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

Electronic Meeting, May 9 – 20, 2022

**Agenda item:** 6.11.1 / 6.11.2.8

**Source:** Qualcomm Incorporated

**Title:** [Post118-e][603][POS] 37.355 positioning CR

**Document for:**  Discussion

# 1. Introduction

This document summarizes the following email discussion:

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

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

Intended outcome: Agreed CR

Deadline: Short (for RP)

##### References:

[1] R2-2205828, "Summary of LPP Updates and Open Issues".

[2] R2-2205829, "LPP Updates".

[3] R2-2206326, "Rel-17 LPP RIL".

[4] R2-2206327, "Rel-17 LPP ASN1 Review File".

[5] R2-2206328, "LPP Updates and ASN.1 Review".

[6] R2-2206247, "LPP Updates".

[7] R2-2206472, "Updated RAN1 UE features list for Rel-17 NR after RAN1 #109-e Week1", RAN1.

[8] R2-2206396, "37.355 CR for the positioning capabilities", Intel Corporation.

# 2. Discussion

The following updates to R2-2206247 have been made:

9. Update of RAN1 capabilities according to [AT118-e][627][POS] and R2-2206472

Deleted *ppw-durationOfPRS-Processing-r17*, FG 27-3-3 Component-2, since in [ ] in R2-2206472

*supportedDL-PRS-ProcessingSamples-RRC-Inactive-r17* is moved under *NR-DL-PRS-ProcessingCapability-r16* (instead of *PRS-ProcessingCapabilityPerBand-r16* (per UE))

maxMeasInstances-r17 is set to 256

maxCellIDsPerArea-r17 is set to 256

maxNrOfAreas-r17 is set to 16

maxTxTEG-Sets-r17 is set to 256

Deleted the Note with the Protection Level definition (moved to Stage 2)

Added *absoluteFrequencyPointA* and *offsetToPointA* to *NR-SRS-TxTEG-Element*

FFS, TBD, Editor's Notes deleted

Please provide your comments on "**Draft-R2-2205847\_(CR 37355 LPP Updates)\_v03.docx**" located in the same folder as this discussion document in the Table below.

|  |  |  |
| --- | --- | --- |
| Company | LPP Section / IE | Comments |
| Huawei, HiSilicon | *CommonIEsRequestLocationInformation* | ***scheduledLocatioTime***  typo=> location  [Rap: Thanks. Fixed in \_v3a.] |
|  | *LOS-NLOS-IndicatorGranularity2* | If we have *LOS-NLOS-IndicatorGranularity2, we may not need to have LOS-NLOS-IndicatorGranularity1? The overhead is not that large*  [Rap: I think it is clearer if we keep the *LOS-NLOS-IndicatorGranularity1*. It will be confusing if a location request includes the "both" code-point. I.e., would require additional field description and probably UE internal error handling.  However, the question is do we need the granularity/type in *nr-los-nlos-IndicatorRequest-r17* at all?  Given that we have added:  "NOTE: If the requested type or granularity in *nr-los-nlos-IndicatorRequest* is not possible, the target device may provide a different type and granularity for the estimated *LOS-NLOS-Indicator."*  the request could also be a simple BOOLEAN…? Then we don't need the IEs E *LOS-NLOS-IndicatorGranularity1* and *LOS-NLOS-IndicatorType1.*  ] |
|  | NR-DL-PRS-ExpectedAoD-or-AoA | NR-DL-PRS-ExpectedAoD-or-AoA-r17 ::= CHOICE {  expectedAoD-r17 SEQUENCE {  expectedDL-AzimuthAoD-r17 INTEGER (0..359),  expectedDL-AzimuthAoD-Unc-r17 INTEGER (0..60),  expectedDL-ZenithAoD-r17 INTEGER (0..180),  expectedDL-ZenithAoD-Unc-r17 INTEGER (0..30)  },  expectedAoA-r17 SEQUENCE {  expectedDL-AzimuthAoA-r17 INTEGER (0..359),  expectedDL-AzimuthAoA-Unc-r17 INTEGER (0..60),  expectedDL-ZenithAoA-r17 INTEGER (0..180),  expectedDL-ZenithAoA-Unc-r17 INTEGER (0..30)  }  }  RAN1 LS indicates that the uncertainty field can be optional as in R1-2205619  **Question 2**: Whether the uncertainty field for expected AoD (expected-DL-Azimuth-AoD-Unc and expected-DL-Zenith-AoD-Unc) and expected AoA (expected-DL-Azimuth-AoA-Unc and expected-DL-Zenith-AoA-Unc) can be optional?  **RAN1 Answer**: RAN1 assumes that the uncertainty field for the expected AoD (expected-DL-Azimuth-AoD-Unc and expected-DL-Zenith-AoD-Unc) and expected AoA (expected-DL-Azimuth-AoA-Unc and expected-DL-Zenith-AoA-Unc) can be optional under the condition that omitting the field means maximum uncertainty.  [Rap:.Is the suggestion to add OPTIONAL to the uncertainty fields? This would require up to 256 x 4 = 1024 bits just to indicate max uncertainty…Why can't the NW not simply set the uncertainty to max value if the uncertainty is not known…? I.e., this RAN1 agreement looks useless/obvious…and seems covered by existing ASN. Instead of "omitting the field means maximum uncertainty" the field can be present with max uncertainty…] |
|  | BeamPowerElement | We should mention in the field description that the nr-dl-prs-RelativePower and nr-dl-prs-RelativePowerFine that the UE shall ignore these two fields when received for the first element  [Rap: I don't think it should be ignored (strictly speaking). It is set by the NW to (normalized) value 1 (0dB) and all additional values are relative to the first one. Maybe we can clarify:  "The first *BeamPowerElement* in this list provides the peak power for this angle and is defined as 0dB power; i.e., the first value is set to '0' by the location server."] |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |