3GPP TSG-RAN WG2 Meeting #109bis-e R2-200xyzw

**Online, 20 April – 30 April 2020**

Source: Session Chair (MediaTek)

Title: Report of session on Rel-15 and -16 LTE and NR positioning

# 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.

* [AT109bis-e][600] Organisational Nathan - Positioning (MediaTek)

Status: Started

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

 Intended outcome: Well-informed participants

 Deadline: Thursday 2020-04-30 1000 UTC

* [AT109bis-e][601][POS] LPP ASN.1 issue gathering and easy agreements (Qualcomm)

Status: Started

 Scope: Collect the issues from the contributions in agenda item 6.8.2.4, excluding R2-2003143 and R2-2003144

 Intended outcome: Endorsed baseline CR starting from R2-2003350 (R2-2003981) and list of open issues (R2-2003982) for continuing ASN.1 review after this meeting

 Deadline: Comments by Monday 2020-04-27 1000 UTC; final output documents by Wednesday 2020-04-29 1000 UTC

* [AT109bis-e][602][POS] LPP ASN.1 structural issues (Ericsson)

Status: Started

 Scope: Initial discussion on the issues raised in R2-2003144

 Intended outcome: Report of potential easy agreements and remaining open issues (R2-2003983) suitable for capture in the LPP ASN.1 issue list

 Deadline: Comments by Tuesday 2020-04-28 1000 UTC; output document Wednesday 2020-04-29 1000 UTC

* [AT109bis-e][603][POS] Introduction of NavIC Keplerian set IE (Reliance Jio)

Status: Started

 Scope: Review of the CR submitted in R2-2003821 to introduce the definition of NavModel-NavIC-KeplerianSet

 Intended outcome: Agreed-in-principle CR

 Deadline: Wednesday 2020-04-29 1000 UTC

* [AT109bis-e][604][POS] LS on support of non-periodic SRS and SSB configuration (Intel)

Status: Started

 Scope: Draft an LS to RAN1/RAN3 in reply to R2-1914310, indicating that:

* the RAN2 signalling can currently configure aperiodic SRS for positioning, but we need to know if it the specification effort is feasible to complete from RAN3 perspective.
* Activation/deactivation of SP SRS is recommended by LMF to gNB with the final activation/deactivation by gNB, and NRPPa signalling for SRS triggering is needed.
* For the assistance information in NRPPa for SSB configuration for UL-only positioning, it should include both TF configuration and SSB index in the NRPPa message.

 Intended outcome: Approved LS

 Deadline: Wednesday 2020-04-22 1200 UTC

* [AT109bis-e][605][POS] Checking of draft CRs on SSB configuration (Huawei)

Status: Started

 Scope: Check the draft CRs in R2-2003055 and R2-2003056.

 Intended outcome: Agreed in principle CRs in R2-2003985 and R2-2003986

 Deadline: Wednesday 2020-04-22 1200 UTC

# 4 EUTRA corrections Rel-15 and earlier

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

No documents should be submitted to 4. Please submit to 4.x

NOTE For R2 109e for R15 and earlier releases, only documents on important and urgent issues shall be submitted and treated. No text enhancements without behavioural or functional change.

## 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 WI: New Radio (NR) Access Technology

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

NOTE For R2 109bis-e for R15 and earlier releases, only documents on important and urgent issues shall be submitted and treated. No text enhancements without behavioural or functional change.

## 5.2 Stage 2

### 5.2.3 Positioning

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.

[R2-2002913](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002913%20Clarification%20on%20UE%20Positioning%20Architecture%20in%2038%20305%20for%20Rel-15.doc) Clarification on UE Positioning Architecture in 38.305 for Rel-15 CATT draftCR Rel-15 38.305 15.5.0 B NR\_newRAT-Core

[R2-2003479](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003479%20Correction%20to%20periodic%20reporting.docx) Correction to periodic reporting Huawei, HiSilicon CR Rel-15 37.355 15.0.0 0254 - F NR\_newRAT-Core

Qualcomm understand that this was intentional and values ri0-25 and ri0-5 really do map to 1 s and 2 s.

* Not pursued

[R2-2003482](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003482%20Correction%20to%20periodic%20reporting.docx) Correction to periodic reporting Huawei, HiSilicon CR Rel-16 37.355 16.0.0 0255 - A NR\_newRAT-Core

## 6.8 NR Positioning Support

(NR\_pos-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Jun 20; WID: [RP-](file:///C%3A%5CData%5C3GPP%5CTSGR%5CTSGR_84%5Cdocs%5CRP-191156.zip)200218, SR: RP-200217). Documents in this agenda item will be handled in a break out session

Time budget: 1 TU

### 6.8.1 Organisational

Including incoming LSs, rapporteur inputs, etc.

[R2-2002520](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002520_R1-2001483.doc) LS on outcome of email discussions on aperiodic SRS for positioning configuration from RAN1#100e (R1-2001483; contact: Ericsson) RAN1 LS in Rel-16 NR\_pos To:RAN2

Ericsson understand that this issue has been raised in the ASN.1 review. Huawei confirm there is a CR.

* Noted

[R2-2002529](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002529_R4-2002280.doc) LS on gNB measurements report mapping for NR Positioning (R4-2002280; contact: Ericsson) RAN4 LS in Rel-16 NR\_pos-Core To:RAN2, RAN3 Cc:RAN1

* Noted

[R2-2003316](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003316%20Discussion%20on%20capabilities%20for%20NR%20positioning.docx) Discussion on capabilities for NR positioning Intel Corporation discussion Rel-16 NR\_pos-Core Late

Intel understand that we may need to wait for RAN1 before treating this.

Come back later in the week when RAN1 have discussed.

[R2-2003317](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003317%20Introduction%20of%20UE%20positioning%20capabilities.DOCX) Introduction of UE positioning capabilities Intel Corporation draftCR Rel-16 37.355 16.0.0 NR\_pos-Core Late

### 6.8.2 Architecture and protocol aspects

No documents should be submitted to 6.8.2. Please submit to 6.8.2.x.

#### 6.8.2.1 Stage 2

Including impact to 36.305 and 38.305. This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on submitted tdocs).

Including outcome of email discussion [Post109e#30][NR/Pos] Non-periodic SRS for positioning (Huawei)

Including outcome of email discussion [Post109e#31][NR/Pos] Details of spatial relation for positioning (Huawei)

Contributions on issues already resolved in email discussions [Post109e#30] and [Post109e#31] are discouraged.

Tdoc limitation: 1 tdoc

Non-periodic SRS

[R2-2003068](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003068%20%5BPost109e-30%5D%5BPos%5D%20Non-periodic%20SRS%20for%20positioning%20%28Huawei%29.docx) [Post109e-30][NRPos] Non-periodic SRS for positioning (Huawei) Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

Proposal1: RAN2 should discuss whether aperiodic SRS is supported for R16 positioning.

Qualcomm understand that RAN1 agreed to support this and it is already in our specs; the only thing missing is the RAN3 support.

Intel agree from RAN2 perspective the only impact is stage 2 for activation/deactivation, but they see support of aperiodic SRS for neighbour cells as difficult.

Huawei agree with Qualcomm that from RAN2 perspective there is nothing missing, but they also understand that RAN1 left it to RAN2 to evaluate if it is feasible. We should guarantee it is feasible if we want to support it.

Ericsson think RAN1 should have confirmed feasibility, and think there would be capability signalling. They see no reason why we couldn’t support aperiodic in the signalling.

Nokia think we should be focussing on finalising the release and this is more of a functional issue, so it should perhaps be postponed to next release if there is disagreement on the feasibility. We also need to take RAN3 effort into account.

Qualcomm agree with Ericsson and think there is no RAN2 spec impact. If we do not support it in Rel-16 we would need to remove it from our specs. They agree there is NRPPa work to be done. The complexity is in network implementation.

Intel understand that RAN1 agreed to support aperiodic SRS to the serving gNB, and had some discussion of the difficulty of supporting it for neighbouring cells, and this is why they asked RAN2/3 to confirm feasibility. Suggest we could send an LS to RAN3 asking about their intention to support it.

Ericsson think the complexity for support at the neighbour cell is only for FR2.

Huawei think we cannot report that it is feasible from RAN2 perspective. They see big differences between aperiodic and SP cases due to the lack of stringent requirements on the transmission timing for the aperiodic case.

Nokia have the same concern as Huawei; they think that by signalling start time we can take the timing into account, but there are questions about whether the neighbour cell can receive it. They also wonder if RAN3 can complete their work in time. Intel confirm there is some concern about RAN3 completion.

vivo agree there are problems with neighbour cells, but they think for TRPs under the same serving cell it can be used and at least we should support aperiodic SRS for this case.

Qualcomm think the NRPPa procedures do not distinguish between serving and neighbour cells, and restricting it to the serving cell would be more signalling work.

OPPO think we could send an LS to RAN3, but they understand that from RAN2 perspective we should not indicate that the end-to-end feature is feasible.

* Send an LS to RAN3, indicating that the RAN2 signalling can currently configure aperiodic SRS for positioning, but we need to know if it the specification effort is feasible to complete from RAN3 perspective. Intel think this could be done in a reply to the previous RAN1 LS. (R2-1914310)
* [AT109bis-e][604][POS] LS on support of non-periodic SRS and SSB configuration (Intel)

 Scope: Draft an LS to RAN1/RAN3 in reply to R2-1914310, indicating that:

* the RAN2 signalling can currently configure aperiodic SRS for positioning, but we need to know if it the specification effort is feasible to complete from RAN3 perspective.
* Activation/deactivation of SP SRS is recommended by LMF to gNB with the final activation/deactivation by gNB, and NRPPa signalling for SRS triggering is needed.
* For the assistance information in NRPPa for SSB configuration for UL-only positioning, it should include both TF configuration and SSB index in the NRPPa message.

 Intended outcome: Approved LS

 Deadline: Wednesday 2020-04-22 1200 UTC

Proposal2: RAN2 should discuss how aperiodic SRS should be supported if it is agreed to be supported.

* Deferred

Proposal3: The Activation/Deactivation of the SP SRS and triggering of AP SRS is recommended by LMF to gNB; and the activation/deactivation MAC CE or triggering DCI are sent by gNB to UE.

Huawei think we can agree to the SP aspect.

Agreements:

The Activation/Deactivation of the SP SRS is recommended by LMF to gNB; and the activation/deactivation MAC CE is sent by gNB to UE (no stage 3 impact for RAN2).

Leave the design of NRPPa message for SRS triggering to RAN3 while capture the purpose and content of the message at stage 2 level in RAN2.

[R2-2003054](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003054%20DraftLS_RAN3_non-periodicSRSPositioning.docx) DraftLS\_RAN3\_non-periodicSRSPositioning Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

Spatial relation and SSB configuration

[R2-2003069](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003069%20%5BPost109e-31%5D%5BPos%5D%20Details%20of%20spatial%20relation%20for%20positioning%20%28Huawei%29.docx) [Post109e-31][Pos] Details of spatial relation for positioning (Huawei) Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

P1:

Ericsson think in some cases, as when the UE is moving, the speed of the update is a concern.

Qualcomm think “decided by the gNB” is better terminology than “determined by gNB”. Ericsson want to clarify the gNB sets the configuration and can diverge from the LMF’s recommendation. Qualcomm agree with this and think the LMF then needs to be informed. Nokia wonder if the LMF can take any action based on this information. Qualcomm understand it affects which TRPs will be involved and the LMF needs to send the SRS configuration to the TRPs.

CATT think if the serving gNB does not know about the neighbouring gNBs, the LMF can help set the spatial relation so the neighbouring gNBs can collect the SRS, and this is why the LMF recommendation is needed. ZTE think in this case it’s not right to say that the gNB “decides” since all it can do is follow the LMF’s recommendation; they would prefer to say it “chooses”. Qualcomm and Huawei think this is a matter of gNB implementation.

P5:

OPPO wonder if this is intended for the UL-only methods. Huawei confirm this was the intention.

P6:

Qualcomm agree we should keep the previous agreement but think this wording is unclear. They are not sure why RRC index is required.

Agreements:

Spatial relation of SRS is recommended by the LMF and decided by the gNB. It is up to gNB implementation whether to follow the LMF recommendation. The gNB informs the LMF of its decision.

UE does not report RSRP of DL-PRS in RRC procedures for SRS configuration.

 Keep the current SSB configuration for the DL-only positioning in the LPP message.

Keep the current configuration of SSB in RRC for UL-only positioning. This means that the RRC configuration can carry the full SSB configuration or SSB index and PCI.

For the assistance information in NRPPa for SSB configuration for UL-only positioning, it should include both TF configuration and SSB index in the NRPPa message.

* Include the RAN3-related decisions above in the LS from discussion #604.

[R2-2003055](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003055%20DraftCR%20for%20SSB%20configuration%20in%20LPP%20spec.docx) DraftCR for SSB configuration in LPP spec Huawei, HiSilicon draftCR Rel-16 37.355 16.0.0 NR\_pos-Core

[R2-2003056](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003056%20DraftCR%20for%20SSB%20configuration%20in%20RRC%20spec.docx) DraftCR for SSB configuration in RRC spec Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core

[R2-2003057](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003057%20DraftLS%20to%20RAN3%20on%20Spatial%20relations%20for%20positioning.docx) DraftLS\_RAN3\_On Spatial relations for positioning Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

* [AT109bis-e][605][POS] Checking of draft CRs on SSB configuration (Huawei)

 Scope: Check the draft CRs in R2-2003055 and R2-2003056.

 Intended outcome: Agreed in principle CRs in R2-2003985 and R2-2003986

 Deadline: Wednesday 2020-04-22 1200 UTC

Summary document

[R2-2003620](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003620%20Summary%20of%20AI%206_8_2_1.docx) Summary document for agenda item 6.8.2.1 - NR Positioning Stage 2 Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_pos-Core Late

The following documents will not be individually treated

[R2-2002914](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002914%20Clarification%20on%20UE%20Positioning%20Architecture%20in%2038%20305%20for%20Rel-16.doc) Clarification on UE Positioning Architecture in 38.305 for Rel-16 CATT draftCR Rel-16 38.305 16.0.0 B NR\_pos-Core

[R2-2002939](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002939.docx) Discussion on reusing Rel-15 SRS for Multi-RTT ZTE Corporation discussion

[R2-2003060](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003060%20Text%20proposal%20to%20stage-2%20specification.docx) Text proposal to stage-2 specification Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

[R2-2003348](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003348_%2838305%20corrections%29.docx) Various Corrections to NR Positioning Qualcomm Incorporated discussion

[R2-2003396](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003396%20Text%20proposal%20to%20clarify%20the%20meaning%20of%20GNSS.docx) Text Proposal to clarify the meaning of GNSS term ESA, Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_pos-Core

[R2-2003731](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003731%20non-periodic%20SRS%20for%20positioning.docx) On supporting of non-periodic SRS for positioning Samsung R&D Institute UK discussion

#### 6.8.2.2 RRC

Including impact to 36.331 and 38.331. This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting.

Tdoc limitation: 1 tdoc

Summary document

[R2-2003769](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003769%20Summary%20of%20Agenda%20Item%206.8.2.2%20for%20RRC.DOCX) Summary of agenda item 6.8.2.2 for RRC Huawei discussion Rel-16 NR\_pos-Core

The following documents will not be individually treated

[R2-2002598](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002598.docx) Broadcast of additional assistance data NextNav, AT&T, FirstNet, Intel, Polaris Wireless CR Rel-16 38.331 16.0.0 1508 - C NR\_pos, NR\_pos-Core

[R2-2002617](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002617%20Discussion%20on%20gap%20configuration%20and%20request%20for%20NR%20positionin.docx) Discussion on GAP configuration and request for NR positioning vivo discussion Rel-16 NR\_pos-Core

[R2-2003059](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003059%20DraftCR%20on%20LocationMeasurementIndication.docx) DraftCR on LocationMeasurementIndication Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core

[R2-2003136](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003136%20Recommendation.docx) Recommendation message from LMF to gNB for SRS configuration Ericsson discussion Rel-16

[R2-2003137](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003137%20UE%20Capability%20SRS.docx) UL SRS UE Capability Ericsson discussion

[R2-2003729](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003729%20SSB%20configuration.docx) SSB configuration for DL-/UL-only method in RRC Samsung R&D Institute UK discussion

#### 6.8.2.3 LPP

This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting. Note that documents on specific ASN.1 issues should be submitted to AI 6.8.2.4.

Tdoc limitation: 1 tdoc

Summary document

[R2-2003783](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003783_%28Summary%20of%206.8.2.3%20LPP%29.docx) Summary of LPP agenda item 6.8.2.3 Qualcomm Incorporated discussion Rel-16 NR\_pos-Core

The following documents will not be individually treated

[R2-2002938](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002938.docx) Discussion on additional path reporting ZTE Corporation discussion

[R2-2003061](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003061%20Remaining%20issues%20with%20LPP.docx) Remaining issues with LPP Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

[R2-2003130](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003130%20Measurement%20Reporting.docx) Measurement Reporting for UE based positioning Ericsson discussion Rel-16

* Revised in R2-2003811

[R2-2003811](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003811%20Measurement%20Reporting.docx) Measurement Reporting for UE based positioning Ericsson, Deutsche Telekom discussion Rel-16

=> Revised in R2-2003822

[R2-2003822](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003822%20Measurement%20Reporting.docx) Measurement Reporting for UE based positioning Ericsson, Deutsche Telekom discussion Rel-16 NR\_pos-Core

[R2-2003318](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003318%20Handling%20on%20TRP-ID.docx) Handling on TRP-ID Intel Corporation discussion Rel-16 NR\_pos-Core

[R2-2003730](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003730%20RxTxTimeDiff%20in%20LPP.docx) UE Rx – Tx time difference definition in LPP Samsung R&D Institute UK discussion

#### 6.8.2.4 LPP ASN.1 issues

Any issues related only to the details of ASN.1 in 37.355. CRs should not be submitted to this agenda item except by the specification rapporteur.

The ASN.1 review process for LPP will proceed from company contributions in this meeting. Issues should be submitted under this agenda item and will be collected by the specification rapporteur. The review process will proceed by email after this meeting with issues to be concluded at RAN2#110-e.

* [AT109bis-e][601][POS] LPP ASN.1 issue gathering and easy agreements (Qualcomm)

 Scope: Collect the issues from the contributions in agenda item 6.8.2.4, excluding R2-2003143 and R2-2003144

 Intended outcome: Endorsed baseline CR starting from R2-2003350 (R2-2003981) and list of open issues (R2-2003982) for continuing ASN.1 review after this meeting

 Deadline: Wednesday 2020-04-29 1000 UTC

* [AT109bis-e][602][POS] LPP ASN.1 structural issues (Ericsson)

 Scope: Initial discussion on the issues raised in R2-2003144

 Intended outcome: Report of potential easy agreements and remaining open issues (R2-2003983) suitable for capture in the LPP ASN.1 issue list

 Deadline: Comments by Tuesday 2020-04-28 1000 UTC; output document Wednesday 2020-04-29 1000 UTC

[R2-2002915](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002915%20Clarification%20on%20SFN0-Offset%20and%20DL-AoD%20report%20in%20LPP%20ASN.1.doc) Clarification on SFN0-Offset and DL-AoD report in LPP ASN.1 CATT draftCR Rel-16 37.355 16.0.0 B NR\_pos-Core

[R2-2003066](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003066%20DraftCR%20for%20NR-DL-PRS-Config.docx) DraftCR for NR-DL-PRS-Config Huawei, HiSilicon draftCR Rel-16 37.355 16.0.0 NR\_pos-Core

[R2-2003067](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003067%20Miscellaneous%20Corrections%20to%20LPP%20ASN.1.docx) Miscellaneous Corrections to LPP ASN.1 Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

[R2-2003143](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003143%20Overhead.docx) Overhead in current structure Ericsson discussion Rel-16

[R2-2003144](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003144%20Important%20LPP%20structural%20aspects.docx) Important LPP structural aspects Ericsson discussion Rel-16

[R2-2003349](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003349_%28LPP%20Issues%29.docx) Various Corrections to NR Positioning Qualcomm Incorporated discussion

[R2-2003350](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CDocs%5CR2-2003350.zip) LPP clean-up Qualcomm Incorporated discussion Rel-16 NR\_pos-Core Late

[R2-2003781](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003781%20%20CR%2037.355%20Corrections%20to%20the%20introduction%20of%20NR%20positioning.docx) CR 37.355 V16.0.0, Corrections to the introduction of NR positioning Ericsson CR Rel-16 37.355 16.0.0 0256 - F NR\_pos-Core

#### 6.8.2.5 MAC

Including impact to 38.321.

Tdoc limitation: 1 tdoc

LCID/eLCID

[R2-2003135](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003135%20MAC%20CE.docx) Change LCID to eLCID for SP Positioning SRS Activation/Deactivation MAC CE Ericsson CR Rel-16 38.321 16.0.0 0720 - F NR\_pos-Core

[R2-2003062](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003062%20Correction%20to%20SP-SRS%20%28de-%29activation%20MAC%20CE.docx) Correction to SP SRS actication deactivation MAC CE Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 NR\_pos-Core

DRX

[R2-2002618](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002618%20Discussion%20on%20the%20impact%20of%20DRX%20on%20SRS%20for%20NR%20positioning.docx) Discussion on the impact of DRX on SRS for NR positioning vivo discussion Rel-16 NR\_pos-Core

Other

[R2-2003063](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003063%20Runnnig%20CR%20to%20MAC%20spec%20for%20R16%20Positioning.docx) Runnnig CR to MAC spec for R16 Positioning Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 NR\_pos-Core

=> Revised in R2-2003768

[R2-2003768](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003768%20Runnnig%20CR%20to%20MAC%20spec%20for%20R16%20Positioning.docx) Running CR to MAC spec for R16 Positioning Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 NR\_pos-Core

#### 6.8.2.6 Broadcast assistance data

This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting.

Tdoc limitation: 1 tdoc

Summary document

[R2-2003607](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003607%20Summary%20for%20Broadcast%20Assistance%20Data%28Agenda%206.8.2.6%29.doc) Summary for Broadcast of Assistance Data CATT discussion Late

The following documents will not be individually treated

[R2-2002916](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2002916.doc) Summary of the agreement and left issues on Broadcast Assistance Data CATT discussion Rel-16 38.331 NR\_pos-Core

[R2-2003058](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003058%20DraftCR%20for%20on-demand%20SI%20request%20for%20positioning%20in%20IDLE%20and%20INACTIVE.docx) DraftCR for on-demand SI request for positioning Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core

[R2-2003132](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003132%20unicast%20tag.docx) On the need of unicast tag for positioning si-BroadcastStatus Ericsson discussion Rel-16

* Revised in R2-2003810

[R2-2003810](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003810%20unicast%20tag.docx) On the need of unicast tag for positioning si-BroadcastStatus Ericsson, Deutsche Telekom discussion Rel-16

Withdrawn/Not available

R2-2003140 On Relevance of Broadcast Ericsson discussion Rel-16 Withdrawn

#### 6.8.2.7 UE-based positioning

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on submitted tdocs).

Tdoc limitation: 1 tdoc

[R2-2003064](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003064%20Discussion%20on%20UE-based%20positioning.docx) Discussion on UE-based positioning Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

[R2-2003145](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003145%20Remaining%20issues%20UE-based.docx) Remaining issues with NR RAT dependent UE-based positioning Ericsson discussion Rel-16

### 6.8.3 Other

Tdoc limitation: 1 tdoc

R2-2003065 Discussion on UL-ECID Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

[R2-2003376](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003376%20UE%20rxtx.docx) On UE RxTx Measurements Ericsson discussion Rel-16

## 6.20 NR TEI16 enhancements

Small Technical Enhancements to NR. TEI should be predominantly within a single WG and fully completed within the same quarter in all affected WGs. RAN2 impact of RAN1/4-led TEI shall be limited to RRC signalling of configuration parameters and UE capabilities (no MAC impact, no RRC procedural impact, etc). Please also see [RP-191602](file:///C%3A%5CData%5C3GPP%5CTSGR%5CTSGR_84%5Cdocs%5CRP-191602.zip) endorsed at RAN#84. Please submit to 6.20.x.

NOTE that proponent companies are responsible to ensure that correct CRs are provided in all groups for proposals that have impact in >1 working group.

Time budget: 1 TU

Tdoc Limitation: 2 tdocs. NOTE for TEI, the tdoc limitation applies to new proposals, not to open proposals since previous meeting(s)

### 6.20.1 RAN2 led TEI16 enhancements - Control plane related

#### 6.20.1.1 Open / ongoing proposals

[R2-2003142](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003142%20Transfer%20of%20unicast.docx) Transfer of unicast RS observations with GNSS integer ambiguity level information Ericsson

Qualcomm understand that this is a new proposal not connected to the previously agreed CR, and more justification is needed. Ericsson consider that it would be useful to inform the difference between stations to the UE, and think this was previously discussed for LTE. Qualcomm think this proposal deviates from the RTCM signalling and the benefit is not clearly shown. Nokia think we are trying to close Rel-16 and this proposal comes quite late. Intel have a similar view.

* Noted

Proposal 1 Define signalling to enable the UE to translate its integer ambiguity solution associated to a current reference station to an integer solution associated to a new reference station

Proposal 2 Introduce the text proposal in Appendix A into the running LPP CR

# 7 Rel-16 LTE Work Items

Documents in these agenda items will be handled in break out sessions

## 7.7 Support of Indian Navigation Satellite System NavIC

(LCS\_NAVIC; leading WG: RAN2; REL-16; started: Sept 19; target; March-20; WID: RP-192350)

Time budget: 0 TU Final agreement of CRs is expected

This item is 100%

[R2-2003821](file:///C%3A%5CUsers%5Cmtk16923%5CDocuments%5C3GPP%20Meetings%5C202004%20-%20RAN2_109bis-e%2C%20Online%5CExtracts%5CR2-2003821_%20Update%20missed%20out%20definition%20for%20Information%20Element%20NavModel-NavIC-KeplerianSet.docx) Update missed out definition for Information Element NavModel-NavIC-KeplerianSet Reliance Jio CR Rel-16 37.355 16.0.0 0257 - F LCS\_NAVIC-Core

* [AT109bis-e][603][POS] Introduction of NavIC Keplerian set IE (Reliance Jio)

 Scope: Review of the CR submitted in R2-2003821 to introduce the definition of NavModel-NavIC-KeplerianSet

 Intended outcome: Agreed-in-principle CR

 Deadline: Wednesday 2020-04-29 1000 UTC