**3GPP TSG-RAN WG2 Meeting #112-e R2-20xxxxx**

**Online, 2-13 November 2020**

**Source: Session Chair (MediaTek)**

**AI: 10.5**

**Title: Report from 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.

* [AT112-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 2020-11-13 1000 UTC

* [AT112-e][601][Relay] Status update to SA2 (OPPO)

 Scope: Generate a summary of RAN2 status on relaying for SA2

* Report status of both L2 and L3 relaying designs as well as architecture-independent aspects (including issues in R2-2008760), in order to coordinate with SA2 for reaching conclusions
* Capture any points where we assume SA2 will resolve an issue

 Intended outcome: Approvable LS in R2-2010862

 Deadline: Friday 2020-11-13 0000 UTC

* [AT112-e][602][POS] Rel-16 positioning UE capabilities in RRC (Intel)

 Scope: Accommodate any needed updates to the capabilities, taking into account updates to the feature lists during the meeting.

 Intended outcome: Endorsable CR for merge into the capabilities mega CR

 Deadline: Friday 2020-11-13 0000 UTC

* [AT112-e][603][POS] Positioning stage 2 corrections (Nokia)

 Scope: Conclude on the remaining proposals from R2-2010674: P2/P3/P4/P6/P7/P9/P10/P11/P12.

 Intended outcome: Agreeable CR in R2-2010863

 Deadline: Tuesday 2020-11-10 1200 UTC

* [AT112-e][604][POS] Positioning RRC proposals (Ericsson)

 Scope: Discuss and resolve proposals 1 and 2 from R2-2010709.

 Intended outcome: Agreeable CR in R2-2010864

 Deadline: Tuesday 2020-11-10 1200 UTC

* [AT112-e][605][POS] LPP proposals (Qualcomm)

 Scope: Discuss and resolve the remaining proposals from R2-2010975: P1-P5, P7, P8.

 Intended outcome: Agreeable CR in R2-2010865

 Deadline: Tuesday 2020-11-10 1200 UTC

* [AT112-e][606][POS] LS to RAN1 on positioning latency (Intel)

 Scope: Summarise the latency results and draft an LS to RAN1. Clarify that the attached results are a checkpoint that has not yet been endorsed as a TP.

 Intended outcome: Summary of latency results (R2-2010866) and agreeable LS (R2-2010867) with the summary attached

 Deadline: Thursday 2020-11-05 1200 UTC

* [AT112-e][607][POS] Gathering of latency enhancement solutions (CATT)

 Scope: Describe and discuss the proposed latency enhancements in a format suitable for developing into a TP.

 Intended outcome: Text proposal in R2-2010868

 Deadline: Friday 2020-11-13 0000 UTC

# 4 EUTRA corrections Rel-15 and earlier

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

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

## 4.4 Positioning corrections Rel-15 and earlier

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

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

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

Only essential corrections

## 5.5 Positioning corrections

Corrections to both the stage 2 and stage 3 aspects related to positioning. Stage 2 CRs should be discussed with the specification rapporteur before submission.

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

[R2-2010138](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010138%20REL-15%20CR%2038305%20ECID.docx) Corrections to E-CID positioning Nokia, Nokia Shanghai Bell CR Rel-15 38.305 15.6.0 0042 - F NR\_newRAT-Core

There is no Rel-16 shadow because the affected text is different.

* Agreed

[R2-2010274](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010274%20Correction%20to%20OTDOA%20positioning%20support%20description%20in%20R15.docx) Correction on OTDOA Positioning support in R15 Huawei, HiSilicon CR Rel-16 38.305 16.2.0 0047 - F NR\_newRAT-Core

Qualcomm are not sure the CR is correct; there is no XnAP signalling for OTDOA, but the text only talks about “signalling access”, and they understand that for option 4 the sentence is correct as written. Huawei understand that if there is no signalling access between the LMF and ng-eNB, there is no way for the gNB to connect the ng-eNB to the LMF. Qualcomm think there is generic support on Xn for transport of control plane signalling.

Nokia think in a generic sense such signalling may be possible, but it may not be currently used for any positioning method.

Ericsson would like some extra time to check.

Intel think this change could be made in RAN3. Qualcomm understand that this is related to LPP routing, not NRPPa, so it isn’t a RAN3 issue.

Come back on Thursday 2020-11-05. [CB]

[R2-2010275](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010275%20Correction%20to%20OTDOA%20positioning%20support%20description%20in%20R16.docx) Correction on OTDOA Positioning support in R16 Huawei, HiSilicon CR Rel-16 38.305 16.2.0 0048 - A NR\_pos-Core

[R2-2010569](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010569%20Neighbor%20cell.docx) Correction of A-GNSS Periodical retrival of Assistance Data Ericsson CR Rel-15 37.355 15.0.0 0277 - F NR\_newRAT-Core

Qualcomm think the problem scenario is strange; if the serving cell is not known at the LMF, this is bad OAM and the problem is not restricted to periodic assistance data delivery; in their view Rel-15 is not broken.

Ericsson think from the network side there is a problem. Bad OAM may be the root cause in some cases but it still causes problem scenarios, and they see it as easy for the UE to include the neighbour cell information.

CATT think this is an enhancement, not a correction, and it could be discussed in Rel-17.

Intel have the same view as Qualcomm and think if OAM is bad, the solution doesn’t work because the LMF will be unable to identify other cells too.

Qualcomm think this is not free for the UE since it does not normally decode NCGIs of neighbour cells.

Nokia agree it is not a correction.

* Not pursued

[R2-2010570](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010570%20Neighbor%20cell.docx) Correction of A-GNSS Periodical retrival of Assistance Data Ericsson CR Rel-16 37.355 16.2.0 0278 - F NR\_newRAT-Core

[R2-2010571](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010571%20LPP%20ASN1.docx) Correction of hanging ASN.1 code after END Ericsson CR Rel-15 37.355 15.0.0 0279 - F NR\_newRAT-Core

Qualcomm checked with compilers and did not see a syntax error, but agree the change is backward compatible and the signalling should be properly encapsulated.

* Agreed

[R2-2010572](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010572%20LPP%20ASN1.docx) Correction of hanging ASN.1 code after END Ericsson CR Rel-16 37.355 16.2.0 0280 - F NR\_newRAT-Core

Qualcomm think the coversheet should be updated: UE impact and category F. Chair notes the “other affected specs” should be filled out.

* Agreed with these changes as R2-2010572

# 6 Rel-16 NR Work Items

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

## 6.6 NR Positioning Support

(NR\_pos-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Jun 20; WID: RP-200218, SR: RP-201342). R2 and R1 parts are 100% complete (NR TEI16 Positioning)

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

Limit: 5 email threads

### 6.6.1 General and Stage 2 corrections

Including incoming LSs, Including impact to 36.305 and 38.305. Stage 2 corrections should be discussed with the specification rapporteur before submission.

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

Incoming LSs

[R2-2008746](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008746_R4-2012143.docx) Reply LS on positioning SRS during DRX inactive time (R4-2012143; contact: Apple) RAN4 LS in Rel-16 NR\_pos-Core To:RAN2 Cc:RAN1

* Noted

[R2-2008748](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008748_R4-2012285.doc) LS on new measurement gap patterns for positioning measurements (R4-2012285; contact: Ericsson) RAN4 LS in Rel-16 NR\_pos-Core To:RAN2

* Noted

Summary document

[R2-2010674](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010674%20Summary_for_AI_6_6_1.docx) Summary document for agenda item 6.6.1 - NR Positioning Stage2 Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_pos-Core Late

P5:

Chair thinks this may be more of an enhancement. Ericsson think it is a correction because there are failure modes when the UE is already transmitting. Qualcomm think there is no activation for periodic SRS, and if the network wants “activation” it should use SP. Nokia understand there may be interest from RAN3, but see it as somewhat of an enhancement. Apple generally agree with Qualcomm and think it should be discussed in RAN3 first. CATT share the same understanding. Intel also agree with Qualcomm. Samsung think periodic SRS has less time criticality. Ericsson clarify they do not intend to introduce a new activation command and this would be used when the LMF is configuring the SRS characteristic. Huawei have the same view as Qualcomm. Proposal is noted.

P8:

Qualcomm think this is implementation-dependent and not new in NR; the network can always do this, and they think nothing needs to be captured. Nokia agree with Qualcomm. Intel have the same view and think this was discussed before. Proposal is noted.

P9:

Huawei are not sure the CRs are needed. CATT think they align the text with the figure. To be handled in email.

P10:

Qualcomm think the new text does not quite fit into section 5.2 and some editing is needed. CATT would like the reference for deferred MT-LR clarified. Huawei understand that the flow is already in an SA2 specification and wonder if there is any relation to RAN. To be handled in email.

P11:

Nokia think the change is not essential. Huawei think this text has been there for a long time and it’s not clear what the motivation is to change it now. Ericsson think this is an alignment CR with SA2. Intel do not see the need and think nothing is broken in the current text. To be handled in email.

P12:

Nokia are OK with removing the note. Ericsson think it is there in Rel-15 as well. Qualcomm wonder if this could be merged in another CR. Nokia suggest it could be merged with the aperiodic SRS CR. To be handled in email.

P1:

Agreed to have the CR from R2-2009000.

* [AT112-e][603][POS] Positioning stage 2 corrections (Nokia)

 Scope: Conclude on the remaining proposals from R2-2010674: P2/P3/P4/P6/P7/P9/P10/P11/P12.

 Intended outcome: Agreeable CR

 Deadline: Tuesday 2020-11-10 1200 UTC

Proposal 2: [R2-2010992] RAN2 to discuss the text proposals in R2-2010070 and R2-2010267 and decide on a suitable text to capture the addition of aperiodic SRS support to UL methods in TS 38.305.

Proposal 3: [R2-2010992] RAN2 to discuss and decide whether to add the additional step showing the deactivation of SRS transmission in the call flows for multi-RTT, UL-TDOA and UL-AoA positioning methods.

Proposal 4: [R2-2010992, to merge in editorial changes] RAN2 to agree only the editorial changes proposed in R2-2010266 and use proposal 2 and proposal 3 to decide on updates for the addition of aperiodic SRS support to TS 38.305.

Proposal 6: RAN2 to discuss and decide the level of details to add to Annex A in TS 38.305 for SUPL 2.0 support of NR positioning methods.

Proposal 7: RAN2 to discuss and decide the multiple corrections to E-CID and NR E-CID in R2-2010141 since it is a superset of the changes in R2-2010268.

Proposal 9: RAN2 to discuss and agree the CRs in R2-2008803 and R2-2008804 for corrections to NI-LR/MT-LR and MO-LR call flows in TS 36.305 and TS 38.305.

Proposal 10: RAN2 to discuss and decide whether to update the call flow in Figure 5.2-1 in TS 38.305 to include steps corresponding to deferred MT-LR and whether we should add the new section on deferred MT-LR under Section 7.3.x. Also discuss the minor text clarifications to the MO-LR, MT-LR/NI-LR procedures.

Proposal 11: RAN2 to discuss and decide whether to add clarification that the reported geographical co-ordinates is based on the WGS-84 reference frame.

Proposal 12: RAN2 to discuss and decide whether to delete the Editor’s note in Section 8.2.3.2.2.1 in TS 38.305 which is under the Assistance Data Delivery between LMF and ng-eNB section for OTDOA positioning.

Other contributions

[R2-2008803](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5C36%20305_CR0093_%28Rel-16%29_R2-2008803.docx) Minor corrections on TS 36.305 CATT CR Rel-16 36.305 16.2.0 0093 - F NR\_newRAT-Core

[R2-2008804](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5C38%20305_CR0035_%28Rel-16%29_R2-2008804.docx) Minor corrections on TS 38.305 CATT CR Rel-16 38.305 16.2.0 0035 - F NR\_newRAT-Core

[R2-2009000](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009000%20Remove%20the%20NOTE%20in%20architecture%20figure%20in%20TS%2038.305.docx) Remove the NOTE in architecture figure in TS 38.305 Intel Corporation CR Rel-16 38.305 16.2.0 0037 - F NR\_pos-Core

* Agreed

[R2-2010067](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010067%20UL%20SRS%20Periodic%20Activation%20Time.docx) Activation Time for Periodic UL SRS Transmission Ericsson discussion Rel-16

[R2-2010068](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010068%20CRSUPL.docx) Correction to SUPL support for NR positioning methods Ericsson CR Rel-16 38.305 16.2.0 0038 - F NR\_pos-Core

[R2-2010069](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010069%20TS%2038.305.docx) Correction of stage 2 positioning architecture aspects Ericsson CR Rel-16 38.305 16.2.0 0039 - F NR\_pos-Core

[R2-2010070](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010070%20TS%2038.305%20Aperiodic.docx) Missing Updates for Aperiodic UL SRS Support Ericsson CR Rel-16 38.305 16.2.0 0040 - F NR\_pos-Core

[R2-2010092](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010092_%28CR%2038305%20SUPL%20support%29.docx) SUPL support for NR positioning methods Qualcomm Incorporated CR Rel-16 38.305 16.2.0 0041 - F NR\_pos-Core

[R2-2010141](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010141%20REL-16%20CR%2038305%20ECID%20and%20NR%20ECID.docx) Corrections to E-CID and NR E-CID positioning Nokia, Nokia Shanghai Bell CR Rel-16 38.305 16.2.0 0043 - F NR\_pos-Core

[R2-2010266](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010266%20Miscellaneous%20corrections%20for%2038305.docx) Miscellaneous corrections for 38305 Huawei, HiSilicon CR Rel-16 38.305 16.2.0 0044 - F NR\_pos-Core

[R2-2010267](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010267%20Correction%20to%20stage2%20spec%20for%20SRS%20%28de-%29activaton.docx) Correction to stage2 spec for SRS (de-)activaton Huawei, HiSilicon CR Rel-16 38.305 16.2.0 0045 - F NR\_pos-Core

=> Revised in R2-2010992

[R2-2010992](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010992%20Correction%20to%20stage2%20spec%20for%20SRS%20%28de-%29activaton.docx) Correction to stage2 spec for SRS (de-)activaton Huawei, HiSilicon, Ericsson CR Rel-16 38.305 16.2.0 0045 1 F NR\_pos-Core

Intel and Nokia would like time to check.

* Handled in email as part of the summary discussion

[R2-2010268](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010268%20Correction%20to%20stage2%20of%20NR%20ECID.docx) Correction to stage2 of NR ECID Huawei, HiSilicon CR Rel-16 38.305 16.2.0 0046 - F NR\_pos-Core

[R2-2010573](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010573%20ECID.docx) Clarification on usage of ECID procedure Ericsson CR Rel-16 38.305 16.2.0 0049 - F NR\_pos-Core

[R2-2010574](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010574%20Deferred.docx) Updates on missing deferred location requests Ericsson CR Rel-16 38.305 16.2.0 0050 - F NR\_pos-Core

[R2-2010575](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010575%20loc%20format%20.docx) Alignment of the position information format with SA2 specification Ericsson CR Rel-16 38.305 16.2.0 0051 - F NR\_pos-Core

[R2-2010657](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010657%20Miscellaneous.docx) Miscellaneous correction for stage 2 Ericsson CR Rel-16 38.305 16.2.0 0052 - F NR\_pos-Core

Withdrawn/Not available

R2-2008805 Correction on the NOTE in architecture figure in TS 38.305 CATT CR Rel-16 38.305 16.2.0 0036 - F NR\_newRAT-Core Withdrawn

### 6.6.2 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).

Capabilities update

* [AT112-e][602][POS] Rel-16 positioning UE capabilities in RRC (Intel)

 Scope: Accommodate any needed updates to the capabilities, taking into account updates to the feature lists during the meeting.

 Intended outcome: Endorsable CR for merge into the capabilities mega CR

 Deadline: Friday 2020-11-13 0000 UTC

Summary document

[R2-2010709](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010709%20Summary%20for%20RRC.docx) Summary for RRC Corrections for Positioning Ericsson discussion

P1: Discussed under R2-2008806; to be handled in email.

P2: Ericsson clarify R2-2010991 is an attempt to resolve this issue. Nokia think we could merge the different proposals in some form but think R2-2010991 is confusing. To be handled by email.

P5: Huawei wonder if it is possible for SI messages with and without posSIB to overlap. Chair thinks the current text indicates they cannot. vivo wonder if we use the same SI-RNTI how they could be distinguished if they did overlap. Ericsson understand that this is why they do not overlap. Nokia do not see the need for a change.

* [AT112-e][604][POS] Positioning RRC proposals (Ericsson)

 Scope: Discuss and resolve proposals 1 and 2 from R2-2010709.

 Intended outcome: Agreeable CR

 Deadline: Tuesday 2020-11-10 1200 UTC

Proposal 1 RAN2 to agree the posSIB validity inclusion in RRC and review the CR for posSIB validity check provided in R2-2008806 by email discussion.

Proposal 2 RAN2 to provide correction for field description for fields (sfn-Offset and sfn-SSB-Offset) available in SSB-Configuration. The exact changes are captured via email discussion review.

Other contributions

[R2-2008806](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5C38.331_CR2014_%28Rel-16%29_R2-2008806.docx) Corrections on 38.331 to capture agreements of area scope for posSIB validity CATT,Ericsson CR Rel-16 38.331 16.2.0 2014 - F NR\_newRAT-Core

Huawei think this should not be done in RRC, because the value tag and expiration time are defined in LPP. Ericsson think we need some guidance in RRC, but they agree it would be good to avoid specifying cross-layer interactions. CATT think we agreed to reuse the existing area ID, and most companies felt it should be checked in RRC. Intel agree with the background mentioned by CATT and think we decided RRC was a suitable place to handle it. Huawei think there was no agreement to specify this in RRC, but could accept a CR to check it in LPP. Nokia recall that we discussed which layer checks the validity and agreed it was at AS, but they are not totally OK with the proposed text.

* Handled in email [604]

[R2-2008807](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5C38%20331_CR2015_%28Rel-16%29_R2-2008807.docx) Corrections on description of sfn-Offset and sfn0-Offset in SSB-Configuration in TS 38.331 CATT CR Rel-16 38.331 16.2.0 2015 - F NR\_newRAT-Core

[R2-2008808](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5C38%20331_CR2016_%28Rel-16%29_R2-2008808.docx) Correction on the missed description of sfn-SSB-Offset in SSB-Configuration in TS 38.331 CATT CR Rel-16 38.331 16.2.0 2016 - F NR\_newRAT-Core

[R2-2010071](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010071%20RRC%20Missing%20field%20.docx) Corrections of field descrption of sfn-Offset and sfn-SSB-Offset Ericsson CR Rel-16 38.331 16.2.0 2172 - F NR\_pos-Core

=> Revised in R2-2010991

[R2-2010991](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010991%20RRCfieldCorrec.docx) Corrections of field descrption of sfn-Offset and sfn-SSB-Offset Ericsson CR Rel-16 38.331 16.2.0 2172 1 F NR\_pos-Core

[R2-2010269](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010269%2038.331%20CR%20on%20SI%20window%20for%20positioning%20SI%20message.docx) CR on SI window for positioning SI message Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2196 - F NR\_pos-Core

* Not pursued

[R2-2010270](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010270%20Correction%20on%20posSRS%20configuration.docx) Correction on posSRS configuration Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2197 - F NR\_pos-Core

[R2-2010273](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010273%20Correction%20on%20posSIB%20broadcastStatus.doc) Correction on posSIB broadcastStatus Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2199 - F NR\_pos-Core

=> Agreed

### 6.6.3 LPP corrections

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

Summary document

[R2-2010975](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010975_%28Summary%20of%20AI%206.6.3%20LPP%20Corrections%29.docx) Summary of LPP corrections agenda item 6.6.3 Qualcomm Incorporated discussion

* [AT112-e][605][POS] LPP proposals (Qualcomm)

 Scope: Discuss and resolve the remaining proposals from R2-2010975: P1-P5, P7, P8.

 Intended outcome: Agreeable CR

 Deadline: Tuesday 2020-11-10 1200 UTC

Proposal 1: RAN2 to discuss and decide whether any specification changes are needed to clarify that a DL-PRS-ID can be reused across positioning frequency layers.

Proposal 2: RAN2 to discuss and decide if and how "band combination fallback" is introduced in LPP.

Proposal 3: RAN2 to discuss and decide whether the IEs NR-DL-PRS-ProcessingCapability and NR-DL-PRS-QCL-ProcessingCapability are provided in only one of the IEs NR-DL-TDOA-ProvideCapabilities, NR-DL-AoD-ProvideCapabilities, and NR-Multi-RTT-ProvideCapabilities, in the case of capabilities for multiple NR positioning methods are provided.

Proposal 4: RAN2 to discuss and decide whether the UE is required to provide updated UL SRS capabilities in case of UL CA band combination changes during an LPP session.

Proposal 5: RAN2 to discuss and decide in which RAN2 specification (TS 38.306 and/or TS 37.355) the content of the RAN1 LS in R2-2006103 should be captured.

Proposal 7: RAN2 to agree a correction is required and check the details of the CR in R2-2010263 [3].

Proposal 8: RAN2 to agree a correction is required and check the details of the CR in R2-2010264 [4].

Other contributions

[R2-2009042](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009042%20Discussion%20on%20whether%20PRS%20ID%20can%20be%20reused%20on%20different%20frequency%20layers.docx) Discussion on whether PRS ID can be reused on different frequency layers vivo Mobile Communication Co., discussion

[R2-2010093](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010093_%28CR%2037355%20Quality%20and%20Time%20Stamp%29.docx) Clarification of quality and time stamp for RSTD measurements Qualcomm Incorporated CR Rel-16 37.355 16.2.0 0274 - F NR\_pos-Core

Nokia think the other quality fields may need similar clarifications, but the proposal is agreeable.

CATT wonder what happens if the RSRP and TOA measurements do not happen at the same time. Without the CR, their understanding was that the timestamp is for the TOA measurement. Qualcomm also wondered this but came to the conclusion that they have to be from a single measurement operation, since there is only one timestamp; they understand that the RSRP is a side effect of the TOA measurement and the UE would not do two correlations. Samsung agree with the proposal. vivo wonder if the change should also apply to other positioning methods or only DL-TDOA. Qualcomm think it is clear for the other methods where there is only one measurement (whereas RSTD is a difference of two measurements).

* Agreed

[R2-2010263](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010263%20Correction%20on%20PRS%20configuration.doc) Correction on PRS configuration Huawei, HiSilicon CR Rel-16 37.355 16.2.0 0275 - F NR\_pos-Core

Qualcomm think this has aspects related to the DL-PRS-Id reuse across frequency layers.

* Handled in email [605]

[R2-2010264](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010264%20Correction%20on%20NR%20E-CID.doc) Correction on NR E-CID Huawei, HiSilicon CR Rel-16 37.355 16.2.0 0276 - F NR\_pos-Core

Ericsson think the CR is not needed. Qualcomm note there is some added text relative to LTE.

* Handled in email [605]

[R2-2010265](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010265%20LPP%20corrections%20on%20UE%20capability%20signaling.docx) LPP corrections on UE capability signaling Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

Not available/withdrawn

R2-2008809 Correction on sfn-SSB-Offset in NR-SSB-Config-r16 in TS 37.355 CATT CR Rel-16 37.355 16.2.0 0273 - F NR\_newRAT-Core Withdrawn

### 6.6.4 MAC corrections

[R2-2010271](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010271%20Correction%20on%20SP%20posSRS%20%28de-%29activation%20MAC%20CE.docx) Correction on SP posSRS (de-)activation MAC CE Huawei, HiSilicon CR Rel-16 38.321 16.2.0 0970 - F NR\_pos-Core

Qualcomm think the CR is NBC and the coversheet should reflect this in the impact analysis.

* Agreed with revised coversheet in R2-2010861.

[R2-2010066](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010066%20MAC%20Discussion%20paper.docx) SRS for Positioning transmission in Connected mode DRX Ericsson discussion Rel-16

Huawei think in the RAN1 spec, MIMO SRS and positioning SRS are captured together; they doubt if this is really needed. CATT have the same view as Huawei. Samsung also have the same understanding.

* Noted

### 6.6.5 Other

# 7 Rel-16 EUTRA Work Items

Essential corrections

## 7.6 LTE Positioning

(NavIC, LTE TEI16 Positioning)

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

# 8 Rel-17 NR Work Items

## 8.7 NR Sidelink relay SI

(FS\_NR\_SL\_relay; leading WG: RAN2; REL-17; WID: RP-201474)

Time budget: 1.5 TU

Tdoc Limitation: 5 tdocs

Email max expectation: 4 threads

### 8.7.1 Organizational

TR updates, rapporteur inputs, other organizational documents. Documents in this AI do not count towards the tdoc limitation.

Workplan

[R2-2008939](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008939%20-%20Work%20planning%20of%20R17%20SL%20relay.doc) Work planning of R17 SL relay OPPO Work Plan Rel-17 FS\_NR\_SL\_relay

Incoming LSs

[R2-2008760](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008760_S2-2006587.docx) LS on Direct Discovery and Relay in SA2 (S2-2006587; contact: Oppo) SA2 LS in Rel-17 FS\_5G\_ProSe To:RAN2 Cc:RAN1

[R2-2010693](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CDocs%5CR2-2010693.zip) LS on SA2 progress on UE-to-Network Relay and UE-to-UE Relay (S2-2007945; contact: OPPO) SA2 LS in Rel-17 FS\_5G\_ProSe To:RAN2, SA3

Other contributions

[R2-2008926](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008926%20%5BDraft%5D%20Reply%20LS%20on%20Direct%20Discovery%20and%20Relay.docx) [Draft] Reply LS on Direct Discovery and Relay CATT LS out Rel-17 5G\_V2X\_NRSL-Core To:SA2 Cc:RAN1

[R2-2010676](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010676%20-%20%5BDraft%5D%20Reply%20LS%20on%20Direct%20Discovery%20and%20Relay.docx) [Draft] Reply LS on Direct Discovery and Relay OPPO LS out Rel-17 FS\_NR\_SL\_relay To:SA2 Cc:RAN1

* [AT112-e][601][Relay] Status update to SA2 (OPPO)

 Scope: Generate a summary of RAN2 status on relaying for SA2

* Report status of both L2 and L3 relaying designs as well as architecture-independent aspects (including issues in R2-2008760), in order to coordinate with SA2 for reaching conclusions
* Capture any points where we assume SA2 will resolve an issue

 Intended outcome: Approvable LS

 Deadline: Friday 2020-11-13 0000 UTC

### 8.7.2 Scope requirements and scenarios

Refinements to the contents of the TR regarding high-level requirements and assumptions on supported scenarios.

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

Summary document

R2-2010984 Summary for AI\_8.7.2 Scope requirements and scenarios vivo discussion

Other contributions

[R2-2008779](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008779%20-%20Left%20issues%20on%20Scenarios%20for%20sidelink%20relay.docx) Left issues on Scenarios for sidelink relay OPPO discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008921](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008921%20Further%20Clarification%20on%20the%20Scenarios%20for%20NR%20Sidelink%20Relay.docx) Further Clarification on the Scenarios for NR Sidelink Relay CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009584](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009584_Further%20discussion%20%20on%20scope%20and%20Scenarios%20of%20SL%20relay.docx) Further discussion on scope and scenarios of SL relay vivo discussion Rel-17

[R2-2009693](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009693%20Coverage%20Extension%20Using%20Relays.doc) Coverage Extension using Relays Lenovo, Motorola Mobility discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009694](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009694%20QoS%20support%20for%20Relays.doc) QoS support when using Relays Lenovo, Motorola Mobility discussion FS\_NR\_SL\_relay

[R2-2010658](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010658%20Scope%20and%20scenarios%20for%20NR%20sidelink%20relay.docx) Scenarios for NR sidelink relay LG Electronics Inc. discussion Rel-17

### 8.7.3 Relaying Mechanisms and their characteristics

Start to populate the TR. Put on the table mechanisms, their characteristics at least with respect to aspects A-F for L2 and L3 relay etc.

#### 8.7.3.1 Protocol stacks and procedures

Including report of [Post111-e][627][Relay] Remaining issues on L2 architecture

Email discussion summary

[R2-2009122](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CDocs%5CR2-2009122.zip) Email Report of Post111-e 627 Relay Remaining issues on L2 architecture MediaTek Inc. discussion Rel-17 FS\_NR\_SL\_relay

Other contributions

[R2-2008777](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008777%20-%20Left%20issues%20on%20CP%20procedure%20for%20L2%20U2N%20Relay.docx) Left issues on CP procedure for L2 U2N Relay OPPO discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008922](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008922%20On-demand%20SI%20Delivery%20for%20Remote%20UE.docx) On-demand SI Delivery for Remote UE CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008962](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008962%20-%20Discussion%20on%20remaining%20issues%20of%20L3%20relay.doc) Discussion on remaining issues of L3 relay Qualcomm Incorporated discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008964](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008964%20-%20Discussion%20on%20remaining%20issues%20on%20L2%20relay.docx) Discussion on remaining issues of L2 relay Qualcomm Incorporated discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008966](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008966%20-%20RRC%20state%20and%20essential%20RRC%20procedures%20in%20L2%20U2N%20relay.doc) RRC state and essential RRC procedures in L2 U2N relay Qualcomm Incorporated discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008983](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008983_L2RelayOpenAspects_Intel.docx) Open aspects of L2 relaying Intel Corporation discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009030](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009030%20Discussion%20on%20remaining%20issues%20on%20L2%20Relay.doc) Discussion on remaining issues on L2 relay architecture ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009033](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009033%20Discussion%20on%20remaining%20issues%20of%20L3%20relay.doc) Discussion on Remaining issues on L3 relay ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009123](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009123.docx) Adaptation layer for PC5 at L2 UE-to-Network Relay MediaTek Inc. discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009124](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009124.docx) Overhead in N3IWF based L3 relaying architecture MediaTek Inc. discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009144](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009144.doc) Remaining issues on the adaptation layer for Layer-2 Relay Spreadtrum Communications discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009202](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009202%20%28R17%20SL%20Relay%20SI_A8731%20CP%20Aspects%29.doc) Control Plane Aspects for UE to NW Relays InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009203](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009203%20%28R17%20SL%20Relay%20SI_A8731%20Connection%20Establishment%29.doc) Connection Establishment and Maintenance for L2 Relays InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009206](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009206%20%28R17%20SL%20Relay%20SI%20AI8731%29.doc) Discussion on L2 Relay Architecture and QoS InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009230](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009230%20-%20RAN2%20impacts%20introduced%20by%20Layer%202%20SL%20relay.docx) RAN2 impacts introduced by Layer 2 SL relay Ericsson discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009302](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009302%20QoS.docx) QoS Control with Sidelink Relay Futurewei discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009525](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009525%20UE%20to%20UE%20relay%20data%20forwarding.doc) Discussion on data forwarding mechanisms for Layer 2 UE-to-UE Relay Apple discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009526](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009526%20Support%20of%20RRC_Inactive%20remote%20UE.doc) Discussion on RRC\_INACTIVE remote UE Apple discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009585](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009585_Open%20issues%20on%20Layer-2%20relay.doc) Open issues on Layer-2 relay vivo discussion Rel-17

[R2-2009660](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009660%20L2%20relaying%20open%20issues%20v2.doc) L2 relaying open issues Samsung Electronics GmbH discussion

[R2-2009661](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009661%20Need%20for%20relaying%20of%20on-demand%20SI%20v2.doc) Need for relaying of on-demand SI Samsung Electronics GmbH discussion

[R2-2009720](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009720-%20Discussion%20on%20L3%20UE-to-NW%20relay%20architecture.docx) Discussion on L3 UE-to-NW relay architecture Ericsson discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009891](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009891.doc) SL L2 architectrure Sony discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009901](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009901.doc) Protocol stack design for U2N relay and U2U relay case Lenovo, Motorola Mobility discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009939](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009939%20Discussion%20on%20L2%20based%20UE-to-Network.docx) Discussion on L2 based UE-to-Network Nokia, Nokia Shanghai Bell discussion FS\_NR\_SL\_relay

[R2-2010129](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010129%20Sidelink%20Relay%20Adaptation%20Layer%20Header.docx) Needed Information in Adaptation Layer Header for L2 UE-to-UE Relay Convida Wireless discussion Rel-17

[R2-2010344](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010344.doc) Remaining issues on protocol stacks and procedures for L2 relay Huawei, HiSilicon discussion Rel-17 FS\_NR\_SL\_relay

[R2-2010345](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010345.doc) NAS transmission and QoS management in L3 U2N relay Huawei, HiSilicon discussion Rel-17 FS\_NR\_SL\_relay

#### 8.7.3.2 Service continuity

Including report of [Post111-e][621][Relay] Service continuity

Email discussion summary

[R2-2010346](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010346%20Summary%20email%20discussion%20%5B621%5D%5BRelay%5D%20of%20Service%20continuity_final.doc) Summary email discussion [621][Relay] of Service continuity Huawei, HiSilicon report Rel-17 FS\_NR\_SL\_relay

Other contributions

[R2-2008780](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008780%20-%20Left%20issues%20on%20Service%20continuity%20for%20L2%20U2N%20relay.docx) Left issues on Service continuity for L2 U2N relay OPPO discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008923](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008923%20Further%20Clarification%20on%20the%20L2%20Service%20Continuity.docx) Further Clarification on the L2 Service Continuity CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008967](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008967%20-%20Remaining%20issues%20for%20mobility%20procedures%20of%20L2%20relay.docx) Remaining issues on the mobility procedures for L2 relay Qualcomm Incorporated discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009031](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009031%20Discussion%20on%20service%20continuity.doc) Discussion on Service continuity ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009068](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009068%20L3EnhancementsForFastPathSwitch.docx) L3 relay enhancements to improve path switching Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009125](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009125.docx) Service Continuity for L2 Relay and L3 Relay MediaTek Inc. discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009145](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009145.doc) Discussion on service continuity for Layer-2 UE-to-Network Relay Spreadtrum Communications discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009171](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009171%20Service%20continuity%20via%20L3%20U2N%20relay.doc) Service continuity via L3 UE-to-Network relaying Samsung Electronics discussion Rel-17

[R2-2009177](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009177.docx) Service Continuity Scenarios and AS-Layer Procedures Fraunhofer HHI, Fraunhofer IIS discussion Rel-17

[R2-2009271](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009271_ServiceContinuity_Intel.docx) Further details on Service Continuity for Relaying Intel Corporation discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009301](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009301%20service%20continuity.docx) Service Continuity with Sidelink Relay Futurewei discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009476](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009476%20Service%20continuity%20in%20SL%20relay.doc) Discussion on service continuity for layer 2 UE to NW relay Apple discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009586](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009586_Service%20continuity%20for%20L2%20and%20L3%20relay.docx) Service continuity for L2 and L3 relay vivo discussion Rel-17

[R2-2009721](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009721-%20Service%20continuity%20procedure%20and%20scenarios%20for%20sidelink%20relay.docx) Service continuity procedure and scenarios for sidelink relay Ericsson discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009938](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009938%20Service%20Continuity%20for%20UE2UE%20Relay.docx) Service Continuity for UE2UE Relay Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_SL\_relay

[R2-2010329](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010329-Clarification%20of%20remote%20UE%20mobility.doc) Clarification of remote UE mobility ETRI discussion Rel-17 FS\_NR\_SL\_relay

[R2-2010469](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010469.doc) Discussion on service continuity Xiaomi communications discussion

[R2-2010588](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010588%20Service%20continuity%20for%20SL%20relay.docx) Service continuity for SL relay LG Electronics Inc. discussion Rel-17 FS\_NR\_SL\_relay

[R2-2010659](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010659%20service%20continuity%20for%20Remote%20UE.DOCX) Service continuity for Remote UE LG Electronics Inc. discussion Rel-17

#### 8.7.3.3 Relay selection

Including report of [Post111-e][622][Relay] Relay selection and reselection

Email discussion summary

[R2-2009523](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009523%20Summary%20Report%20of%20%5BPost111-e%5D%5B622%5D%5BRelay%5D%20Relay%20selection%20and%20reselection%20%28rapporteur%29_final.doc) Summary Report of [Post111-e][622][Relay] Relay selection and reselection Apple discussion Rel-17 FS\_NR\_SL\_relay

Other contributions

[R2-2008924](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008924%20Further%20Discussion%20on%20NR%20Sidelink%20Relay%20Selection%20and%20Reselection.docx) Further Discussion on NR Sidelink Relay Selection and Reselection CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008987](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008987.docx) Further details on relay reselection Intel Corporation discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009029](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009029%20Discussion%20on%20relay%20initiation%20and%20relay%20%28re-%29selection.doc) Discussion on Relay initiation and (re-)selection ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009069](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009069%20RelaySelection.docx) Discussion on relay selection and reselection Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009148](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009148.doc) Discussion on relay selection and reselcetion Spreadtrum Communications discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009172](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009172%20Consideration%20on%20relay%20reselection%20criteria.doc) Consideration on relay reselection criteria Samsung Electronics discussion Rel-17

[R2-2009176](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009176.docx) Relay (re)selection enhancement MediaTek Inc. discussion Rel-17

[R2-2009205](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009205%20%28R17%20SL%20Relay%20SI%20A8733%20Relay%20selection%29.doc) Relay Selection and Reselection InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009229](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009229%20-%20Remaining%20aspects%20for%20relay%20selection%20and%20reselection.docx) Remaining aspects for relay selection and reselection Ericsson discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009588](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009588_SL-RSRP%20and%20SD-RSRP%20comparison%20and%20additional%20criterion%20for%20relay%20%28re-%29selection.doc) SL-RSRP and SD-RSRP comparioson and additional criterion for relay (re-)selection vivo discussion Rel-17

[R2-2009634](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009634.docx) Considerations on relay selection and reselection KT Corp. discussion

[R2-2009857](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009857%20Relay%20reselection%20in%20the%20failure%20case%20v1.0.doc) Relay reselection in the failure case Lenovo, Motorola Mobility discussion Rel-17

[R2-2009892](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009892.doc) SL Relay selection Sony discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009972](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009972%20NR%20Sidelink%20Relay%20%28Re-%29Selection%20Criterion%20and%20Procedure.docx) NR Sidelink Relay (Re-)Selection Criterion and Procedure Fraunhofer IIS, Fraunhofer HHI discussion Rel-17

[R2-2010005](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010005_relay_reselection.doc) Relay reselection based on discovery Kyocera discussion

[R2-2010347](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010347.docx) Remaining issues on relay selection and reselection Huawei, HiSilicon discussion Rel-17 FS\_NR\_SL\_relay

[R2-2010652](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010652%20PC5%20link%20failure%20handling%20for%20NR%20sidelink%20relay.docx) PC5 link failure handling for NR sidelink relay LG Electronics Inc. discussion Rel-17

#### 8.7.3.4 Other

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

[R2-2008778](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008778%20-%20Left%20issues%20on%20QoS%2C%20Security%20and%20L23%20comparison.docx) Left issues on QoS, Security and L23 comparison OPPO discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009650](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009650.docx) View on Paging Option 2 in L2 relay ITL discussion Rel-17

[R2-2009858](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009858%20Considerations%20on%20the%20UE-to-Network%20relay%20and%20UE-to-UE%20relay%20case%20v2.0.doc) Considerations on the UE-to-Network relay and UE-to-UE relay case Lenovo, Motorola Mobility discussion Rel-17

[R2-2010104](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010104_SLRelayRelease_Intel.docx) Release procedure for SL Relaying support Intel Corporation discussion Rel-17 FS\_NR\_SL\_relay

### 8.7.4 Discovery model and procedure for sidelink relaying

Including report of [Post111-e][623][Relay] Remaining issues on relay discovery

Email discussion summary

[R2-2008815](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008815%20Summary%20of%20%5BPost111-e%5D%5B623%5D%5BRelay%5DRemaining%20issues%20on%20relay%20discovery%20%28rapporteur%29.doc) Summary of [Post111-e][623][Relay]Remaining issues on relay discovery (rapporteur) OPPO discussion Rel-17 FS\_NR\_SL\_relay Revised

[R2-2010661](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010661%20Summary%20of%20%5BPost111-e%5D%5B623%5D%5BRelay%5DRemaining%20issues%20on%20relay%20discovery%20%28rapporteur%29.doc) Summary of [Post111-e][623][Relay]Remaining issues on relay discovery (rapporteur) OPPO discussion Rel-17 FS\_NR\_SL\_relay R2-2008815 Late

Other contributions

[R2-2008802](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008802%20Discussion%20on%20AS%20layer%20protocol%20of%20discovery%20message%20for%20SL%20relay.docx) Discussion on AS layer protocol of discovery message for SL relay OPPO discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008925](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008925%20Discussion%20on%20Discovery%20Message.docx) Discussion on discovery message CATT discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008965](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008965%20-%20Discussion%20on%20remaining%20issues%20of%20discovery%20and%20relay%20%28re%29selection.doc) Remaining issues on discovery and relay (re)selection Qualcomm Incorporated discussion Rel-17 FS\_NR\_SL\_relay

[R2-2008977](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008977.docx) Further details on SL discovery for relaying Intel Corporation discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009032](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009032%20Discussion%20on%20sidelink%20relay%20discovery.doc) Discussion on relay discovery and link management ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009149](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009149.doc) Discussion on remaining issues on relay discovery Spreadtrum Communications discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009173](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009173%20Sidelink%20relay%20discovery%20open%20issue.doc) Sidelink relay discovery open issue Samsung Electronics discussion Rel-17

[R2-2009204](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009204%20%28R17%20SL%20Relay%20SI%20A874%20Discovery%29.doc) Discovery Procedure for SL Relays InterDigital discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009228](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009228%20-%20Remaining%20aspects%20for%20discovery.docx) Remaining aspects for discovery Ericsson discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009524](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009524%20SL%20relay%20discovery_remaining_issues.doc) Discussion on remaining issues on NR Sidelink Relay discovery Apple discussion Rel-17 FS\_NR\_SL\_relay

[R2-2009587](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009587%20Remaining%20issues%20of%20sidelink%20relay%20discovery%20procedure.doc) Remaining issues of sidelink relay discovery procedure vivo discussion Rel-17

[R2-2009633](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009633.docx) Considerations on discovery for sidelink relay KT Corp. discussion

[R2-2009638](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009638%20Discussion%20on%20differentiation%20of%20discovery%20message.doc) Discussion on differentiation of discovery message SHARP Corporation discussion Rel-17

[R2-2009970](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009970%20NR%20SL%20Relaying%20Discovery.docx) NR Sidelink Relaying Discovery Fraunhofer IIS, Fraunhofer HHI discussion Rel-17

[R2-2009994](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009994_disc_pool.doc) Discovery resources for sidelink relaying Kyocera discussion

[R2-2010046](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010046%20Discussion%20on%20SL%20relay%20discovery%20model%20and%20procedure.docx) Discussion on relay discovery model and procedure Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_SL\_relay

[R2-2010331](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010331%20On%20relay%20discovery.docx) On relay discovery MediaTek Inc. discussion Rel-17 FS\_NR\_SL\_relay

[R2-2010348](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010348.docx) Remaining issues on relay discovery Huawei, HiSilicon discussion Rel-17 FS\_NR\_SL\_relay

[R2-2010349](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010349.docx) Discussion on the discovery aspects related to SA2 LS S2-2006587 Huawei, HiSilicon discussion Rel-17 FS\_NR\_SL\_relay

[R2-2010467](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010467.doc) Discussion on scenario regarding non SL relay capable gNB Xiaomi communications discussion

[R2-2010660](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010660%20Remaining%20issues%20on%20discovery%20for%20NR%20sidelink%20relay.docx) Remaining issues on discovery for NR sidelink relay LG Electronics Inc. discussion Rel-17

## 8.11 NR positioning enhancements SI

(FS\_NR\_pos\_enh; leading WG: RAN1; REL-17; WID: RP-202094)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

Email max expectation: 3 threads

### 8.11.1 Organizational

Rapporteur inputs and other organizational documents. Documents in this AI do not count towards the tdoc limitation.

Incoming LSs

[R2-2008707](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008707_R1-2007264.doc) LS on Latency of NR Positioning Protocols (R1-2007264; contact: Intel) RAN1 LS in Rel-17 FS\_NR\_pos\_enh To:RAN2 Cc:RAN3, SA2

Qualcomm note that the LS asks for end-to-end latency, not just of the positioning procedures (and the SID and SA1 requirements also talk about end-to-end); so in their view it is misleading to focus only on the positioning procedures. Nokia think this was discussed as part of the email discussion on latency after RAN2#111-e, and we decided to focus on the RAN2 protocol contribution to the delay. Ericsson agree with Nokia. Huawei have the same view and think the tasking for RAN2 is clear, but we can discuss further under the email discussion. Intel agree this was covered in the email discussion.

* Noted (will reply from the discussion of R2-2009001)

[R2-2008766](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008766_S6-200269.doc) LS on Requirements on positioning for UAS (S6-200269; contact: InterDigital)   SA6     LS in    Rel-17 FS\_UASAPP   To:SA1            Cc:SA2, RAN2

* Noted

TR maintenance

[R2-2010577](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010577%20TP%20for%20Positioning%20SI.docx) TP for TR 38.857 Study on NR Positioning Ericsson, Swift Navigation report Rel-17 38.857

[R2-2010576](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010576%20draft%20LS%20to%20capture%20TP.doc) draft LS to capture TP for TR 38.857 Ericsson LS out Rel-17 To:RAN1

Ericsson think we can wait for the next meeting to send an update.

Nokia think any related issues can be discussed under the integrity agenda item.

* Noted

### 8.11.2 Enhancements for commercial use cases

Scope and general discussion related to the RAN2 objective on enhancements to support high accuracy, low latency, network efficiency, and device efficiency for commercial use cases.

Including report of [Post111-e][625][POS] End-to-end latency analysis

This agenda item will use a summary document.

Email summary

[R2-2009001](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009001%20Report%20of%20625%20E2E%20latency%20v01.docx) Report of [Post111-e][625][POS] End-to-end latency analysis (Intel) Intel Corporation discussion Rel-17 FS\_NR\_pos\_enh

Discussion of P1-P3:

Qualcomm think it does not make sense to focus only on the positioning procedures. It would mean 0 ms latency for deferred MT-LR. They also think the RAN2 scope in this discussion has gotten a bit confused and we are making arbitrary distinctions between interfaces in our scope and out of our scope. They are concerned that we give misleading information if we claim latency numbers that only account for the positioning procedures. In particular, they think enhancements going beyond the positioning procedures should not be excluded.

Huawei have a comment on P1: If this is agreed, there is some overlap between the RAN1 and RAN2 analyses of latency, so they would prefer if RAN2 excludes this part. To Qualcomm’s comments, they think RAN1 have already shown what parts of the procedures RAN2 needs to analyse: from reception of PDSCH to transmission of PUSCH, for certain messages; and they don’t see that we need to cover anything outside that range.

Intel clarify that the reason the AMF-LMF interface has to be analysed is because it relates to transfer of LPP/NRPPa messages, whereas the GMLC and UDM interfaces transfer messages that are not in RAN2 scope. Regarding Huawei’s comment, Intel understand that we do not need to restrict ourselves to strictly exclude things that have been looked at by RAN1.

Nokia think lack of time for the SI is the big issue. They understand that RAN1 are focussing only on L1 latency, and we as the stage 2 owner could try to coordinate looking at all the signalling delays, but we would need a lot of time. They understand that we are looking at the interfaces that underly transport of LPP and NRPPa.

Qualcomm think there is no contradiction between RAN1 looking at L1 and RAN2 looking at end-to-end. They see not so much time effort to extrapolate from the conclusions of the email discussion to cover the end-to-end aspects, and think the SID calls for end-to-end. They think we should at least capture some guidance in the TR about what we have analysed, and wonder how we will evaluate enhancements such as idle/inactive without considering procedures outside the positioning procedures.

Ericsson agree with Intel and others that what we have set out to do is enough. They agree readers should be careful but think this is true anyway, as deployment and implementation aspects will also affect the latency.

CATT understand that the purpose of the latency analysis is to find enhancements to reduce the latency; they are fine with considering enhancements that go outside the bounds of the positioning procedures.

vivo agree with Qualcomm that RAN1 is asking for end-to-end latency, and think if no one takes responsibility for end-to-end latency we have no way to judge the enhancements.

Intel agree with Qualcomm that we should note clearly in the minutes or TR what we have analysed.

Agreements:

1: For latency analysis of Rel.16 solutions, RAN2 only consider the latency of positioning procedure, i.e. step 5 in MO-LR/step 12 in MT-LR (involving RRC, LPP, NRPPa, MAC). A note is added to the TR and in our response to RAN1 to clarify this is what we covered. We can clarify to RAN1 that more time would be needed for an end-to-end analysis.

2: For latency analysis of Rel.16 solutions, RAN2 only consider the latency caused by UE, gNB, AMF and LMF.

3: For latency analysis of Rel.16 solutions, RAN2 consider both UE-based and UE-assisted.

Handling of call flows in P4-P8:

Qualcomm note that the multi-RTT procedure is not in agreement with the stage 2; it takes DL and UL in sequence, and they think we should use the stage 2 flow as the baseline with some steps in parallel. Nokia think we need a separate document showing the call flows and latencies.

Intel indicate that they have updated the multi-RTT to account for the UL and DL measurements in parallel, and they wonder if Qualcomm are commenting on the latest version. Qualcomm find different numbers when checking the multi-RTT in the email discussion.

Call flows from P4-P8 are used as baseline in offline discussion.

Handling of tables in P9-P18:

Tables and contents from P9-P18 are used as baseline in offline discussion.

Qualcomm wonder if we will capture the results as a TP or just provide them to RAN1 for capturing. Intel suggest that we have a summary of the results and a separate TP. Nokia would like to see the reply LS and associated document first and then decide on a TP.

Ericsson would like to see the document aligned with an appropriate structure for the TR. Nokia think we should focus on the content and format it later considering the short time to send the LS. Intel agree with Nokia and understand that there will be a separate email discussion for a TP in due course.

* [AT112-e][606][POS] LS to RAN1 on positioning latency (Intel)

 Scope: Summarise the latency results and draft an LS to RAN1. Clarify that the attached results are a checkpoint that has not yet been endorsed as a TP.

 Intended outcome: Summary of latency results and agreeable LS with the summary attached

 Deadline: Thursday 2020-11-05 1200 UTC

Summary document

[R2-2010669](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010669%20Summary%20of%208.11.2%20Enhancements%20for%20commercial%20use%20cases.docx) Summary of 8.11.2 Enhancements for commercial use cases CATT discussion Rel-17 FS\_NR\_pos\_enh Late

Discussion of P2:

Qualcomm think we cannot simply skip the capability procedure, because the LMF needs it. They understand that deferred MT-LR addresses this issue by avoiding unnecessary sending of the capabilities. They see no benefit to storing the capabilities in the AMF since the LMF will still need to fetch them. Huawei have generally the same view: The LMF cannot blindly configure a UE, and they do not see storage in the AMF as necessary since anyway the LMF can keep the capability.

ZTE have the same view as Huawei and Qualcomm, and on P3 they think this may reduce network efficiency and is only applicable to RRC\_CONNECTED.

Intel think we should collect and clarify solutions before doing too much down-selection.

Latency enhancements to be discussed further by email.

* [AT112-e][607][POS] Gathering of latency enhancement solutions (CATT)

 Scope: Describe and discuss the proposed latency enhancements in a format suitable for developing into a TP.

 Intended outcome: Text proposal

 Deadline: Friday 2020-11-13 0000 UTC

Discussion of P8/P9:

Chair understands that RAN1 have agreed positioning support in RRC\_INACTIVE. CATT have the same understanding. Intel wonder about the relationship to SDT.

Nokia think the support for measurement in a particular state is more a RAN1 decision, and RAN2 do not need to agree on it; we can focus on reporting enhancements.

Huawei have the same view as Nokia, and think there is a concern about SDT since it only carries MO user-plane data, so it may not support our uses. But they think we have the motivation to resolve these issues and the question should be discussed in this WI.

Qualcomm understand the RAN1 agreement also considers UL and UL+DL methods. They agree measurement is not really in RAN2 scope, but configuration and reporting are. On SDT, they think CIoT resolved this same basic issue in Rel-16. They also see a bit of a disconnect since the state transition aspects are outside the sequences that we agreed to analyse for latency.

CATT think support of idle/inactive is not primarily for latency reduction but for network efficiency. The reason for proposing DL-PRS as the first priority in RRC\_INACTIVE is that for DL-PRS measurement, RAN1 already agreed to support it, and it is valuable for RAN2 to evaluate how to support the DL measurement report in inactive.

Ericsson think we are broadening the scope of the discussion a bit by involving SDT and related subject; do we believe that positioning will drive work to enhance these features? If so, we should involve additional people.

ZTE agree with CATT and think the main advantage of idle/inactive is for network efficiency and maybe power saving. About SDT, they think a lot of aspects of this subject still need to be discussed and they would prefer that we discuss this after SDT have progressed.

Qualcomm think we had similar overlap for on-demand SI in connected mode, and we should observe what SDT are doing and see if it’s useful for us. They consider RRC\_INACTIVE as clearly an enhancement for latency, since measurement reports can be piggybacked on RACH and state transitions can be avoided—but this is outside the positioning procedures that we agreed to consider for latency evaluation.

Huawei think we should also consider if the LCS request in an MO-LR can be transmitted in idle/inactive. They do not see relevance to latency reduction, because the state transitions could be avoided by staying in RRC\_CONNECTED all the time. They point out that the CIoT solution is for LTE and we would need to look at the impact for supporting CP data transmission.

CATT think we should clarify that support of positioning in idle/inactive does not mean all procedures would be supported. Considering the time budget they would prefer to focus first on DL-PRS case, but also consider other potential solutions besides SDT.

Ericsson are not sure that positioning reports are “small” in the sense of SDT. We can discuss SDT but they think we do not need to single it out. They agree with Huawei that this is not for latency reduction.

Intel report that the RAN1 agreement is broad (all positioning methods, UE-based+UE-assisted) and also includes e.g. AD delivery, but does not include the details of how to enable transfer of the signalling; this is all for the WI phase.

Agreements:

Positioning measurement reporting (including location estimates for UE-based) should be supported in RRC\_INACTIVE; involvement of SDT is FFS. Reporting of specific measurements is pending RAN1 decision.

Discussion of P14/P15:

Ericsson think P15 needs some discussion as an LMF may not be able to fulfil the requirement for every UE.

Intel think RAN1 already agreed P14 and we would just be aligning with them.

Intel and CATT clarify RAN1 have not agreed on UE-based multi-RTT. Nokia understand that they took agreements that imply UE-based multi-RTT would be supported. Qualcomm have the same understanding as Nokia.

Ericsson think we need to discuss the feasibility of the signalling.

Agreements on on-demand PRS

RAN2 study on-demand PRS mechanism for DL-based, UL&DL-based methods (e.g. multi-RTT), and UE-Based and UE-assisted positioning methods in this SI.

* [Post112-e][608][POS] Support of on-demand PRS (Ericsson)

 Scope: Discuss potential solutions for on-demand PRS: signalling aspects, which node requests the PRS, which node the request is directed to. Rapporteur is asked to provide update on RAN1 agreements.

 Intended outcome: Report to next meeting

 Deadline: Long

* [Post112-e][609][POS] Positioning support in RRC\_IDLE/RRC\_INACTIVE (Huawei)

 Scope: Discuss potential solutions for positioning support in RRC\_IDLE/RRC\_INACTIVE, distinguishing clearly between what can be supported in idle and what can be supported in inactive. Rapporteur is asked to provide update on RAN1 agreements.

 Intended outcome: Report to next meeting

 Deadline: Long

Other contributions

[R2-2008775](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008775%20-%20Discussion%20on%20on-demand%20DL-PRS.doc) Discussion on on-demand DL-PRS OPPO discussion Rel-17 FS\_NR\_pos\_enh

[R2-2008776](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008776%20-%20Positioning%20in%20RRC_IDLE%20and%20RRC_INACTIVE%20state.docx) Positioning in RRC\_IDLE and RRC\_INACTIVE state OPPO discussion Rel-17 FS\_NR\_pos\_enh

[R2-2008810](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008810%20Further%20discussion%20on%20ehancements%20for%20commercial%20use%20cases.doc) Further discussion on ehancements for commercial use cases CATT discussion Rel-17 FS\_NR\_pos\_enh

[R2-2008885](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008885%20%28R17%20NR%20POS%20A8112%29.doc) Discussion on Positioning in Idle/Inactive mode InterDigital, Inc. discussion Rel-17 FS\_NR\_pos\_enh

[R2-2008886](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008886%20%28R17%20NR%20POS%20A8112%29.doc) Discussion on End-to-End Latency Reduction for DL/UL Positioning InterDigital, Inc. discussion Rel-17 FS\_NR\_pos\_enh

[R2-2008887](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008887%20%28R17%20NR%20POS%20A8112%29.doc) Discussion on On Demand Reference Signals for Positioning InterDigital, Inc. discussion Rel-17 FS\_NR\_pos\_enh

[R2-2009002](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009002%20Support%20of%20positioning%20in%20idle%26inactive%20mode.docx) Support of positioning in idle/inactive mode Intel Corporation discussion Rel-17

[R2-2009023](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009023%20Solution%20directions%20to%20reduce%20end-to-end%20latency.docx) Solution directions to reduce end-to-end latency Intel Corporation discussion Rel-17 FS\_NR\_pos\_enh

[R2-2009039](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009039%20Discussion%20on%20potential%20positioning%20enhancement.docx) Discussion on positioning enhancement vivo Mobile Communication Co., discussion FS\_NR\_pos\_enh

[R2-2009040](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009040%20Procedure%20of%20on%20demand%20PRS.docx) Procedure of on-demand PRS vivo Mobile Communication Co., discussion FS\_NR\_pos\_enh

[R2-2009041](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009041%20Positioning%20measurement%20transport%20in%20RRC%20idle%20and%20inactive.docx) Positioning in RRC idle and inactive state vivo Mobile Communication Co., discussion FS\_NR\_pos\_enh

[R2-2009137](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009137-Discussion%20on%20positioning%20enhancements%20for%20commercial%20use%20cases.docx) Discussion on positioning enhancements for commercial use cases Spreadtrum Communications discussion Rel-17 FS\_NR\_pos\_enh

[R2-2009286](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009286_MovementModel.docx) Reporting movement models Fraunhofer IIS discussion R2-2007238 Revised

[R2-2009287](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009287_SituationalQuality.docx) Reporting the situational quality of RAT and RAT-independent technologies Fraunhofer IIS, Fraunhofer HHI discussion R2-2007246

[R2-2009574](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009574%20Discussion%20on%20PRS%20enhancements.doc) Discussion on PRS enhancements Beijing Xiaomi Electronics discussion Rel-17

[R2-2009577](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009577%20Positioning%20enhancements%20on%20RRC%20idle%20inactive%20UE%20and%20latency%20reduction.doc) Positioning enhancements on RRC idle/inactive UE and latency reduction Beijing Xiaomi Electronics discussion Rel-17

[R2-2009897](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009897_Pos_Tech_Final.docx) Considerations on potential positioning enhancements Sony discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010072](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010072%20Enhancements.docx) Enhancements for commercial use cases Ericsson discussion Rel-17

[R2-2010095](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010095_%28Positioning%20Enhancements%29.docx) NR Positioning Enhancements Qualcomm Incorporated discussion

[R2-2010096](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010096_%28PosLatency%29.docx) NR Positioning Latency Analysis and Enhancements Qualcomm Incorporated discussion

[R2-2010097](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010097_%28On-Demand%20PRS%29.docx) On-Demand PRS Qualcomm Incorporated discussion

[R2-2010131](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010131_MovementModel.docx) Reporting movement models Fraunhofer IIS, Fraunhofer HHI discussion R2-2009286

[R2-2010161](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010161%20On-demand%20PRS.docx) On-demand PRS transmission and dynamic PRS resource allocation Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_pos\_enh R2-2007128

[R2-2010276](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010276%20Discussion%20on%20IDLE%20INACTIVE%20pos%20on-demand%20PRS%20and%20latency%20analysis.docx) Discussion on IDLE INACTIVE pos, on-demand PRS and latency analysis Huawei, HiSilicon discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010277](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010277%20Discussion%20on%20R17%20positioning%20enhancement.docx) Discussion on R17 positioning enhancement Huawei, HiSilicon discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010472](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010472_IDLE_INACTIVE_mode_positioning.docx) Disucssion on IDLE/INACTIVE mode positioning ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010473](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010473%20Discussion%20on%20on%20demand%20PRS.docx) Discussion on on-demand PRS ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010627](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010627%20Discussion%20on%20enhancement%20for%20commercial%20use%20cases.doc) Discussion on enhancement for commercial use cases Samsung R&D Institute UK discussion

[R2-2010648](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010648%20Support%20for%20positioning%20in%20idle%20inactive%20mode.doc) Support for positioning in idle/inactive mode Samsung R&D Institute UK discussion

### 8.11.3 Integrity and reliability of assistance data and position information

#### 8.11.3.1 KPIs and use cases

Including report of [Post111-e][626][POS] Integrity use cases and specification impacts

Email discussion summary

[R2-2009129](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009129%20-%20Email%20Summary%20%5BPost111-e%5D%5B626%5D%20%28Swift%29.docx) Summary of [Post111-e][626][POS] Email Discussion on integrity use cases and specification impacts Swift Navigation discussion

Other contributions

[R2-2008811](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008811%20Discussion%20on%20integrity%20service%20level.docx) Discussion on integrity service level CATT discussion Rel-17 FS\_NR\_pos\_enh

[R2-2009760](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009760%20Pos_integrity_IIoT.docx) Positioning integrity for Industrial IoT use cases Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_pos\_enh

[R2-2009898](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009898__Pos_Integrity_Final.docx) Discussion on Integrity of positioning information Sony discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010074](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010074%20Industrial%20IoT%20use-case.docx) Industrial IoT use-case Ericsson discussion Rel-17

[R2-2010090](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010090_IIoT_Positioning_Integrity.docx) Integrity and reliability for IIoT positioning use cases Convida Wireless discussion Rel-17 38.857 FS\_NR\_pos\_enh

[R2-2010098](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010098%20Discussion%20on%20including%20PL%20Availability%20as%20an%20additional%20integrity%20KPI.docx) Discussion on including PL Availability as an additional integrity KPI ESA discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010475](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010475%20Discussion%20on%20integrity%26error%20source%20factor%20transmission.docx) Discussion on integrity&error source factor transmission ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_pos\_enh

#### 8.11.3.2 Error sources threat models occurrence rates and failure modes

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

Summary document

[R2-2010700](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010700%20summary%20of%20AI%208.11.3.2.docx) Summary of 8.11.3.2 Error sources threat models occurrence rates and failure modes Intel Corporation discussion Rel-17 FS\_NR\_pos\_enh

Other contributions

[R2-2008812](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008812%20Discussion%20on%20error%20sources%20threat%20models%20occurrence%20rates%20and%20failure%20modes.docx) Discussion on error sources, threat models, occurrence rates and failure modes CATT discussion Rel-17 FS\_NR\_pos\_enh

[R2-2009282](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009282_Integrity.docx) Error sources, threat models, occurrence rates and failure modes Fraunhofer IIS discussion Revised

[R2-2009331](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009331%20GNSS%20Integrity%20Error%20Sources.docx) Discussion on GNSS Integrity Errors Swift Navigation, Ericsson, Intel Corporation, u-blox discussion

[R2-2010061](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010061%20Text%20Proposal%20on%20GNSS%20position%20integrity%20error%20sources.docx) Text Proposal on GNSS position integrity error sources ESA discussion Rel-17 38.857 FS\_NR\_pos\_enh

[R2-2010073](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010073%20error%20sources.docx) GNSS position integrity error sources Ericsson discussion Rel-17

[R2-2010135](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010135_Integrity.docx) Error sources, threat models, occurrence rates and failure modes Fraunhofer IIS, Fraunhofer HHI discussion R2-2009282

[R2-2010278](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010278%20Discussion%20on%20threat%20models%20and%20failure%20modes.docx) Discussion on threat models and failure modes Huawei, HiSilicon discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010642](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010642%20Introduction%20of%20Integrity%20monitoring%20for%20GNSS%20and%20its%20error.doc) Introduction of Integrity monitoring for GNSS and its error Samsung R&D Institute UK discussion

#### 8.11.3.3 Methodologies for network-assisted and UE-assisted integrity

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

Summary document

[R2-2010675](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010675_%28NR%20POS%20A81133%29_Summary_Integrity_Methodologies.docx) Summary of 8.11.3.3: Methodologies for network-assisted and UE-assisted integrity InterDigital discussion Rel-17 FS\_NR\_pos\_enh

Other contributions

[R2-2008774](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008774%20-%20Discussion%20on%20Methodology%20for%20Integrity.docx) Discussion on methodology for integrity OPPO discussion Rel-17 FS\_NR\_pos\_enh

[R2-2008813](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008813%20Discussion%20on%20methodologies%20for%20network-assisted%20and%20UE-assisted%20integrity.docx) Discussion on methodologies for network-assisted and UE-assisted integrity CATT discussion Rel-17 FS\_NR\_pos\_enh

[R2-2008888](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2008888%20%28R17%20NR%20POS%20A81133%29.doc) Discussion on methodologies for network-assisted and UE-assisted integrity InterDigital, Inc. discussion Rel-17 FS\_NR\_pos\_enh

[R2-2009003](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009003%20Methodologies%20for%20integrity.docx) Methodologies for network-assisted and UE-assisted integrity Intel Corporation, Swift Navigation discussion Rel-17

[R2-2009043](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009043%20integrity%20signaling%20and%20procedures.docx) Integrity signaling and procedures vivo Mobile Communication Co., discussion

[R2-2009138](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009138-Discussion%20on%20integrity%20methodologies%20for%20network-assisted%20and%20UE-assisted%20integrity.docx) Discussion on integrity methodologies for network-assisted and UE-assisted integrity Spreadtrum Communications discussion Rel-17 FS\_NR\_pos\_enh

[R2-2009333](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009333%20GNSS%20Integrity%20Methods.docx) TP for GNSS Integrity Methodologies Swift Navigation, Ericsson, Intel Corporation, u-blox discussion

[R2-2009530](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009530%20NR%20Positioning%20Integrity%20methodology.doc) Discussion on Positioning Integrity Apple discussion Rel-17 FS\_NR\_pos\_enh

[R2-2009578](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009578%20Discussion%20on%20methodologies%20for%20positioning%20integrity.doc) Discussion on methodologies for positioning integrity Beijing Xiaomi Electronics discussion Rel-17

[R2-2009761](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2009761%20Pos_integrity_Signalling.docx) Signalling for Positioning Integrity Support Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010075](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010075%20methodologies.docx) Methodologies for network-assisted and UE-assisted integrity Ericsson discussion Rel-17

[R2-2010279](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010279%20Discussion%20for%20network-assisted%20and%20UE-assisted%20integrity.docx) Discussion for network-assisted and UE-assisted integrity Huawei, HiSilicon discussion Rel-17 FS\_NR\_pos\_enh

[R2-2010474](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202011%20-%20RAN2_112-e%2C%20Online%5CExtracts%5CR2-2010474%20Discussion%20of%20the%20methodologies%20for%20network-assisted%20and%20UE-assisted%20integrity.docx) Discussion of the methodologies for network-assisted and UE-assisted integrity ZTE Corporation, Sanechips discussion Rel-17 FS\_NR\_pos\_enh