurement gap) is not always activated, this measurement gap is considered as “insufficient”. (9/10)

Proposal2: a NOTE can be added in 38.331 5.5.6.2 for the definition of “sufficient” preconfigured measurement gap and reuse the previous trigger for location measurement indication. (12/12)

NOTE 2: When indication is received from upper layers for performing location measurement and there is pre-configured measurement gap configured (not preconfigured positioning measurement gap), the UE considers this pre-configured measurement gap to be not sufficient if the measurement gap is not considered to be always activated according to clause 9.1.7.2 of TS 38.133 [14].

Proposal3: After LocationMeasurmentIndiation is transmitted, the UE always follow the network configuration and it is up to the network to configure proper measurement gap for PRS measurement. No spec change is needed for this. (12/12)

Proposal4: UE only activates the pre-configured measurement that that are suitable for PRS measurement. (12/12)

Discussion:

ZTE understand that RAN4 have not captured a detailed definition of what is sufficient.

CATT think we could postpone P4 and wait for RAN4.

Huawei think an LS is needed. Intel agree with ZTE and CATT and think we could wait for RAN4. vivo agree; also Ericsson, OPPO.

ZTE understand that P3 should have a precondition “after LMI used for requesting a new MG is transmitted”. Huawei agree that this can be added to P3.

Xiaomi wonder if the UE can avoid sending LMI in case the pre-configured measurement gap is always activated; they understand that RAN4 only specify how the UE determines if the gap is activated or deactivated. Huawei understand this is one criterion for the gap to be “sufficient”. Xiaomi are not sure how the UE determines this. ZTE understand that if the network does not configure all the BWPs to have the preconfigured MG activated, this is considered not “always activated”; if all the BWPs have an activated MG, then the gap is always activated.

CATT indicate that the UE may still consider an always activated MG to be not sufficient (e.g. gap is not good for DL-PRS measurements). OPPO have the same understanding.

Huawei think the issue on P5 is separate and most companies felt an LS to RAN4 was needed.

Intel understand that P4 has no ASN.1 impact and we can wait for clarification from RAN4, and on P1-P3 they also see some divergence of understanding. So they think we could check with RAN4 on all points and conclude after they reply. Huawei understand it is already in RAN4 specs; vivo agree.

ZTE are OK with P1 but think “always activated” needs clarification.

Agreements:

Proposal1: If a UE wants to perform PRS measurement and a certain pre-configured measurement gap (not a pre-configured positioning measurement gap) is not always activated, this measurement gap is considered as “insufficient”. (9/10)

Proposal2: a NOTE can be added in 38.331 5.5.6.2 for the definition of “sufficient” preconfigured measurement gap and reuse the previous trigger for location measurement indication. (12/12)

NOTE 2: When indication is received from upper layers for performing location measurement and there is pre-configured measurement gap configured (not preconfigured positioning measurement gap), the UE considers this pre-configured measurement gap to be not sufficient if the measurement gap is not considered to be always activated according to clause 9.1.7.2 of TS 38.133 [14].

Proposal3 (modified): After LocationMeasurementIndication to request a new measurement gap is transmitted, the UE always follow the network configuration and it is up to the network to configure proper measurement gap for PRS measurement. No spec change is needed for this. (12/12)

Proposal5: R2 should send a LS to R4 to confirm: (9/12)

 Whether the config in LocationMeasurementIndication can be mapped to a certain pre-configured measurement gap

 if so, whether the UE should only activate the pre-configured measurement gap indicated by LocationMeasurementIndication

Discussion:

Ericsson think RAN4 are already discussing this and will have further input.

Intel think we should ask if the current contents of LMI are sufficient.

Huawei think we need to be clear about what we want to ask and the UE behaviour needs to be clear; they think the potential changes to the LMI are encompassed in the first question.

Proposal7: It is up to the network implementation whether the pre-configured measurement gap is activated/deactivated during handover. No spec change is needed (10/12)

Proposal8: After a positioning measurement gap is deactivated due to handover, RRC does not need to triggers the lower layer to send another request for MG activation. Hence, no need to adopt CR of R2-2205048, section 5.5.6.2. (10/12)

Discussion:

Samsung think on P7, the current RRC CR lets the target gNB modify or release the configuration via RRC signalling; they want to confirm that this means the target gNB in HO always needs to send a preconfigured MG configuration, even when there is no need to modify or release.

Huawei understand that the target gNB determines whether the MG configuration should be activated, and this can be left to gNB implementation as in the proposals.

CATT think HO has not been discussed in the positioning context, and they do not want to specify anything for it.

Ericsson think the target gNB may not support the pre-configured MG. They do not see a need to change the spec; the target gNB will configure what it supports and wants to configure based on the legacy framework.

Proposal9: The deactivation request from RRC to MAC should be removed from the RRC spec per TP above when (12/12)

 if a request from upper layers to transmit either a new preConfigGapID or to modify the current measGapConfig is received; or

 if a request from upper layers indicate that the current gap is not needed

Proposal10: For triggering the UL MAC CE for MG activation/deactivation request: Added in the paragraph in 5.5.6.2 for triggering LocationMeasurementIndication such that the UE can choose between the RRC message and UL MAC CE as in R2-2205000. (11/12)

Agreements:

Proposal7: It is up to the network implementation whether the pre-configured measurement gap is activated/deactivated during handover. No spec change is needed (10/12)

Proposal8: After a positioning measurement gap is deactivated due to handover, RRC does not need to triggers the lower layer to send another request for MG activation. Hence, no need to adopt CR of R2-2205048, section 5.5.6.2. (10/12)

Proposal9: The deactivation request from RRC to MAC should be removed from the RRC spec per TP above when (12/12)

 if a request from upper layers to transmit either a new preConfigGapID or to modify the current measGapConfig is received; or

 if a request from upper layers indicate that the current gap is not needed

Proposal10: For triggering the UL MAC CE for MG activation/deactivation request: Added in the paragraph in 5.5.6.2 for triggering LocationMeasurementIndication such that the UE can choose between the RRC message and UL MAC CE as in R2-2205000. (11/12)

Proposals need further discussion

Proposal6: Wait for R4 conclusion for whether the pre-configured measurement gap should be activated/deactivated, only after the LocationMeasurmentIndication is successfully transmitted. FFS how is it considered to be “successfully transmitted” (5/12)

Discussion:

Huawei do not understand what we would be waiting for from RAN4 and think this is in RAN2 scope. They think the other option is to consider the MG to be activated as soon as the message is sent, even if it is not “successful”. From RRC perspective they see some difficulty in defining “successfully transmitted”.

ZTE think for the rule-based mechanism, RAN4 have included sending the LMI as a precondition, and we would be waiting for confirmation that the condition is still there and whether the criterion is transmission or success. So they suggest waiting for RAN4.

vivo understand that RAN4 are discussing whether to revert this precondition anyway.

CATT think the FFS is not needed, because RLC AM provides a mechanism for detecting whether transmission is successful; if it fails, the radio link will be re-established. So they think the only issue is whether to revert the precondition, which they understand is discussed in RAN4.

OPPO agree with CATT and think we can delete “successfully”.

Proposal11: Acknowledge that to cancel a UL MAC CE for MG activation/deactivation that has not been transmitted is a corner case and don’t capture it in RRC/MAC. (6/11)

Discussion:

Samsung think we already have an agreement on the transmission conditions for the MAC CE, and there is no reason to revert it; we should rather discuss how to capture the agreement, which they understand was made from MAC perspective, and it is already under discussion in the MAC CR. ZTE have the same understanding.

CATT think we could discuss this case next meeting and do not support the “don’t capture” conclusion.

Chair suggests continuing to discuss in the MAC CR for now.

* [AT118-e][642][POS] LS to RAN4 on LocationMeasurementIndication contents and measurement gap parameters (Huawei)

Scope: Draft an LS to RAN4 to confirm:

 Whether the config in LocationMeasurementIndication can be mapped to a certain pre-configured measurement gap

 if so, whether the UE should only activate the pre-configured measurement gap indicated by LocationMeasurementIndication

 if anything needs to be added to the current contents of the LocationMeasurementIndication

Intended outcome: Approved LS (without CB if possible) in R2-2206388

Deadline: Thursday 2022-05-19 0400 UTC

[R2-2206388](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206388%20LS%20on%20LMI%20contents%20and%20pre-configured%20MG%20parameters.docx) LS on LocationMeasurementIndication contents and measurement gap parameters RAN2 LS out Rel-17 To:RAN4

* Approved (email discussion [AT118-e][642])

The following documents will not be individually treated

[R2-2204699](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204699%20Discussion%20on%20the%20positioning%20MG%20activation%20deactivation%20MAC%20CE.docx) Discussion on the positioning MG activation deactivation MAC CE CATT discussion Rel-17 NR\_pos\_enh-Core

[R2-2204700](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.321_CR1229_(Rel-17)_R2-2204700.docx) Correction on the positioning MG activation deactivation MAC CE CATT CR Rel-17 38.321 17.0.0 1229 - F NR\_pos\_enh-Core

[R2-2204701](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204701%20Discussion%20on%20the%20cancel%20conditions%20of%20the%20triggered%20UL%20positioning%20MG%20activation%20deactivation%20MAC%20CE.docx) Discussion on the cancel conditions of the triggered UL positioning MG activation/deactivation MAC CE CATT discussion Rel-17 NR\_pos\_enh-Core

[R2-2204702](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.321_CR1230_(Rel-17)_R2-2204702.docx) Correction on the cancel conditions of the triggered UL positioning MG activation/deactivation MAC CE CATT CR Rel-17 38.321 17.0.0 1230 - F NR\_pos\_enh-Core

[R2-2204703](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.331_CR2996_(Rel-17)_R2-2204703.docx) Correction on the cancel conditions of the triggered UL positioning MG activation/deactivation MAC CE CATT CR Rel-17 38.331 17.0.0 2996 - F NR\_pos\_enh-Core

[R2-2204742](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.321_CR1228_(Rel-17)_R2-2204742.docx) Corrections on the TS38.321 CATT CR Rel-17 38.321 17.0.0 1228 - F NR\_pos\_enh-Core

[R2-2204996](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204996%20Corrections%20on%20MAC%20CE%20for%20Preconfigured%20Positioning%20MG.docx) Corrections on MAC CE for Positioning Measurement Gap Huawei, HiSilicon CR Rel-17 38.321 17.0.0 1244 - F NR\_pos\_enh-Core

[R2-2205309](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205309%20Correction%20on%20pre-configured%20MG%20procedure%20in%2038.321.docx) Correction on pre-configured MG procedure in 38.321 ZTE, Sanechips CR Rel-17 38.321 17.0.0 1271 - F NR\_pos\_enh-Core

[R2-2205311](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205311%20Discussion%20on%20the%20pre-configured%20MG%20signaling.docx) Discussion on the pre-configured MG signaling ZTE, Sanechips discussion Rel-17 NR\_pos\_enh-Core

[R2-2205579](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205579%20Discussion%20on%20the%20handling%20of%20pre-MG%20for%20positioning.docx) Discussion on the handling of pre-MG for positioning vivo discussion Rel-17 NR\_pos\_enh-Core

[R2-2205656](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38321_CR1278_(Rel-17)_R2-2205656-Pos-meas-Gap-CE-v0.docx) Definition of positioning measurement gap activation/deactivation MAC CE Apple CR Rel-17 38.321 17.0.0 1278 - F NR\_pos\_enh-Core

[R2-2205764](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205764_(Issues%20with%20PPW).docx) Issues with PRS Processing Window Procedures Qualcomm Incorporated discussion

[R2-2205766](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205766_(Area%20ID).docx) Assistance Data Request for Multiple Area IDs Qualcomm Incorporated discussion

[R2-2205804](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205804%20areaID.docx) Text Proposal to address UE request of Area Info and Broadcast of Area Ericsson, Fraunhofer IIS, Fraunhofer HHI, Lenovo, Motorola Mobility discussion Rel-17

* Revised in R2-2206331

[R2-2206331](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206331_areaIDPosSIB.docx) Text Proposal to address UE request of Area Info and Broadcast of Area Ericsson, Fraunhofer IIS, Fraunhofer HHI, Lenovo, Motorola Mobility discussion Rel-17

[R2-2205808](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205808%20activate%20PPW.docx) Correction to activate pre-configured PPW Signaling Ericsson CR Rel-17 38.305 17.0.0 0097 - F NR\_pos\_enh-Core

[R2-2205809](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205809%20Correction%20MACCE.docx) Correction of PPW Activation/Deactivation Command MAC CE size description Ericsson CR Rel-17 38.321 17.0.0 1285 - F NR\_pos\_enh-Core

[R2-2205810](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205810%20Clarification%20on%20PPW%20and%20MG%20.docx) Clarification on PPW and MG configuration to the same UE and miscellaneous corrections Ericsson CR Rel-17 38.305 17.0.0 0098 - F NR\_pos\_enh-Core

[R2-2205812](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205812%20UL%20MAC%20CE%20Design.docx) UL MAC CE for preconfigured MG Ericsson discussion Rel-17

[R2-2205814](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205814%20PPW%20ConfigRelease.docx) On PPW Configuration Release assistance info Ericsson discussion Rel-17

Withdrawn/Not available

R2-2204704 Corrections on the TS38.305 CATT CR Rel-17 38.305 17.0.0 0090 - F NR\_pos\_enh-Core Late

* Withdrawn

#### 6.11.2.2 RRC\_INACTIVE

Methods, measurements, signalling and procedures to support positioning for UEs in RRC\_ INACTIVE state, for UE-based and UE-assisted positioning solutions. UL and DL+UL NR positioning methods and gNB positioning measurements for UEs in RRC\_INACTIVE are treated at lower priority.

Chair’s note: Companies’ attention is drawn to email discussion [AT118-e][501], where the discussion of document R2-2205824 for RRC RIL I512 is handled. The proposal is to change the ASN.1 structure around the positioning-related field srs-PosRRC-InactiveConfig-r17. It is assumed that the conclusion will be captured by the positioning RRC rapporteur.

Summary document

[R2-2206052](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206052%20Summary%20of%20AI%206.11.2.2%20on%20RRC_INACTIVE.docx) Summary of AI 6.11.2.2 on RRC\_INACTIVE vivo discussion Rel-17 NR\_pos\_enh-Core

Easy agreement

Proposal 2a: Agree on R2-2205012 as a baseline to remove the detailed pathloss derivation and beam consolidation procedure, and only add the reference to 38.133 and 38.331.

Proposal 3: Agree on R2-2205368 to update the maintenance of the uplink time alignment procedure, with revised punctuation.

Proposal 4a: Agree on R2-2205580 to remove the description of the UE behavior when performing connection resumption in a different cell than the cell where srs-PosRRC-InactiveConfig was configured.

Proposal 4b: Agree on R2-2205580 to add the description of the UE behavior upon cell reselection, i.e., to instruct MAC to stop the srs-TimeAlignmentTimer.

Discussion:

Xiaomi have a concern on P4a; they think it implies that the UE will not release the SRS configuration, and they think we should explicitly specify the UE behaviour for the case of resuming in the same cell.

Intel understand that the intention is that the UE should delete the SRS configuration on resume, but not on reselect. So they understand that we should remove the configuration deletion from the reselection case but not from the resume procedure.

Huawei think P4a is reasonable, because when the UE reselects a cell, it cannot do positioning with the previous SRS configuration, and when it resumes with the other cell it should discard the procedure.

Agreements:

Proposal 2a (modified): Agree on the changes in R2-2205012 as a baseline to remove the detailed pathloss derivation and beam consolidation procedure, and only add the reference to 38.133 and 38.331.

Proposal 3 (modified): Agree on the changes R2-2205368 to update the maintenance of the uplink time alignment procedure, with revised punctuation.

Proposal 4b (modified): Agree on the changes in R2-2205580 to add the description of the UE behavior upon cell reselection, i.e., to instruct MAC to stop the srs-TimeAlignmentTimer.

Changes to be captured by rapporteurs.

For further discussion

[Chair’s note: P2b is cross-WI with SDT. If the proposal is agreeable from positioning point of view, changes are to be handled by the RRC rapporteur, subject to companies checking to confirm compatibility with SDT. Any concern should be raised in email discussion [AT118-e][623].]

Proposal 1: Discuss whether to follow the SDT mechanism to keep the positioning SRS configuration for RRC\_INACTIVE when the inactivePosSRS-TimeAlignmentTimer expires to support delta configuration. If yes, agree on R2-2204693.

Proposal 2b: Discuss whether to add a new clause for pathloss derivation for posSRS transmission and CG-SDT in RRC\_INACTIVE to RRC spec. If yes, agree on R2-2205013 as a baseline.

Proposal 4c: Discuss whether to move the procedure of posSRS handling upon cell reselection in section 5.7.15 to section 5.3.13.6 and remove section 5.7.15. If yes, agree on R2-2204999 as a baseline.

Note: Proposal 4c shall be skipped if it is handled by the RRC rapporteur.

Proposal 5a: If RAN2 would reply to the LS to SA2 on positioning in RRC\_INACTIVE, add the suggestion of deleting the pre-condition “when the UE is in RRC INACTIVE state”.

Proposal 5b: Discuss whether to add a new nr-UL-RequestAssistanceData IE in the RequestAssistanceData to support UE initiated SRS configuration request for UL only positioning.

Discussion:

Ericsson confirm that P4c is handled in the RRC CR.

* [AT118-e][636][POS] Proposals for discussion from RRC\_INACTIVE summary (vivo)

Scope: Discuss P1/P2b/P4a/P5a/P5b from R2-2206052 and attempt to conclude. P2b should be checked for compatibility with SDT.

Intended outcome: Report to Monday week 2 session in R2-2206257

Deadline: Friday 2022-05-13 1800 UTC

[R2-2206257](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206257%20Report%20of%20%5bAT118-e%5d%5b636%5d%5bPOS%5d%20RRC_INACTIVE.docx) Report of [AT118-e][636][POS] Proposals for discussion from RRC\_INACTIVE summary vivo discussion Rel-17 NR\_pos\_enh-Core

Proposal 1 (7/11): The UE shall release the SRSp configuration for RRC\_INACTIVE when the inactivePosSRS-TimeAlignmentTimer expires. (Maintain the existing description in MAC and RRC spec)

Proposal 2 (8/10): The UE shall release the SRSp configuration for RRC\_INACTIVE upon cell re-selection. Correspondingly, remove the description of the UE behavior when performing connection resumption in a different cell than the cell where srs-PosRRC-InactiveConfig was configured in RRC spec.

Discussion:

CATT do not support P1 and P2, because they see delta signalling as useful and releasing the configuration would create an inconsistency between the UE and the network, where the gNB will store the configuration but the UE will discard it.

Huawei think the network side also maintains the TAT and will release the configuration at the same time, so there is no misalignment. Regarding delta configuration, they think we have not agreed to support this for SRS and it is better not to add it now.

Ericsson also understand that the network will stay in sync, and if the UE can transmit SRS after the TAT expires it raises RAN1 issues.

Intel think the benefit of P2 is that if the UE moves back to the original cell, it can use the original configuration, but they agree with Huawei that this is not something we agreed to support, so they can accept P1/P2.

CATT understand that the current ASN.1 has a ToAddMod for the SRS configuration, which allows delta configuration. Huawei agree this is there from the signalling pov, but we do not have an agreement to support it functionally.

Huawei understand that if the UE moves, the SRS configuration needs to change constantly, so the gain from delta signalling is marginal.

Chair understands that the delta signalling is usable while the SRS configuration is valid. vivo and Ericsson agree.

Proposal 3 (9/9): Add a new field description in SIB2 and a new clause for pathloss derivation for TA validation of SRSp transmission and CG-SDT in RRC\_INACTIVE.

Proposal 4 (9/10): No need to send a reply LS to SA2 on removing the phrase “when the UE is in RRC\_INACTIVE”.

Proposal 5 (8/11): Not to support UE initiated SRS configuration request for UL only positioning in LPP message in R17.

Discussion:

Huawei think if we agree on P3, there is SDT impact, because the new clause would be used for SDT as well.

Ericsson understood the point of P3 was to have a common section for positioning and SDT.

Agreements:

Proposal 1 (7/11): The UE shall release the SRSp configuration for RRC\_INACTIVE when the inactivePosSRS-TimeAlignmentTimer expires. (Maintain the existing description in MAC and RRC spec)

Proposal 2 (8/10): The UE shall release the SRSp configuration for RRC\_INACTIVE upon cell re-selection. Correspondingly, remove the description of the UE behavior when performing connection resumption in a different cell than the cell where srs-PosRRC-InactiveConfig was configured in RRC spec.

Proposal 3 (modified): Add a new field description in SIB2 and a new clause for pathloss derivation for TA validation of SRSp transmission. No conclusion now on whether this clause can also be used for CG-SDT in RRC\_INACTIVE.

Proposal 4 (9/10): No need to send a reply LS to SA2 on removing the phrase “when the UE is in RRC\_INACTIVE”.

Proposal 5 (8/11): Not to support UE initiated SRS configuration request for UL only positioning in LPP message in R17.

[R2-2206384](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206384_SDT_I512_PositionConfig_v01.docx) [I512] [I010] SRS Positioning configuration provided for SDT Intel Corporation, Ericsson discussion Rel-17 NR\_pos\_enh-Core

Proposal 1. RAN2 assumes that DU can set the configuration associated to SRS-PosRRC-InactiveConfig-r17 and should be provided in a container as part of the corresponding ASN.1.

Proposal 2. If Proposal 1 is agreed, to inform RAN3 via an LS about this agreement highlighting the following:

Proposal 2.1. RAN3 is asked to define a new F1-AP container to convey the container SRS-PosRRC-InactiveConfig-r17 from DU to CU.

Proposal 2.2. RAN3 is requested to confirm that the configuration of the new SDT related parameters defined as part of RRCRelease message can be set by DU (i.e., SRS-PosRRC-InactiveConfig-r17 and SDT-MAC-PHY-CG-Config). This includes for example, srs-TimeAlignmentTimer-r17, inactivePosSRS-RSRP-changeThresh-r17, srs-NrofSS-BlocksToAverage-r17, inactivePosSRS-AbsThreshSS-BlocksConsolidation-r17, cg-SDT-TimeAlignmentTimer, cg-SDT-RSRP-ThresholdSSB-r17 and cg-SDT-RSRP-ChangeThreshold-r17 .

Proposal 3. If Proposal 1 is agreed, to adopt the TP available in section 4.1 of Annex.

Discussion:

Intel understand that RAN3 are having a parallel discussion and think we may not need an LS; companies can coordinate internally.

Nokia would rather make sure RAN3 are aligned.

Agreement:

RAN2 assumes that DU can set the configuration associated to SRS-PosRRC-InactiveConfig-r17 and should be provided in a container as part of the corresponding ASN.1. Details to be confirmed in the RRC CR discussion, with the TP from section 4.1 of the Annex of R2-2206384 as a baseline.

* [AT118-e][641][POS] LS to RAN3 on container for SRS configuration for positioning (Intel)

Scope: Draft an LS to notify RAN3 of the RAN2 agreement on containerising the configuration associated with SRS-PosRRC-InactiveConfig-r17.

Intended outcome: Approved LS (without CB if possible) in R2-2206387

Deadline: Thursday 2022-05-19 0400 UTC

[R2-2206387](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206387%20%20Draft%20LS%20to%20RAN3%20on%20SRS%20configuration%20container%20v01.docx) Draft LS to RAN3 on container for SRS configuration for positioning Intel Corporation LS out Rel-17 To:RAN3

* Approved as R2-2206678 (email discussion [AT118-e][641])

The following documents will not be individually treated

[R2-2204691](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204691%20Further%20consideration%20on%20Periodic%20and%20Triggered%205GC-MT-LR.docx) Further consideration on Periodic and Triggered 5GC-MT-LR Procedure in RRC INACTIVE state CATT discussion

[R2-2204692](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204692%20%5bDraft%5d%20Reply%20LS%20on%20Positioning%20in%20RRC_INACTIVE.DOCX) [Draft] Rely LS on Positioning in RRC\_INACTIVE CATT LS out Rel-17 To:SA2 Cc:RAN3

[R2-2204693](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204693%20Consideration%20on%20positioning%20SRS%20configuration.docx) Consideration on positioning SRS configuration for RRC\_INACTIVE CATT discussion

[R2-2205012](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205012%20Correction%20to%20beam%20consolidation%20for%20posSRS%20in%20RRC_INACTIVE.docx) Correction to beam consolidation for posSRS in RRC\_INACTIVE Huawei, HiSilicon CR Rel-17 38.321 17.0.0 1245 - F NR\_pos\_enh-Core

[R2-2205013](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205013%20%5bH572%5d%20Correction%20for%20beam%20consolidation%20for%20TA%20validation%20in%20RRC_INACTIVE.docx) [H572] Correction for beam consolidation for TA validation in RRC\_INACTIVE Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3030 - F NR\_pos\_enh-Core

[R2-2205368](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205368%20Corrections%20on%20Maintenance%20of%20Uplink%20Time%20Alignment.doc) Corrections on Maintenance of Uplink Time Alignment Xiaomi discussion

[R2-2205580](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205580%20Discussion%20on%20remaining%20issue%20about%20positioning%20in%20RRC_INACTIVE.docx) Discussion on the remaining issue about positioning in RRC\_INACTIVE vivo discussion Rel-17 NR\_pos\_enh-Core

#### 6.11.2.3 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

[R2-2206058](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206058%20%5bPre118-e%5d%5b605%5d%5bPOS%5d%20Summary%20of%20AI%206.11.2.3%20on%20on-demand%20PRS%20(Huawei)_final.docx) [Pre118-e][605][POS] Summary of AI 6.11.2.3 on on-demand PRS (Huawei) Huawei, HiSilicon discussion Rel-17 NR\_pos\_enh-Core

Proposal1: [H011] TRP configuration should also be provided in on-demand PRS configuration for index-based on-demand PRS request.

Discussion:

CATT prefer not to provide the TRP configuration, because the PRS configuration will be eventually provided to the UE in the response message along with the SSB information. They also think we could provide the whole configuration, as defined in Rel-16, to the UE directly.

Qualcomm do not fully understand the proposal: The TRP configuration includes positioning-method-dependent information, while the request is generic to the PRS assistance data.

Nokia agree with Qualcomm and do not see the justification for the change; they understand that what we provide now is the actual attributes of the PRS.

Huawei indicate that in the current response, the LMF can only provide an index to the PRS configuration, but the current PRS configuration is incomplete without the TRP configuration. With the proposal, the index can indicate to the UE the complete configuration.

vivo understand that P1 is related to Alt 2 in P3; if we agree on Alt 2, then P1 is not necessary. Huawei think there is no relation because the current configuration is incomplete.

Proposal2: [H057] For UE-initiated on-demand PRS request by explicit parameter, allow the network to provide a list of parameters to the UE that the UE should only request within the scope of the list, when such configuration is provided.

Proposal3: RAN2 to discuss and fix the mismatch issue of on-demand PRS between RAN2 and RAN3, the following alternatives can be considered:

- Alt 1: The pre-defined PRS configuration from LMF to UE includes a list of complete PRS configurations (maintaining the status quo), then the following changes are essential:

o In step 0, the possible On-Demand PRS configuration from gNB to LMF shall include a list of complete PRS configurations, each associated with a PRS configuration ID;

o In step 3, the PRS CONFIGURATION REQUEST from LMF to gNB shall include PRS configuration ID;

o In step 6, the on-demand PRS response from LMF to UE shall include the PRS configuration ID that is successfully activated.

- Alt 2: The pre-defined PRS configuration from LMF to UE only includes a list of allowed values for the parameters that can be requested by the UE.

[Stage 2, not freeze-critical]

Proposal4: Add a note for explaining measurements that is needed for the assistance of LMF/UE-initiated on-demand PRS request.

 NOTE 3: In case of LMF-initiated On-Demand PRS or UE-initiated On-Demand PRS, the LMF may obtain measurements from the UE using some existing positioning methods to assist step 3 e.g., the LMF may obtain SSB/CSI-RS RSRP measurements (NR-ECID) or DL-PRS RSRP measurements (DL-AoD).

[Already covered in LPP CR]

Proposal5: [C012] Remove the definition of the nr-On-Demand-DL-PRS-Configurations-Selected-IndexList-r17 within each DL and multi-RTT positioning method, and make it as a common IE, which is referred by DL and multi-RTT positioning method.

* [AT118-e][637][POS] Proposals for discussion on on-demand PRS (Huawei)

Scope: Discuss P1/P2/P3 from R2-2206058.

Intended outcome: Report to CB session in R2-2206258

Deadline: Tuesday 2022-05-17 1800 UTC

[R2-2206258](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206258%20Email%20discussion%20for%20on-demand%20PRS.doc) Email discussion for on-demand PRS Huawei, HiSilicon discussion Rel-17 NR\_pos\_enh-Core

Proposal1: For DL-PRS configuration provision by indexing to on-demand DL-PRS configuration, TRP-related information in on-demand PRS configuration does not need to be added. (10/12 supports it)

Proposal3: Leave the discussion to RAN3 on whether there is gap between

(a) the partial set of PRS parameters in TRP INFORMATION RESPONSE and the complete on-demand PRS configuration in ProvideAssistanceData; and

(b) the partial set of PRS parameters in PRS CONFIGURATION REQUEST and the complete PRS configuration in PRS CONFIGURATION RESPONSE.

FFS whether to inform this concern to RAN3. (5/12)

Proposal2: RAN2 to further discuss: For UE-initiated on-demand PRS request by explicit parameter, whether the network can provide a list of parameters to the UE that the UE should only request within the scope of the list when such configuration is provided. (5/10)

Discussion:

Huawei do not have a strong view on P1, but they think there are still issues that need to be clarified about how the UE knows the information. Qualcomm indicate that the response to the message is a Provide Assistance Data with the DL-PRS assistance data, which does not indicate the AD by index; so they understand that the LMF can map the AD to indices while making sure the PRS parameters are as requested by the UE.

Nokia are fine with P1, but think it should be clarified that this is for predefined DL-PRS configurations.

On P3, vivo think RAN2 should identify the issue and provide alternatives, but since RAN2 introduced the information in the predefined OD-PRS configuration, they think RAN2 should resolve it. Given P1, they think we cannot rely on RAN3 to solve this.

Intel understand that RAN2 information defined in LPP just reflected RAN1 decision, and RAN3 should have sufficient information. vivo think that some of the information was out of RAN1 scope to define and was introduced by RAN2.

Ericsson think the gNB can provide the LMF with all the needed parameters, and there is no problem except perhaps in RAN3 scope.

Apple and Nokia agree with Intel.

Huawei have some sympathy for vivo’s comment; in the TRP information exchange, when the gNB sends a response to the LMF, it selects only certain parameters, and with this selected parameter list the LMF may not be able to generate the whole OD-PRS configuration. They think it would be helpful for us to notify RAN3 and we could use the existing LS in discussion [641]. Intel does not see a strong connection to [641] and think it is not clear if companies agree there is a problem, without consensus to notify RAN3.

Qualcomm think even if we send an LS, RAN3 will not do anything in this meeting. They agree there may be a mismatch, but companies should raise it in RAN3 directly. Intel agree.

vivo wonder what we will do if the RAN2 spec is wrong. Chair understands we could take such contributions in future meetings.

On P2, Ericsson think if the network has not provided predefined configurations but wants to indicate what the network can change dynamically, providing parameters is useful.

Huawei think the system is not broken if we do not introduce this feature, because the UE can do a blind request. However, they think we also agreed that if the network provides a configuration, the UE should request within the configuration, so they see this proposal as following previous agreements.

OPPO think we should have a common understanding on what the UE can request, so it is preferred to have this network guidance.

CATT indicate the current LPP signalling already supports explicit parameters from the UE.

ZTE agree with Huawei that the previous agreement has already captured this, but the spec may not be clear. They think we should not add a new list but add in the field description that if the network provides a configuration, the UE should request explicit parameters within the configuration.

Qualcomm understood the previous agreement differently: We have predefined configurations, or the UE can send an explicit list, and if the predefined configurations are there, the UE can only request within the scope of the predefined configuration parameters. They think the stage 2 is aligned with this, and if we add a new list, it is not minor work. So they see that nothing is broken with the current specification. They are not sure why the UE would request explicit parameters if the predefined configurations are there, because the LMF is unlikely to grant it.

Nokia do not see value in a new list; they think if there is a predefined configuration list, that list can be used for scope restriction, and they think this aligns with the previous agreement.

Agreements:

Proposal1 (modified): For predefined on-demand DL-PRS configuration, TRP-related information does not need to be added.

Proposal3: Leave the discussion to RAN3 on whether there is gap between

(a) the partial set of PRS parameters in TRP INFORMATION RESPONSE and the complete on-demand PRS configuration in ProvideAssistanceData; and

(b) the partial set of PRS parameters in PRS CONFIGURATION REQUEST and the complete PRS configuration in PRS CONFIGURATION RESPONSE.

Proposal2 (modified): For UE-initiated on-demand PRS request by explicit parameter, no new list is added to the signalling for the network to provide a list of parameters to the UE that the UE should only request within the scope of the list when such configuration is provided. If the network provides predefined OD-PRS configurations, the UE can only request explicit parameters within the scope of those configurations; can discuss in the LPP CR if something needs to be captured for this.

The following documents will not be individually treated

[R2-2205007](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205007%20%5bH011%5d%20TRP%20config%20for%20on-demand%20PRS.docx) [H011] TRP config for on-demand PRS Huawei, HiSilicon CR Rel-17 37.355 17.0.0 0342 - F NR\_pos\_enh-Core

[R2-2205011](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205011%20%5bH057%5d%20Discussion%20on%20UE-initiated%20on-demand%20PRS.docx) [H057] Discussion on UE-initiated on-demand PRS Huawei, HiSilicon discussion Rel-17 NR\_pos\_enh-Core

[R2-2205581](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205581%20Mismatch%20between%20the%20on-demand%20PRS%20procedure%20of%20RAN2%20and%20RAN3.docx) Discussion on the mismatch between the on-demand PRS procedure of RAN2 and RAN3 vivo discussion Rel-17 NR\_pos\_enh-Core

[R2-2205805](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205805%20ODPRS.docx) On UE measurements to allow On-Demand PRS Ericsson, Nokia, Fraunhofer IIS, Fraunhofer HHI, Lenovo, Motorola Mobility CR Rel-17 38.305 17.0.0 0095 - F NR\_pos\_enh-Core

#### 6.11.2.4 GNSS positioning integrity

Signalling and procedures to support GNSS positioning integrity determination.

Summary document

[R2-2206092](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206092%20-%20Summary%20AI%20GNSS%20Integrity.docx) Summary of GNSS Positioning Integrity AI 6.11.2.4 Ericsson discussion Rel-17 NR\_pos\_enh-Core

* [AT118-e][639][POS] Collection of views on integrity proposals (Ericsson)

Scope: Take comments on the proposals from R2-2206092, focussing on which topics are critical to treat.

Intended outcome: Report to Monday week 2 session in R2-2206260

Deadline: Friday 2022-05-13 1800 UTC – extended to Thursday 2022-05-19 0400 UTC

[R2-2206260](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206260%20%5bAT118-e%5d%5b639%5d%5bPOS%5d%20Collection%20of%20views%20on%20integrity_Ericsson_Rapp.docx) [AT118-e][639][POS] Collection of views on integrity proposals (Ericsson) Ericsson discussion Rel-17 NR\_pos\_enh-Core

Proposal 1 Support Option 1 – keep the existing definition of PL

Proposal 2 Add horizontal and vertical AL as optional parameters to IntegrityInformationRequest-r17

Proposal 3 Move the PL definition to TS 38.305

Proposal 4 Support appending “protection level and achievable target integrity risk” to 38.305 Section 7.3.4, step 1 paragraph

Proposal 5 Support the suggested change to Table 8.1.2.1b-1.

[Chair’s note: This proposal refers to the changes as amended by Swift in the email discussion; see the report for full changes]

Discussion:

CATT want to understand the issue on the definition of PL; they find that the current definition includes the AL, and think this cannot be supported. If we have P2, they wonder what the value range of AL would be.

Ericsson think there was a strong majority for P1, but companies acknowledge that the AL is included in the definition. CATT clarify that the specification of how to calculate the PL includes the AL, but the LMF does not provide the AL to the UE, so it is not clear how the UE can calculate the PL.

Ericsson think if AL is not provided, the PL could be calculated by an alternative formula. They think there is a reasonable case for using the same value range for AL and PL, but this was not discussed in detail.

Qualcomm think we agreed last meeting that the AL is not needed; they think we should not revert this. They think the UE can send the TIR and the LMF can calculate the PL.

Ericsson understand that what was excluded was the device reporting AL as part of the KPIs.

u-blox agree with Qualcomm that mode 1 does not require the AL for calculation of the PL; it is calculated based on the TIR and the LMF makes the final decision.

CATT think the current formula for calculating the PL is confusing. For the MT-LR case, even for UE-based integrity, they think the UE cannot get the AL. Qualcomm think the UE does not need the AL to calculate the PL, only to check if the TIR is exceeded, which is done by the LMF.

Swift think we could clarify in a NOTE that the PL inequality is valid for all values of the AL, and this addresses CATT’s concern. CATT think this is similar to their proposal, but Swift think it would be wrong to replace the AL entirely.

Ericsson think there are two aspects, one about the reporting and one about the configuration of the device. They think the dependency on the AL is correct for configuring the behaviour of the device, and this is independent of the mode 1/mode 2 discussion which is about the reporting.

Intel understand P3/P5 are also applicable to 36.305.

Agreements:

Proposal 3 (modified) Move the PL definition to TS 38.305/36.305.

Proposal 4 Support appending “protection level and achievable target integrity risk” to 38.305 Section 7.3.4, step 1 paragraph

Proposal 5 (modified) Support the suggested change to Table 8.1.2.1b-1 and equivalent table in 36.305.

[Chair’s note: This proposal refers to the changes as amended by Swift in the email discussion; see the report for full changes]

36.305 changes to be merged into rapporteur CR.

Proposal 1 Support Option 1 – keep the existing definition of PL

Proposal 2 Add horizontal and vertical AL as optional parameters to IntegrityInformationRequest-r17

Agreement:

Keep the definition of PL, and clarify in a NOTE that the PL inequality is valid for all values of the AL.

Extend discussion to Thursday 2022-05-19 0400 UTC to discuss whether P2 is needed.

Proposal 6 Support the suggestion in R2-2204997 and R2-2205815 to send an LS to relevant WGs about the agreements for integrity

Discussion:

Huawei think we need to include SA1 on the LS because we have taken decisions on the use cases and KPIs. They think SA1 can still capture the Rel-17 impact. On the LS to CT4, they think we would normally go through SA2 and let SA2 take the stage 2 decisions and notify CT4.

Ericsson think SA1 text already captures this and they may not need to act.

* [AT118-e][643][POS] LS to SA1/SA2 on integrity (Huawei)

Scope: Draft an LS to SA1 and SA2 updating them on RAN2’s integrity decisions. Discuss also if CT4 should be included.

Intended outcome: Approved LS (without CB if possible) in R2-2206389

Deadline: Thursday 2022-05-19 0400 UTC

[R2-2206389](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206389%20LS%20on%20GNSS%20integrity.docx) Draft LS to SA1/SA2 on GNSS integrity Huawei, HiSilicon LS out Rel-17 NR\_pos\_enh-Core To:SA1, SA2 Cc:CT1,CT4

* Approved (email discussion [AT118-e][643])

[R2-2206681](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206681%20%5bAT118-e%5d%5b639%5d%5bPOS%5d%20Collection%20of%20views%20on%20integrity_phase2_Summary.docx) [AT118-e][639][POS] Collection of views on integrity proposals (Ericsson) Ericsson discussion Rel-17 NR\_pos\_enh-Core

* Noted (email discussion [AT118-e][639])

The following documents will not be individually treated

[R2-2204997](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204997%20Draft%20LS%20to%20SA1%20and%20SA2%20on%20GNSS%20integrity.docx) Draft LS to SA1/SA2 on GNSS integrity Huawei, HiSilicon LS out Rel-17 NR\_pos\_enh-Core To:RAN1

[R2-2205017](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205017%20Correction%20to%20stage2%20on%20service%20level%20support%20for%20GNSS%20integrity.docx) Correction to stage2 on service level support for GNSS integrity Huawei, HiSilicon CR Rel-17 38.305 17.0.0 0093 - F NR\_pos\_enh-Core

[R2-2205488](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205488_(6.11.2.4)%20CR_38305_Corrections%20on%20Positioning%20Integrity%20parameter%20table.docx) Corrections on Positioning Integrity parameter table Samsung R&D Institute UK draftCR Rel-17 38.305 17.0.0 NR\_pos\_enh-Core

[R2-2205815](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205815%20integrity.docx) Remaining issues for integrity Ericsson discussion Rel-17

[R2-2206037](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\37.355_CR0348_(Rel-17)_R2-2206037.docx) [C002] Correction on the Note of the Protection Level (PL) CATT CR Rel-17 37.355 17.0.0 0348 - F NR\_pos\_enh-Core

=> Revised in R2-2206067

[R2-2206067](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\37.355_CR0348r1_(Rel-17)_R2-2206067.docx) [C002] Correction on the Note of the Protection Level (PL) CATT CR Rel-17 37.355 17.0.0 0348 1 F NR\_pos\_enh-Core

#### 6.11.2.5 A-GNSS enhancements

Including support of BDS B2a and B3I signals and support of NavIC.

[R2-2204689](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\36.305_CR0108_(Rel-17)_R2-2204689.docx) Correction on the reference file of BDS Signal B3I CATT, CAICT CR Rel-17 36.305 17.0.0 0108 - F NR\_pos\_enh-Core

[R2-2204690](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.305_CR0087_(Rel-17)_R2-2204690.docx) Correction on the reference file of BDS Signal B3I CATT, CAICT CR Rel-17 38.305 17.0.0 0087 - F NR\_pos\_enh-Core

#### 6.11.2.6 Accuracy enhancements

Input on the accuracy enhancement objectives led by RAN1.

Summary document

[R2-2206083](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206083%20%5bPre118-e%5d%5b607%5d%5bPOS%5d%20Summary%20of%20AI%206.11.2.6%20on%20accuracy%20(CATT).docx) [Pre118-e][607][POS] Summary of AI 6.11.2.6 on accuracy (CATT) CATT discussion Rel-17

* Revised in R2-2206333

[R2-2206333](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206333%20%5bPre118-e%5d%5b607%5d%5bPOS%5d%20Summary%20of%20AI%206.11.2.6%20on%20accuracy%20(CATT).docx) [Pre118-e][607][POS] Summary of AI 6.11.2.6 on accuracy (CATT) CATT discussion Rel-17

Potentially easy to agree

beam antenna information for UE-based DL-AoD:

Proposal 2a: RAN2 to agree merge the CR [R2-2204987] and parts of CR [R2-2205008] to the LPP CR, i.e., add the reference TRP which shall be absent in case that the nr-TRP-BeamAntennaAngles is present, and update the power granularity of the relative power of the DL-PRS resource to align with RAN1 agreement.

Proposal 2b: RAN2 to agree the CR [R2-2205008] to clarify that the relative power value is absent for the first element in the beamPowerList.

Additional Measurement for DL-AoD:

Proposal 2d: RAN2 to agree the CR [R2-2205016] to update the measurement report information for DL-AoD according to LS R2-2204420 (issue 6), i.e., for Rel-17 DL-AoD, the first RSRP measurement is mandatory, while the additional RSRP measurements and all the RSRPP measurements are optional.

Measurement report:

Proposal 4b: RAN2 to agree the updates on measurement instances by LPP rapporteur and wait for the value of maximum number of measurement instances in a report from RAN1 later.

Proposal 4a: RAN2 to agree to reply an LS to RAN4 to notice that RAN2 wait for further notice of RxTEG exact values from RAN4.

Discussion:

Qualcomm think R2-2204987 is not clear (regarding P2a) and the current running CR is in line with the RAN1 guidance; they are also not sure which parts of R2-2205008 should be implemented, but in any case aligning with RAN1 should not require an explicit agreement.

CATT indicate that R2-2204987 is covered by the current LPP CR, albeit not with identical implementation. Regarding R2-2205008, they think the relevant changes are also captured in LPP. So they understand that P2a is no longer needed. They also think P2d is captured in LPP.

Ericsson think E603 and E604 are relevant to the combination of the TRP ID and the rotation angles; they think it has been implemented incorrectly in LPP.

Qualcomm are not sure P2b is a good idea; they understand that we provide a list of elements, and the first element is the reference, by definition 0dB power. The proposal here is to signal not the first one but only the relative ones, and they think this introduces 24 optionality bits to save a 6-bit field. Ericsson and CATT agree with Qualcomm. Huawei think we can discuss signalling overhead in the LPP CR.

Agreements:

Proposal 2d (modified): RAN2 to agree the contents of the CR [R2-2205016] to update the measurement report information for DL-AoD according to LS R2-2204420 (issue 6), i.e., for Rel-17 DL-AoD, the first RSRP measurement is mandatory, while the additional RSRP measurements and all the RSRPP measurements are optional.

Proposal 4b: RAN2 to agree the updates on measurement instances by LPP rapporteur and wait for the value of maximum number of measurement instances in a report from RAN1 later.

Need further discussion:

TxTEG report in RRC and LPP

TxTEG report mechanism in RRC aspect:

Proposal 1a: RAN2 to agree configuring event triggered reporting for UL-TDOA to enable reporting of the association between UE TxTEG ID and SRSp resources when a change in the association is identified.

Proposal 1b: RAN2 to agree update the asn.1 of UE-TxTEG-RequestUL-TDOA-Config-r17 in RRC as event triggered reporting as below:

EventTriggerConfig-r17::= SEQUENCE {

reportInterval-r7 ENUMERATED {ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240}

reportAmount-r17 ENUMERATED {1, infinity},

...

}

UE-TxTEG-RequestUL-TDOA-Config-r17 ::= CHOICE {

oneShot-r17 NULL,

periodicReporting-r17 ENUMERATED {ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240}

}

TxTEG report of asn.1 issues in RRC and LPP:

Proposal 1c: RAN2 to agree the max numbers of TEG-IDs in one RRC message and maxTxTEG-Sets-r17 in LPP message is 64. And send the agreement to RAN1 and RAN4 for confirmation.

Proposal 1d: RAN2 to agree the asn.1 update in LPP on UE TxTEG:

- Delete the condition in nr-SRS-TxTEG-Set-r17

- Change the structure of NR-UE-RxTx-TEG-Info-r17 from choice to sequence

- Delete the FFSs in NR-UE-RxTx-TEG-Info-r17

Failure report mechanism Tx/Rx TEG in RRC and LPP:

Proposal 1e: RAN2 to discuss whether the failure report mechanism Tx/Rx TEG in RRC and LPP is essential correction and discuss the CR[R2-2205806] in detail via offline.

DL-AoD related enhancement

Adjacent beam assistance data for UE-assisted DL-AoD:

Proposal 2c: RAN2 to further discuss the CR [R2-2205005] with consideration on RAN1’s agreement that the PRS subset and PRS boresight can be configured at the same time for UE-assisted DL-AoD.

Discussion:

Qualcomm think nothing is needed. The RAN1 conclusion is already in the CR.

LOS/NLOS related enhancement

Proposal 3a: RAN2 to discuss if the los/nlos indicator is designed as choice of per TRP or per resource in measurement report.

NR-DL-TDOA-MeasElement-r16 ::= SEQUENCE {

nr-LOS-NLOS-Indicator-r17 CHOICE {

perTRP LOS-NLOS-Indicator-r17,

perResource LOS-NLOS-Indicator-r17

} OPTIONAL,

nr-los-nlos-Indicator-r17 LOS-NLOS-Indicator-r17 OPTIONAL,

Proposal 3b: RAN2 to further discuss if the corrections in R2-2205004 and R2-2205307 are essential corrections via offline.

Measurement report

Proposal 4c: RAN2 to further discuss if the CR [R2-2205003] is an essential correction via offline.

Discussion:

Huawei think the change is essential.

Can be discussed in LPP offline.

Align the stage 2 specification to introduce the NRPPa enhancement

Proposal 5a: RAN2 to further discuss on how to capture the R17 NRPPa related positioning enhancement via offline, based on the CR in R2-2204697 and R2-2205807.

Proposal 5b: RAN2 to further discuss whether to send LS on the stage-2 update to RAN3 for confirmation, and the LS in R2-2204698 can be taken as baseline if needed.

* Postponed (stage 2)

PRU

Proposal 6a: RAN2 to discuss if there is no further specification enhancement on PRU in RAN2, postpone the PRU to later release, and send a reply LS to RAN1.

Discussion:

Ericsson do not think we need to do anything with P6a.

Intel think we can discuss the stage 2 handling in the 38.305 CR discussion, and RAN1 already indicated they will not do anything, so we do not need to send anything to them.

* [AT118-e][638][POS] Tx TEG and LOS/NLOS aspects (CATT)

Scope: Discuss P1a-P1e and P3a/P3b of R2-2206333.

Intended outcome: Report to CB session in R2-2206259

Deadline: Tuesday 2022-05-17 1800 UTC

[R2-2206259](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206259%20Summary%20of%20%5bAT118-e%5d%5b638%5d%5bPOS%5d%20Tx%20TEG%20and%20LOSNLOS%20aspects%20(CATT).docx) [AT118-e][638][POS] Tx TEG and LOS/NLOS aspects (CATT) CATT discussion Rel-17

Easy to agree

[Chair’s note: For P5/P6/P3, see R2-2206259 for ASN.1 details]

Proposal 5: RAN2 to update the TP of nr-LOS-NLOS-Indicator-r17 in LPP (8/9).

Proposal 6: RAN2 to agree the #2 and #3 corrections on LoS/NLoS indicator in LPP (9/9).

-----------------------------TP of corrections------------------------------------------------------------------------------------------

Correction #2/ Add in the field description that in spite of the request from the network in RLI, the UE can choose its LOS-NLOS reporting by TRP or by resource.

Correction #3/ Change the name to nr-LOS-NLOS-IndicatorPerResource to differentiate it with the per TRP/perResource Indication

Proposal 3: RAN2 to agree to send an LS to RAN1 on the maximum number of reported TxTEG-IDs in one RRC and LPP message with below questions (8/8):

- How many Tx TEG/SRS association changes in a single NR-Multi-RTT-SignalMeasurementInformation-r16 instance? 8 timestamps with 8 TEGs per time stamp is the current number in LPP, resulting in 64 elements.

- How many Tx TEG/SRS association changes in a single RRC message report?

Proposal 4: RAN2 not to support Failure report mechanism of Tx/Rx TEG in RRC and LPP (9/10).

Discussion:

On P3, Ericsson are OK to send an LS but think we will not get a reply before the freeze, so they think we should try for some consensus on how to capture the range in ASN.1. CATT think we could set a high value such as 128.

Nokia are fine with the proposal but think P5 could be more explicit.

Qualcomm think P5 is already reflected in the CR and does not need to be re-agreed; they think it was a non-controversial PropAgree RIL.

Ericsson understand there were two options in the RRC signalling for P3. Qualcomm have the same understanding, and think we do not need to send an LS if we can agree on an upper bound for the size; they understand that all companies were willing to agree to 64, but they think setting a higher number and confirming with RAN1 would be fine as well. In LPP, Qualcomm think the issue is only the number itself, but in RRC we have periodic reporting of the TEGs, and if something happens between periodic reports it cannot be reported, i.e., we can only report the most recent change of TEG association. They understand that RAN4 indicated we should just report what has happened in the past, and RRC only allows reporting one value but not the history; this would be addressed by having the same SEQUENCE OF structure in RRC that we have in LPP.

Huawei agree with Qualcomm and think the number of timestamps should be able to adapt to the periodicity, so maybe we should allow more than 8 timestamps. They think if we set the number of timestamps high, and RAN1 agree on another number, this could impact ASN.1 decoding.

Apple are OK with a high number (e.g. 128) in LPP, but for RRC, they indicate there is a proposal to have event-triggered signalling as well, and this would address the issue of events between reporting occasions. They think periodic reporting for RRC is a mistake.

ZTE think RAN1 are converging on a maximum number of 256 per measurement report, but this is different from the number per instance.

Qualcomm think having 8 TEGs and 32 instances would align with having 256 timestamps, and we can always reduce. Even if we need to increase, we could add another list.

Intel have the same understanding as ZTE.

Agreements:

Introduce in RRC a SEQUENCE OF structure for reporting Tx TEG/SRS association changes, similar to the current signalling in LPP. The UE reports all the association changes during the reporting period.

Maximum size of the reported list is 256.

Proposal 6: RAN2 to agree the #2 and #3 corrections on LoS/NLoS indicator in LPP (9/9).

Correction #2/ Add in the field description that in spite of the request from the network in RLI, the UE can choose its LOS-NLOS reporting by TRP or by resource.

Correction #3/ Change the name to nr-LOS-NLOS-IndicatorPerResource to differentiate it with the per TRP/perResource Indication

Proposal 4: RAN2 not to support Failure report mechanism of Tx/Rx TEG in RRC and LPP (9/10).

Need further discussion:

Proposal 1: RAN2 to agree no event triggered reporting for UL-TDOA to enable reporting of the association between UE Tx TEG ID and SRSp resources when a change in the association is identified (7/11).

Proposal 2: RAN2 to agree to keep the current asn.1 of UE-TxTEG-RequestUL-TDOA-Config-r17 in RRC (7/11).

Discussion:

Huawei think P1 is OK, but for P2 they are not sure: Within the report, the frequency information can be indicated, but the report is per UE, and they wonder if the signalling really should be per BWP instead of per UE. If two BWPs have different configurations, how does the UE coordinate?

Ericsson think Huawei’s comment is not quite about the current P2, and the intention of P2 is just to follow P1. They understand that the per-UE vs. per-BWP configuration is discussed in the CR.

Apple think nothing is broken but the signalling is inefficient.

InterDigital have the same understanding as Apple; they prefer having event-triggered reporting and think it would address the issues discussed above with periodic reporting, but they can accept the proposal.

Qualcomm think there was a proposal on the frequency information on SRS that was missed in the summary, with a related contribution from vivo. Ericsson indicate this is covered under the RRC discussion.

Agreement:

Proposal 1: RAN2 to agree no event triggered reporting for UL-TDOA to enable reporting of the association between UE Tx TEG ID and SRSp resources when a change in the association is identified (7/11).

The following documents will not be individually treated

[R2-2204696](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204696-Discussion%20on%20R17%20positioning%20enhancement%20impacts%20on%20stage-2%20specification.docx) Discussion on R17 positioning enhancement impacts on stage-2 specification CATT discussion Rel-17 NR\_pos\_enh-Core

[R2-2204697](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.305_CR0091_(Rel-17)_R2-2204697.docx) Introduction of R17 NRPPa related positioning enhancement to TS38.305 CATT CR Rel-17 38.305 17.0.0 0091 - F NR\_pos\_enh-Core

[R2-2204698](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204698%20%5bDraft%5d%20LS%20to%20RAN3%20on%20introduction%20of%20R17%20NRPPa%20related%20positioning%20enhancement%20to%20TS38.305.docx) [Draft] LS to RAN3 on introduction of R17 NRPPa related positioning enhancement to TS38.305 CATT LS out Rel-17 To:RAN3

[R2-2204705](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204705%20Discussion%20on%20the%20LS%20on%20the%20framework%20of%20UETRP%20Rx%20TEG.DOCX) Discussion on the LS on the framework of UE/TRP Rx TEG CATT discussion Rel-17

[R2-2204706](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204706%20Discussion%20on%20the%20left%20issues%20on%20UE%20TxTEG%20report%20in%20RRC%20and%20LPP%20protocols.DOCX) Discussion on the left issues on UE TxTEG report in RRC and LPP protocols CATT discussion

[R2-2204707](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38.331_CR2994_(Rel-17)_R2-2204707.docx) [C243] Correction on the UE TxTEG report in TS 38.331 CATT CR Rel-17 38.331 17.0.0 2994 - F NR\_pos\_enh-Core

[R2-2204708](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\37.355_CR0335_(Rel-17)_R2-2204708.docx) [C013][C014][C015][C016][C017]Corrections on the UE TxTEG report in TS 37.355 CATT CR Rel-17 37.355 17.0.0 0335 - F NR\_pos\_enh-Core

[R2-2204987](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\37.355_CR0336_(Rel-17)_R2-2204987.docx) [C011] Correction on the beam antenna information for DL-AoD CATT CR Rel-17 37.355 17.0.0 0336 - F NR\_pos\_enh-Core

[R2-2204988](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\37.355_CR0337_(Rel-17)_R2-2204988.docx) [C012] Correction on the selected on-demand PRS configuration for hybrid positioning CATT CR Rel-17 37.355 17.0.0 0337 - F NR\_pos\_enh-Core

[R2-2205003](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205003%20%5bH028%5d%20Correction%20to%20measurement%20with%20multiple%20TEGs.docx) [H028] Correction to measurement with multiple TEGs Huawei, HiSilicon CR Rel-17 37.355 17.0.0 0338 - F NR\_pos\_enh-Core

[R2-2205004](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205004%20%5bH026%5d%5bH027%5d%5bH029%5d%5bH030%5d%20Correction%20to%20LOS-NLOS%20indication.docx) [H026][H027][H029][H030] Correction to LOS-NLOS indication Huawei, HiSilicon CR Rel-17 37.355 17.0.0 0339 - F NR\_pos\_enh-Core

[R2-2205005](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205005%20%5bH006%5d%5bH040%5d%20Correction%20to%20adjacent%20beam%20assistance%20data.docx) [H006][H040] Correction to adjacent beam assistance data Huawei, HiSilicon CR Rel-17 37.355 17.0.0 0340 - F NR\_pos\_enh-Core

[R2-2205008](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205008%20%5bH013%5d%20Correction%20to%20TRP%20beam%20antenna%20info.docx) [H013] Correction to TRP beam antenna info Huawei, HiSilicon CR Rel-17 37.355 17.0.0 0343 - F NR\_pos\_enh-Core

[R2-2205016](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205016%20%5bH060%5d%20Correction%20on%20DL-AoD%20additional%20measurement.docx) [H060] Correction on DL-AoD additional measurement Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3033 - F NR\_pos\_enh-Core

[R2-2205307](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205307%20%5bH026%5d%5bH029%5d%5bZ004%5dDiscussion%20on%20LOS%20NLOS%20indicator%20in%20LPP%20spec.docx) [H026][H029][Z004]Discussion on LOS NLOS indicator in LPP spec ZTE, Sanechips CR Rel-17 37.355 17.0.0 0344 - F NR\_pos\_enh-Core

=> Revised in R2-2206051

[R2-2206051](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206051%20%5bH026%5d%5bH029%5d%5bZ004%5dDiscussion%20on%20LOS%20NLOS%20indicator%20in%20LPP%20spec.docx) [H026][H029][Z004]Discussion on LOS NLOS indicator in LPP spec ZTE, Sanechips CR Rel-17 37.355 17.0.0 0344 1 F NR\_pos\_enh-Core

[R2-2205308](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205308%20%5bZ003%5d%5bH025%5dSignaling%20of%20measurement%20instances.docx) [Z003][H025]Signaling of measurement instances ZTE, Sanechips CR Rel-17 37.355 17.0.0 0345 - F NR\_pos\_enh-Core

[R2-2205369](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205369%20Discussion%20on%20the%20Periodic%20Tx%20TEG%20reporting%20and%20preconfigured%20MG.doc) Discussion on the Periodic Tx TEG reporting and preconfigured MG Xiaomi discussion

[R2-2205370](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205370%20Remaining%20issues%20on%20positioning%20reference%20unit.doc) Remaining issues on positioning reference unit Xiaomi discussion

[R2-2205582](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205582%20Discussion%20on%20remaining%20issue%20about%20accuracy%20enhancements.docx) Discussion on remaining issue about accuracy enhancements vivo discussion Rel-17 NR\_pos\_enh-Core

[R2-2205654](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205654-positioning-periodic-tx-teg-v0.docx) On periodic UE Tx TEG reporting Apple discussion Rel-17 NR\_pos\_enh-Core

[R2-2205730](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205730%20(R17%20NR%20POS%20WI%20A61126_AccEnh).doc) Discussion on UE TX TEG association reporting InterDigital, Inc. discussion Rel-17

[R2-2205806](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205806%20Failure%20Report%20for%20TEG.docx) Remaining Issues on TEG reporting; failure Handling Ericsson discussion Rel-17

[R2-2205807](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205807%20TableUpdate.docx) Update of signalling in stage 2 to align with NRPPa Ericsson CR Rel-17 38.305 17.0.0 0096 - B NR\_pos\_enh-Core

#### 6.11.2.7 UE capabilities

[R2-2204933](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204933_Positioning%20UE%20capabilities.docx) Positioning UE capabilities Intel Corporation discussion Rel-17 NR\_pos\_enh-Core

[R2-2205009](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205009%20%5bH022%5d%20Summary%20of%20R2-agreed%20Capabilities%20for%20R17%20POSenh.docx) [H022] Summary of R2-agreed capabilities for R17 POSenh Huawei, HiSilicon CR Rel-17 38.822 16.3.0 0010 - B NR\_pos\_enh-Core

[R2-2206330](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206330%20PPW%20Capability.docx) On Resolving PPW Capability discrepancy Ericsson discussion

* [AT118-e][627][POS] Positioning UE capabilities (Intel)

Scope: Discuss proposals on UE capabilities, taking into account the related tdocs: R2-2204933, R2-2205009, R2-2206330.

Intended outcome: Endorsed TPs to some or all of 37.355, 38.331, 38.306, 38.822 (without CBs if possible) and report in R2-2206393

Deadline: Tuesday 2022-05-17 1800 UTC – extended to Friday 2022-05-20 1000 UTC for endorsement of draft CRs

[R2-2206393](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206393%20_Report%20of%20AT118-627-v07_Summary4.docx) Report of [AT118-e][627][POS] Positioning UE capabilities (Intel) Intel Corporation discussion Rel-17 NR\_pos\_enh-Core

* Noted

[R2-2206396](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206396_(draft%20CR%2037355%20%20POS%20Capability)_v02.docx) 37.355 CR for the positioning capablities Intel Corporation draftCR Rel-17 37.355 17.0.0 F NR\_pos\_enh-Core

* Endorsed (for merge into 37.355 rapporteur CR)

[R2-2206397](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206397_(draft%20CR%2038331%20POS%20Capability)_v02.docx) 38.331 CR for the positioning capablities Intel Corporation draftCR Rel-17 38.331 17.0.0 F NR\_pos\_enh-Core

* Endorsed (for merge into 38.331 mega CR)

[R2-2206398](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206398_(draft%20CR%2038306%20%20POS%20Capability)_v02.docx) 38.306 CR for the positioning capablities Intel Corporation draftCR Rel-17 38.306 17.0.0 F NR\_pos\_enh-Core

* Endorsed (for merge into 38.306 mega CR)

#### 6.11.2.8 LPP ASN.1 issues

Any contributions related only to the details of ASN.1 in 37.355. CRs should not be submitted to this agenda item except by the specification rapporteur.

ASN.1 review process documents

[R2-2205843](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2205843.zip) Rel-17 LPP RIL Qualcomm Incorporated discussion

* Revised in R2-2206326

[R2-2206326](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2206326.zip) Rel-17 LPP RIL Qualcomm Incorporated discussion

[R2-2205844](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2205844.zip) Rel-17 LPP ASN1 Review File Qualcomm Incorporated discussion

* Revised in R2-2206327

[R2-2206327](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2206327.zip) Rel-17 LPP ASN1 Review File Qualcomm Incorporated discussion

[R2-2205846](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205846_(draft%20CR%2037355%20Editorial%20Issues).docx) Editorial Corrections Qualcomm Incorporated draftCR Rel-17 37.355 17.0.0 F NR\_pos\_enh-Core

R2-2205847 LPP Updates and ASN.1 Corrections Qualcomm Incorporated CR Rel-17 37.355 17.0.0 0347 - F NR\_pos\_enh-Core Late

[R2-2206328](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206328_(draft%20CR%2037355%20LPP%20Updates).docx) LPP Updates and ASN.1 Review Qualcomm Incorporated draftCR Rel-17 37.355 17.0.0 F NR\_pos\_enh-Core

* [AT118-e][631][POS] Remaining PropDisc LPP RIL items (Qualcomm)

Scope: Check company views and discuss the RIL items marked for discussion and not covered by contributions:

* H004: Expected AoA/AoD per TRP or per resource
* N013: Uncertainty mandatory or optional for expected AoA/AoD
* H059: DL-PRS ID in the TEG timestamp
* H024, H032, H033, H046: BIT STRING for UE-based assistance data per method

Intended outcome: Report to Monday (week 2) session in R2-2206252

Deadline: Friday 2022-05-13 1800 UTC

[R2-2206252](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206252_(%5bAT118-e%5d%5b631%5d%5bPOS%5d_Remaining_LPP%20RIL%20items)_Summary.docx) [AT118-e][631][POS] Remaining PropDisc LPP RIL items (Qualcomm) Qualcomm Incorporated discussion

Proposal 1: Regarding H004 (Expected AoA/AoD per TRP or per resource), keep the angle assistance information (expected angle value and uncertainty (NR-DL-PRS-ExpectedAoD-or-AoA-r17)) per TRP (as in current LPP) and send an LS to RAN1 asking for clarification/confirmation.

Proposal 2: Regarding N013 (uncertainty mandatory or optional for expected AoA/AoD), keep the uncertainty of expected AoA/AoD mandatory present as implemented in current LPP and send an LS to RAN1 asking for clarification/confirmation.

Agreements:

Proposal 1: Regarding H004 (Expected AoA/AoD per TRP or per resource), keep the angle assistance information (expected angle value and uncertainty (NR-DL-PRS-ExpectedAoD-or-AoA-r17)) per TRP (as in current LPP) and send an LS to RAN1 asking for clarification/confirmation.

Proposal 2: Regarding N013 (uncertainty mandatory or optional for expected AoA/AoD), keep the uncertainty of expected AoA/AoD mandatory present as implemented in current LPP and send an LS to RAN1 asking for clarification/confirmation.

Proposal 3: Regarding H059 (TEG timestamp), no change is needed and the current LPP implementation is kept.

Proposal 4: Regarding H024 (Rel-16 Assistance Data in Request BIT STRING), no change is needed and the current LPP implementation is kept.

Proposal 5: Regarding H032 (beam antenna information support for DL-TDOA), remove the beam antenna information capability for DL-TDOA. Remove the corresponding bit from the nr-PosCalcAssistanceRequest-r17) for DL-TDOA.

Proposal 6: Regarding H033 (losNlosInfoSup in nr-PosCalcAsssitanceSupport), remove the losNlosInfoSup from nr-PosCalcAssistanceSupport-r17 for DL-TDOA and DL-AoD.

Proposal 7: Regarding H046 (trpTEG-InfoSup for DL-AoD), remove the TRP TEG capability for DL-AoD. Remove the corresponding bit from the nr-PosCalcAssistanceRequest-r17) for DL-AoD.

Agreements:

Proposal 3: Regarding H059 (TEG timestamp), no change is needed and the current LPP implementation is kept.

Proposal 4: Regarding H024 (Rel-16 Assistance Data in Request BIT STRING), no change is needed and the current LPP implementation is kept.

Proposal 5: Regarding H032 (beam antenna information support for DL-TDOA), remove the beam antenna information capability for DL-TDOA. Remove the corresponding bit from the nr-PosCalcAssistanceRequest-r17) for DL-TDOA.

Proposal 6: Regarding H033 (losNlosInfoSup in nr-PosCalcAsssitanceSupport), remove the losNlosInfoSup from nr-PosCalcAssistanceSupport-r17 for DL-TDOA and DL-AoD.

Proposal 7: Regarding H046 (trpTEG-InfoSup for DL-AoD), remove the TRP TEG capability for DL-AoD. Remove the corresponding bit from the nr-PosCalcAssistanceRequest-r17) for DL-AoD.

Proposal 8: Regarding H028 (measurement report with multiple TEGs as proposed in R2-2205003), discuss and decide whether to keep the current structure or adopt the structure in R2-2205003.

Discussion:

Chair understands that there was a split with no consensus to make a change.

Huawei think this is a signalling optimisation that can be handled by the rapporteur. They think there may only be field description impact to clarify the association.

* [AT118-e][644][POS] LS to RAN1 on expected AoA/AoD parameters (Huawei)

Scope: Draft an urgent LS to RAN1 to check P1/P2 of R2-2206252.

Intended outcome: Approved LS (without CB) in R2-2206390

Deadline: Wednesday 2022-05-18 0400 UTC

[R2-2206390](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206390%20LS%20on%20expected%20AoA%20and%20AoD%20parameters.docx) LS on expected AoA and AoD parameters RAN2 LS out Rel-17 NR\_pos\_enh-Core To:RAN1 Cc:RAN3

* Approved (email discussion [AT118-e][644])

Proposals on RIL issues

[R2-2204932](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204932_I004%20Validity%20area%20for%20preconfigured%20AD.docx) I004 Validity area for preconfigured AD Intel Corporation discussion Rel-17 NR\_pos\_enh-Core

[R2-2205010](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205010%20%5bH042%5d%5bH004%5d%5bH012%5d%5bH025%5d%20Draft%20LS%20to%20R1%20for%20remaining%20issues.docx) [H042][H004][H012][H025] Draft LS to R1 for remaining issues Huawei, HiSilicon LS out Rel-17 NR\_pos\_enh-Core To:SA1, SA2

[R2-2205430](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205430.docx) Discussion of the need of the area ID for the pre-configured assistance data OPPO discussion Rel-17 NR\_pos\_enh-Core

[R2-2205583](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205583%20%5bV003%5d%20Discussion%20on%20the%20format%20of%20pre-configuration.docx) [V003] Discussion on the format of pre-configuration vivo discussion Rel-17 NR\_pos\_enh-Core

[R2-2205584](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205584%20%5bV004%5d%5bV006%5dDiscussion%20on%20LPP%20ASN.1%20issues.docx) [V004][V006]Discussion on LPP ASN.1 issues vivo discussion Rel-17 NR\_pos\_enh-Core

[R2-2205813](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205813%20LPP%20RIL%20E603-E604.docx) LPP RIL E603 and 604 on associated TRP Ericsson discussion Rel-17 37.355 Late

#### 6.11.2.9 Positioning RRC ASN.1 issues

Any contributions related only to the details of positioning-specific ASN.1 in 38.331.

ASN.1 review process documents

[R2-2205857](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Docs\R2-2205857.zip) RRC Positioning RIL Summary Ericsson discussion Rel-17 Late

* Revised in R2-2206400

R2-2206400 RRC Positioning RIL Summary Ericsson discussion Rel-17

Measurement gap issues

[R2-2205000](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205000%20%5bH566%5d%5bH567%5d%20Correction%20for%20Location%20Measurement%20Indication.docx) [H566][H567] Correction for Location Measurement Indication Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3027 - F NR\_pos\_enh-Core

[R2-2205048](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205048%20%5bS854%5d%5bS855%5d%5bS856%5d%20Handling%20pre-MG%20for%20POS%20upon%20HO.docx) [S854][S855][S856] Handling preconfigured gaps for POS upon a handover Samsung discussion Rel-17 NR\_pos\_enh-Core

[R2-2205310](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205310%20Correction%20on%20pre-configured%20MG%20procedure%20in%2038.331.docx) Correction on pre-configured MG procedure in 38.331 ZTE, Sanechips CR Rel-17 38.331 17.0.0 3066 - F NR\_pos\_enh-Core

RILs marked as ToDisc

[R2-2204999](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204999%20%5bH570%5d%20Correction%20for%20cell%20reselection%20for%20SRS%20in%20RRC_INACTIVE.docx) [H570] Correction for cell reselection for SRS in RRC\_INACTIVE Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3026 - F NR\_pos\_enh-Core

[R2-2205811](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205811%20RIL%20E064%20TEG%20Reporting.docx) [RILE064] Moving TEG Reporting Configuration from SRS-Config to RRCReconfig Ericsson CR Rel-17 38.331 17.0.0 3118 - F NR\_pos\_enh-Core

[R2-2205816](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205816%20E060.docx) [RIL E060] On removal of Editors' Note for SRS Inactive mode procedure during RRC Resume Ericsson discussion Rel-17 38.331 Late

[R2-2205817](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205817%20RILE061.docx) [RIL E060] Editors Note Discussion on RRC Procedure Structure on section Ericsson discussion Late

Documents on other RIL issues

[R2-2204998](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2204998%20%5bH568%5d%20Correction%20for%20periodic%20TEG%20reporting.docx) [H568] Correction for periodic TEG reporting Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3025 - F NR\_pos\_enh-Core

[R2-2205001](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205001%20%5bH563%5d%20Correction%20for%20reception%20of%20RRCRelease%20by%20the%20UE.docx) [H563]Correction for reception of RRCRelease by the UE Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3028 - F NR\_pos\_enh-Core

[R2-2205049](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205049%20%5bS851%5d%5bS852%5d%5bS853%5d%20Type%20and%20prioirty%20configuration%20of%20PPW.docx) [S851][S852][S853] Type and priority configuration of PPW Samsung discussion Rel-17 NR\_pos\_enh-Core

[R2-2205498](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205498_(6.11.2.9)%20%5bE066%5d%20Correction%20on%20structure%20of%20UEPositioningAssistInfo%20message%20contents%20for%20reducing%20unnecessary%20data%20transmission.docx) [E066] Correction on structure of UEPositioningAssistInfo message contents for reducing unnecessary data transmission Samsung R&D Institute UK discussion

[R2-2205585](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205585%20Discussion%20on%20positioning%20RRC%20ASN.1%20issues.docx) Discussion on positioning RRC ASN.1 issues vivo discussion Rel-17 NR\_pos\_enh-Core

### 6.11.3 Other

Any other topics on NR positioning enhancements.

[R2-2205006](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205006%20%5bH056%5d%20Correction%20to%20need%20code%20in%20posSIB_R17.docx) [H056] Correction to need code in posSIB\_R17 Huawei, HiSilicon CR Rel-17 37.355 17.0.0 0341 - F NR\_pos\_enh-Core

[R2-2205655](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\38305_CR0094_(Rel-17)_R2-2205655-Pos-stage-2-UL-UE-TEG-v0.docx) Stage-2 positioning corrections Apple CR Rel-17 38.305 17.0.0 0094 - F NR\_pos\_enh-Core

## 6.21 TEI17

Time budget: 2 TU

### 6.21.2 TEI proposals initiated by RAN2

Proposals that has not yet been agreed.

Tdoc limitation: 2 tdocs, except for Operators.

[R2-2205845](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2205845%20Remaining%20details%20for%20high-precision%20GNSS%20reporting.docx) Remaining details for high-precision GNSS reporting ESA, Ericsson, Deutsche Telekom, T-Mobile USA, Swift Navigation, Hexagon discussion Rel-17 37.355

* Revised in R2-2206329

[R2-2206329](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206329%20Remaining%20details%20for%20high-precision%20GNSS%20reporting.docx) Remaining details for high-precision GNSS reporting ESA, Ericsson, Deutsche Telekom, T-Mobile USA, Swift Navigation, Hexagon, MediaTek Inc., u-blox discussion Rel-17 37.355

* [AT118-e][628][TEI17] NMEA GGA string for HA-GNSS reporting (Ericsson)

Scope: Discuss the contribution in R2-2205845 and determine if a CR is agreeable.

Intended outcome: Agreed CR (without CB if possible) in R2-2206250 – replaced by R2-2206444

Deadline: Tuesday 2022-05-17 1800 UTC

[R2-2206395](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206395%20%5bAT118-e%5d%5b628%5d%5bPOS%5d%20NMEA%20GGA%20string%20for%20HA-GNSS%20reporting%20(Ericsson)_phase3_Rapp_Ericsson.docx) [AT118-e][628][POS] NMEA GGA string for HA-GNSS reporting Ericsson discussion Rel-17

Proposal 1 Add attributes based on NMEA-GGA sentence attributes to the CommonIEsProvideLocationInformation IE

Proposal 2 Agree to the TS 37.355 CR in R2-2206444

Discussion:

Qualcomm have a different view from the proponents and think the proposals as written are a bit open-ended; we need to be specific about what will be introduced. More generally, they think this was previously seen under integrity and now comes back in TEI17, and they do not see a consistent problem that it solves. For the proposed CR, they think the UE behaviour is not fully clear, and we do not have all the definitions that are needed to make the string make sense in 3GPP scope. On the NMEA GGA sentence generally, they think it is legacy DGPS, not directly related to the new HA-GNSS functionality as of Rel-15. They think we are close to agreeing that the error causes can be introduced by extending the error cause IE, but it is not clear that we need the rest.

Ericsson think this is not an extension of the GNSS local environment discussion from integrity, and the motivation is different. They understand that discussions about positioning uncertainty have resulted in participants asking for the GGA string information as an indicator of uncertainty, and there is an industry preference for this format. They see the motivation as being for operators to monitor their service as provided to users, allowing them to assess the performance, and the NMEA GGA sentence is widely used by GNSS chipsets to provide accuracy information.

[R2-2206444](file:///C:\Users\mtk16923\Documents\3GPP%20Meetings\202205%20-%20RAN2_118-e,%20Online\Extracts\R2-2206444_37.355_CR0349_(Rel-17).docx) NMEA GGA sentence info in high accuracy GNSS location estimates [HR-GNSS-NMEA] ESA, Ericsson, Deutsche Telekom, T-Mobile USA, Swift Navigation, Hexagon, MediaTek Inc., u-blox CR Rel-17 37.355 17.0.0 0349 - B TEI17

* [Post118-e][601][TEI17] NMEA GGA sentence info (Ericsson)

Scope: Review the CR in R2-2206444 and determine what parts are agreeable.

Intended outcome: Agreed CR

Deadline: Short (for RP)

# Post-Meeting Email Discussions

* [Post118-e][601][TEI17] NMEA GGA sentence info (Ericsson)

Scope: Review the CR in R2-2206444 and determine what parts are agreeable.

Intended outcome: Agreed CR

Deadline: Short (for RP)

* [Post118-e][602][POS] 38.331 positioning CR (Ericsson)

Scope: Update and check the CR in R2-2206246.

Intended outcome: Agreed CR

Deadline: Short (for RP)

* [Post118-e][603][POS] 37.355 positioning CR (Qualcomm)

Scope: Update and check the CR in R2-2206247.

Intended outcome: Agreed CR

Deadline: Short (for RP)

* [Post118-e][604][POS] 38.321 positioning CR (Huawei)

Scope: Update and check the CR in R2-2206248

Intended outcome: Agreed CR

Deadline: Short (for RP)

* [Post118-e][605][Relay] 38.331 relay CR (Huawei)

Scope: Update and check the CR in R2-2206231 to take account of decisions of this meeting.

Intended outcome: Agreed CR

Deadline: Short (for RP)