**3GPP TSG-RAN WG2 Meeting #125bisR2-240xxxx**

**Changsha, China, April 15th – 19th, 2024**

**Agenda item:** 7.2.4

**Source:** CATT

**Title:** [AT125bis][406][POS] Remaining LPP ASN.1 proposals (CATT)

**Document for:** Discussion and Agreement

# 1 Introduction

* [AT125bis][406][POS] Remaining LPP ASN.1 proposals (CATT)

 Scope: F2F offline to briefly check the proposed ASN.1 changes to LPP and determine if some of them are essential and agreeable.

 Intended outcome: Report to Thursday CB session

 Schedule: 1000-1100 Wednesday 2024-04-17 in Brk3 [to be confirmed]

 Deadline: Thursday 2024-04-18 1000 CST

This is to discuss the issues proposed in the following contributions.

1. R[2-2402556](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2402556.zip) Correction on RSCP measurement info in PRU DL info   vivo      draftCR            Rel-18 37.355 18.1.0  F   FS\_NR\_pos\_enh2
2. R[2-2402998](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2402998.zip) LPP Stage 3 Open Issue - CPP            Lenovo   discussion       Rel-18
3. R[2-2403501](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403501.zip) Corrections to NR-PRU-DL-Info IE        Nokia   discussion   Rel-18 37.355 NR\_pos\_enh2-Core
4. R[2-2403502](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403502.zip) Request for carrier phase measurement or joint measurement and clarification for time window configuration  Nokia   discussion       Rel-18 37.355 NR\_pos\_enh2-Core
5. R[2-2403540](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403540.zip) LPP RIL issue    Ericsson          discussion       Rel-18
6. R[2-2403191](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403191.zip) LPP Open Issues: PRU Operation and DL-PRS–DRX Alignment   Qualcomm Incorporated         discussion

# 2 Discussion

## 2.1 R[2-2402556](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2402556.zip) Correction on RSCP measurement info in PRU DL info

According to contribution R[2-2402556](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2402556.zip) [1], it is stated that, in TS 38.214, the RSCP/RSCPD measurements are always sent along with the legacy measurements, however in LPP spec, the RSCP-MeasInfo can be provided independently. The RSCP/RSCPD measurement info is already included in the NR-DL-TDOA-SignalMeasurementInformation, the nr-PRU-RSCP-MeasInfo in NR-PRU-DL-Info can be deleted. The TP is given as following.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 6.4.3 Common NR Positioning Information Elements< omitted> *NR-PRU-DL-Info*The IE *NR-PRU-DL-Info* is used by the location server to provide the carrier phase measurements with associated measurements and additional information reported by a PRU for UE-based DL-TDOA to a target UE.-- ASN1STARTNR-PRU-DL-Info-r18 ::= SEQUENCE { nr-PRU-LocationInfo-r18 LocationCoordinates OPTIONAL, -- Need ON nr-PRU-DL-TDOA-MeasInfo-r18 NR-DL-TDOA-SignalMeasurementInformation-r16 OPTIONAL, -- Need ON nr-PRU-DL-AoD-MeasInfo-r18 NR-DL-AoD-SignalMeasurementInformation-r16 OPTIONAL, -- Need ON  ...}-- ASN1STOP

| ***NR-PRU-DL-Info* field descriptions** |
| --- |
| ***nr-PRU-LocationInfo***This field provides the location coordinates of the PRU. |
| ***nr-PRU-DL-TDOA-MeasInfo***This field specifies the list of carrier phase measurement RSCPD together with the other measurement information in DL-TDOA by the PRU. |
| ***nr-PRU-DL-AoD-MeasInfo***This field specifies the list of other measurement information in DL-AoD by the PRU. |
| This field specifies the  |

 |

**[Rapporteur]**:

There is no RSCP report in NR-DL-TDOA-SignalMeasurementInformation in existing LPP actually. According to RAN1 LS, RSCPD is reported in DL-TDOA and RSCP is reported in Multi-RTT.

**[Comments]**:

**[Conclusion]**:

## 2.2 R[2-2402998](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2402998.zip) Error Causes Related to Carrier Phase Positioning-RSCP and RSCPD Measurements

In contribution R[2-2402998](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2402998.zip) [2], it is stated that there is no mechanism to enable the UE to report any error causes to the location server with respect to RSCP or RSCPD measurements. Two options are given as following.

|  |
| --- |
| **Proposal 1: Introduce location server and target device error causes for Carrier phase positioning based on one of the following Options:*** **Option 1: Carrier phase positioning location server error causes and target device error causes are merged into legacy DL-TDOA and Multi-RTT location server error causes and target device error causes, respectively (Option 1 TP provided).**
* **Option 2: Separate carrier phase positioning location server error causes and target device error causes are introduced (Option 2 TP provided).**
 |

The TPs of two options can be found here:



**[Rapporteur]**:

Carrier phase positioning measurement is reported together with RSTD or UE Rx-Tx time different measurement. The motivation to introduce the error source on RSCP and RSCPD Measurements should be discussed at first.

- If it is necessary to introduce these error causes,

- Further discuss these two options of TPs if necessary.

**[Comments]**:

**[Conclusion]**:

## 2.3 R[2-2403501](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403501.zip) Corrections to NR-PRU-DL-Info IE

In contribution R[2-2403501](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403501.zip) [3], it is stated that only RSTD, PRS-RSRP and PRS-RSRPP associated with RSCPD received from the PRU in a DL-TDOA measurement report and only PRS-RSRP and PRS-RSRPP associated with RSCP received from the PRU in a Multi-RTT measurement report can be forwarded by the LMF to the target UE. And *NR-PRU-DL-Info* IE is specific to carrier phase positioning. R[2-2403501](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403501.zip) mentioned that RAN1 did not intend for LMF to forward to the target UE the legacy measurements received from the PRU in a DL-AoD measurement report.

|  |
| --- |
| Q8) For UE-based carrier phase positioning, RAN1 agreement says the LMF forwards the DL carrier phase measurement reported by a PRU, with additional information of the same PRU to a target UE in the positioning assistance data. Regarding the forwarded measurement, does the LMF forward only the carrier phase measurement or also the legacy measurement associated with the carrier phase measurement? Also, how often does the LMF have to forward the positioning assistance data containing PRU measurement (and additional information of the same PRU) to the target UE i.e., is this supposed to be a periodic provisioning of assistance data from LMF to target UE? Can the UE send a request to the LMF to initiate the periodic provisioning of assistance data?Answer for Q8) The LMF can forward the carrier phase measurements together with the legacy measurement associated with the carrier phase measurement. * Note1: there is no consensus in RAN1 that the LMF can forward UE Rx-Tx time difference measurement.
* Note2: carrier phase measurements include both RSCP and RSCPD

Both one time (aperiodic) and periodic provision of PRU carrier phase measurements should be supported, which could be requested by the UE. |

From the perspective of LMF forwarding of measurements to target UE as position calculation assistance (in the *NR-PRU-DL-Info* IE) the legacy measurement in answer to Q8 above meant only the PRS-RSRP and PRS-RSRPP that is reported by the UE in a measurement report in which the RSCPD or RSCP is reported i.e., *NR-DL-TDOA-SignalMeasurementInformation* IE and *NR-Multi-RTT-SignalMeasurementInformation* IE. This is reflected well in TS 38.214v18.2.0 (2024-03) as shown below:

|  |
| --- |
| The UE may be provided with [*nr-PruInformation-Ue-based-DL-CPP* ] which contains DL RSCP/RSCPD measurements together with DL RSTD, DL PRS-RSRP, and/or DL PRS-RSRPP measurement(s) associated with the RSCP/RSCPD measurements performed by a positioning reference unit (PRU) [20, TS 38.305] the timestamps associated with the measurements, and the location information of the PRU.  |

**Proposal 1**: Remove the field *nr-PRU-DL-AoD-MeasInfo-r18* from *NR-PRU-DL-Info-r18* IE.

**Proposal 2**: Update the *NR-PRU-RSCP-MeasurementInformation-r18* IE to allow forwarding of PRS-RSRP (nr*-DL-PRS-RSRP-Result-r18*/*nr-DL-PRS-RSRP-ResultDiff-r18*) and PRS-RSRPP (*nr-DL-PRS-FirstPathRSRP-Result-r18*/*nr-DL-PRS-FirstPathRSRP-ResultDiff-r18*) from LMF to target UE.

**[Rapporteur]**:

Discuss whether the RAN1 did not intend for LMF to forward to the target UE the legacy measurements received from the PRU in a DL-AoD measurement report at first. Discuss if further clarification from RAN1 is required or not.

**[Comments]**:

**[Conclusion]**:

## 2.4 R[2-2403502](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403502.zip) nr-RequestedMeasurements and jointMeasurementsReq

In contribution R[2-2403502](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403502.zip) [4], it is stated that the control signalling *jointMeasurementsReq-r18* is not appropriate to be included in a bitmap field that is used to request a specific DL-TDOA measurement quantity. The *jointMeasurementsReq-r18* should be a separate new optional field in *NR-DL-TDOA-RequestLocationInformation* IE and *NR-Multi-RTT- RequestLocationInformation* IE. The same correction in R2-2403190 was agreed during the online.

Agreements:

TPs from R[2-2403190](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403190.zip) are agreeable in principle and can be taken into the rapporteur CR discussion. The corresponding RILs go to Agreed.

DL-AoD aspects will not be captured until we have a reply from RAN1; the existing DL-AoD part can be removed pending the reply.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| – *NR-DL-TDOA-RequestLocationInformation*The IE *NR-DL-TDOA-RequestLocationInformation* is used by the location server to request NR DL-TDOA location measurements from a target device.-- ASN1STARTNR-DL-TDOA-RequestLocationInformation-r16 ::= SEQUENCE { nr-DL-PRS-RstdMeasurementInfoRequest-r16 ENUMERATED { true } OPTIONAL,-- Need ON nr-RequestedMeasurements-r16 BIT STRING { prsrsrpReq (0), firstPathRsrpReq-r17 (1), prsRscpdReq-r18 (2) } (SIZE(1..8)), nr-AssistanceAvailability-r16 BOOLEAN, nr-DL-TDOA-ReportConfig-r16 NR-DL-TDOA-ReportConfig-r16 OPTIONAL, -- Need ON additionalPaths-r16 ENUMERATED { requested } OPTIONAL, -- Need ON ..., [[ nr-UE-RxTEG-Request-r17 ENUMERATED { requested } OPTIONAL, -- Need ON nr-los-nlos-IndicatorRequest-r17 SEQUENCE { type-r17 LOS-NLOS-IndicatorType1-r17, granularity-r17 LOS-NLOS-IndicatorGranularity1-r17, ... } OPTIONAL, -- Need ON additionalPathsExt-r17 ENUMERATED { requested } OPTIONAL, -- Need ON additionalPathsDL-PRS-RSRP-Request-r17 ENUMERATED { requested } OPTIONAL, -- Need ON multiMeasInSameReport-r17 ENUMERATED { requested } OPTIONAL -- Need ON ]], [[ jointMeasurementsReq-r18 ENUMERATED { requested } OPTIONAL, -- Need ON nr-DL-PRS-JointMeasurementRequestedPFL-List-r18 SEQUENCE (SIZE (2..3)) OF INTEGER (0..nrMaxFreqLayers-1-r16) OPTIONAL, -- Need ON nr-DL-PRS-RxHoppingRequest-r18 SEQUENCE { nr-DL-PRS-RxHoppingTotalBandwidth-r18 CHOICE { fr1 ENUMERATED {mhz40, mhz50, mhz80, mhz100}, fr2 ENUMERATED {mhz100, mhz200, mhz400} } OPTIONAL -- Need ON } OPTIONAL -- Need ON ]]}**[…]**-- ASN1STOP

|  |
| --- |
| *NR-DL-TDOA-RequestLocationInformation* field descriptions |
| ***nr-DL-PRS-RstdMeasurementInfoRequest***This field indicates whether the target device is requested to report DL-PRS Resource ID(s) or DL-PRS Resource Set ID(s) used for determining the timing of each TRP in RSTD measurements.  |
| ***nr-RequestedMeasurements***This field specifies the NR DL-TDOA measurements requested. This is represented by a bit string, with a one‑value at the bit position means the particular measurement is requested; a zero‑value means not requested. |
| ***nr-AssistanceAvailability***This field indicates whether the target device may request additional DL-PRS assistance data from the server. TRUE means allowed and FALSE means not allowed. |
| ***additionalPaths***This field, if present, indicates that the target device is requested to provide the *nr-AdditionalPathList* in IE *NR-DL-TDOA-SignalMeasurementInformation*. If this field is present, the field *additionalPathsExt* shall be absent. |
| ***nr-UE-RxTEG-Request***This field, if present, indicates that the target device is requested to provide the *nr-UE-Rx-TEG-ID* in IE *NR-DL-TDOA-SignalMeasurementInformation.* |
| ***nr-los-nlos-IndicatorRequest***This field, if present, indicates that the target device is requested to provide the indicated type and granularity of the estimated *LOS-NLOS-Indicator* in the *NR-DL-TDOA-SignalMeasurementInformation*. |
| ***additionalPathsExt***This field, if present, indicates that the target device is requested to provide the *nr-AdditionalPathListExt* in IE *NR-DL-TDOA-SignalMeasurementInformation*. If this field is present, the field *additionalPaths* shall be absent. |
| ***additionalPathsDL-PRS-RSRP-Request***This field, if present, indicates that the target device is requested to provide the *nr-DL-PRS-RSRPP* for the additional paths in fields *nr-AdditionalPathList* or *nr-AdditionalPathListExt*. |
| ***multiMeasInSameReport***This field, if present, indicates that the target device is requested to provide multiple measurement instances in a single measurement report; i.e., include the *nr-DL-TDOA-SignalMeasurementInstances* (in the case of UE-assisted mode is requested) or *nr-DL-TDOA-LocationInformationInstances* (in the case of UE-based mode is requested) in IE *NR-DL-TDOA-ProvideLocationInformation.* |
| ***jointMeasurementsReq***This field, if present, indicates the target device is requested to perform joint measurement across aggregated PFLs. |
| ***nr-DL-PRS-JointMeasurementRequestedPFL-List***This field, if present, indicates the target device is requested to perform joint measurements on the indicated two or three PFLs. This field is included if *jointMeasurementsReq* is present. Otherwise, it is absent. Value 0 corresponds to the first frequency layer provided in *nr-DL-PRS-AssistanceDataList*, value 1 to the second frequency layer in *nr-DL-PRS-AssistanceDataList*, and so on. |
| ***nr-DL-PRS-RxHoppingRequest***This field, if present, indicates that the target device is requested to use DL-PRS Rx hopping for performing RSTD, RSRP, or RSRPP measurements and report the hopping information used for performing the measurements. |
| ***nr-DL-PRS-RxHoppingTotalBandwidth***This field, if present, indicates the total bandwidth of all hops in MHz. |
|  |

**[…]** |

**[Rapporteur]**:

The modification is conflict with R2-2403190 which was agreed. The update on ***nr-DL-PRS-JointMeasurementRequestedPFL-List*** can be captured in the LPP rapporteur CR.

**[Comments]**:

**[Conclusion]**:

## 2.5 R[2-2403502](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403502.zip) About *nr-DL-PRS-MeasurementTimeWindowsConfig*

In contribution R[2-2403502](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403502.zip) [4], it is stated that the purpose or use of the *nr-DL-PRS-MeasurementTimeWindowsConfig* is missing in both LPP spec and stage-2 spec. It is useful to document the purpose of the measurement time window in the field description in specific positioning method IEs but still keep the current IE description for IE *NR-DL-PRS-MeasurementTimeWindowsConfig* generic with no references to carrier phase measurement(s).

The TP is given as following.

|  |
| --- |
| ***nr-DL-PRS-MeasurementTimeWindowsConfig***This field indicates DL-PRS Resource Set(s) occurring within time window(s) for performing measurements where the time window is indicated by a start time, periodicity, offset and duration.NOTE: The positioning server should provide the same configuration to two devices e.g., target device and PRU, for simultaneous measurements by the two devices and to ensure that the measurements from the two devices are correlated. |

**[Rapporteur]**:

Discuss if the Note is needed.

**[Comments]**:

**[Conclusion]**:

## 2.6 R[2-2403540](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403540.zip) RAT-dependent Integrity issues

In contribution R[2-2403540](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403540.zip) [5], it is proposed that the error correlation time reflects the expected variability of the error in time, with a short time correlation implies large variability and a long time correlation implies a small to no variability. Some of the error sources can be seen as rather static errors, while others vary in time. The TRP and ARP can fluctuate because they can be deployed on some somewhat flexible structure, while the DL-PRS resource is firmly mounted to the antenna panel and will not vary.

**Proposal 6 Separate time constant for error source bounds for TRP location.**

|  |  |  |
| --- | --- | --- |
| NR-IntegrityParametersTRP-LocationInfo-r18 ::= SEQUENCE { trp-ErrorCorrelationTime-r18 INTEGER(0..255), trp-ErrorCorrelationTimeDL-PRS-r18 INTEGER(0..255), ...}

| ***trp-ErrorCorrelationTime***This field specifies the TRP and ARP Error Correlation Time which is the upper bound of the correlation time of the TRP and ARP errors. The time is calculated using:$$t=\left\{\begin{array}{c}10i, \&i\leq 180\\1800+100(i-180), 180<\&i\leq 234 \\7200+1000\left(i-234\right), \&i>234\end{array} [s]\right.$$Range is 1-28,200 s. |
| --- |
| ***trp-ErrorCorrelationTimeDL-PRS***This field specifies the TRP Error Correlation Time which is the upper bound of the correlation time of the TRP DL-PRS resources error. The time is calculated using:$$t=\left\{\begin{array}{c}10i, \&i\leq 180\\1800+100(i-180), 180<\&i\leq 234 \\7200+1000\left(i-234\right), \&i>234\end{array} [s]\right.$$Range is 1-28,200 s. |

 |

**[Rapporteur]**:

TS 38.305 on TRP/ARP location error correlation time

##### 8.11.2.1.1 Mapping of integrity parameters

Table 8.11.2.1.1-1 shows the mapping between the integrity fields and the assistance data according to the Integrity Principle of Operation (Clause 7.13.2). The corresponding field descriptions for each of the field names listed in Table 8.11.2.1.1-1 are specified in TS 37.355 [42].

Table 8.11.2.1.1-1: Mapping of Integrity Parameters

|  |  |  |
| --- | --- | --- |
| Error | NR Assistance Data | Integrity Fields |
| Integrity Alerts | Integrity Bounds (Mean) | Integrity Bounds (StdDev) | Residual Risks | Integrity Correlation Times |
| TRP location | *NR-TRP-LocationInfo* | TRP DNU | Mean TRP/ARP location error | Standard deviation TRP/ARP location error | Probability of Onset of TRP faultMean TRP fault duration | TRP/ARP location error correlation time |
| Boresight Direction of DL-PRS Resource | *NR-DL-PRS-BeamInfo* | DL-PRS Boresight Direction DNU | Mean Azimuth/ Elevation Error of DL-PRS Resource boresight direction | Standard deviation Azimuth/Elevation Error of DL-PRS Resource boresight direction | Beam Boresight Direction Angle Error Correlation Time |
| Beam information of DL-PRS | *NR-TRP-BeamAntennaInfo* | DL-PRS Beam Information DNU | Mean Beam Power Error per direction | Standard deviation Beam Power Error per direction | Beam Power Error Correlation Time |

**[Comments]**:

**[Conclusion]**:

## 2.7 R2-2403540 Reporting of position and measurements

In contribution R[2-2403540](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403540.zip) [5], it is proposed that a common error is introduced to be used when the target device was unable to determine a position estimate but is able to provide measurements. It is also proposed that, the reported position estimate may not be based on any of the currently listed location sources. For example, the position estimate can be provided via some external interface. Therefore, it seems reasonable to indicate an external location source.

**Proposal 2 Add common error message when a position estimate is not available.**

**Proposal 3 Introduce a location source for external position.**

The TP refer to the A.2 in the following doc.

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**[Rapporteur]**:

Discuss if it is necessary/essential on P2 and P3 at first.

**[Comments]**:

**[Conclusion]**:

## 2.8 R[2-2403191](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403191.zip) TP for PRU Operation

In contribution R[2-2403191](file:///E%3A%5CWORK%5C1%203GPP%5CMeeting%5CRAN2%20125bis-Changsha%20R19%20SI%E5%BC%80%E5%A7%8B%5C2%20During%5CDocs%5CR2-2403191.zip) [6], it is stated that, for PRU operation in CPP for example, the usual scenario would be that the PRU reports measurements (RSCP or RSCPD) and obtains its location independently via surveying or HA-GNSS. In order to not mix positioning of a Target UE with PRU operation, it is proposed to introduce a dedicated "PRU Location Information Request" element. This can be extensible if additional PRU information is required in the future.

**Proposal 1:** For PRU operation, introduce a new IE for requesting/reporting PRU specific information (PRU/ARP coordinates in this Release).



**[Rapporteur]**:

The PRU has been discussed in [401] offline discussion so no more discussion here.

**[Comments]**:

**[Conclusion]**:

* **Noted**

# 3 Conclusion

Based on company feedback, the following is proposed:

# 4 References

[1] R2-2402556 Correction on RSCP measurement info in PRU DL info vivo draftCR Rel-18 37.355 18.1.0 F FS\_NR\_pos\_enh2

[2] R2-2402998 LPP Stage 3 Open Issue - CPP Lenovo discussion Rel-18

[3] R2-2403191 LPP Open Issues: PRU Operation and DL-PRS–DRX Alignment Qualcomm Incorporated discussion

[4] R2-2403501 Corrections to NR-PRU-DL-Info IE Nokia discussion Rel-18 37.355 NR\_pos\_enh2-Core

[5] R2-2403502 Request for carrier phase measurement or joint measurement and clarification for time window configuration Nokia discussion Rel-18 37.355 NR\_pos\_enh2-Core

[6] R2-2403540 LPP RIL issue Ericsson discussion Rel-18