**3GPP TSG-RAN WG3 Meeting #129 R3-25xxxx**

**Bengaluru, India, 25 – 29 August 2025**

**Agenda item: 20.2**

**Source: Ericsson (moderator)**

**Title: CB: # 17\_AIPHY**

**Document for: Discussion and Decision**

# 1 Introduction

This contribution provides summary of offline discussion on AI/ML for PHY (Positioning) based on the following CB minutes:

**CB: # 17\_AIPHY**

**- Further check 5572 and 5337**

**- TPs to reflect the above agreements**

**- BL CR cleanup and completion**

**- Reply LS to SA2 based on 5583**

(Ericsson)

# 2 For the Chair’s Notes

1. Agree R3-255823 - (TP to NRPPa BL CR): Case 3b
2. Agree R3-255813 - (TP to F1AP BL CR): Case 3b
3. Agree R3-255873 - (TP to NRPPa BL CR): Case 3a
4. Agree R3-255775 – TP to stage 2 TS 38.305
5. Agree R3-255824 LS to RAN2
6. Agree R3-255825 LS to SA2

# 3 Further check 5572 and 5337 (Case 3b TPs)

Based on offline discussion, it has been agreed to rename the “**UL-SRS-TDCP**” in R3-255572/5337 TPs into “**UL-SRS-TDCP item**”, to reflect this is an element of the Nt list constituting the power information.

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**Proposal 1: Agree revisions R3-255813 and R3-255823 revisions of 5572 and 5337**

# 4 Case 3a NRPPa TP

It has been agreed during the online session that:

**The "LoS/NLoS indicator" can also be a gNB inferred measurement.**

* **Change #1: It is proposed to remove the FFS from the *TRP Measurement Result* IE:**

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It was also agreed online that **In a POSITIONING DATA COLLECTION REPORT message, a LMF can provide the LoS/NLoS label information independently of any timing information label. The current semantics description in IE Positioning Data Information (9.2.Z2 [1]) is removed.**

* **Change #2: delete the semantics of the LoS/NLoS Information IE in 9.2.Z2:**

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Another online agreement was that: **It should be possible for an LMF to specifically request for AI/ML inferred measurements from TRPs.**

* **Change #3: add a new bit “inferred timing measurement” in the MCRI**

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Finally, on the indication of "Positioning Data Unavailable", it was agreed:

**Add the following error causes to the Positioning Data Unavailable IE:**

**- Positioning Data Information Not Supported**

**- Positioning Data Information Supported But Currently Not Available**

* **Change #4 revise the codepoints of the Positioning Data unavailable IE (ASN.1 change needed)**

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**Proposal 2: Agree revisions R3-25xxxx NRPPa TP capturing changes #1, #2, #3, #4:**

* **Change #1: remove the FFS from the *TRP Measurement Result* IE:**
* **Change #2: delete the semantics in 9.2.Z2:**
* **Change #3: add a new bit “inferred timing measurement” in the MCRI**
* **Change #4 revise the codepoints of the Positioning Dat Unavailable IE (ASN.1 change needed)**

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| **Company** | **Comment** |
| Ericsson | Change 1: As said online, can be done in stage 2 with no stage 3 impactsChange #2, #3: OKChange #4: the codepoints names are too long, suggest to be shortened to “not supported”, “not available” |
| **CEWiT** | Change 1: It is better to introduce one more conditional codepoint as suggested in TDoc R3-255288 as below. This is to reflect that both the measurement and LOS/NLOS information can be inferred and reported but LOS/NLOS can be reported only when measurement reported.

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| >Inferred measurement | O |  | ENUMERATED(true, …) | This IE is only valid for UL-RTOA, gNB Rx-Tx Time Difference. | YES | ignore |
| >Inferred LoS/NLoS Information | C-ifInferred measurementtrue  |  | ENUMERATED(true, …) | LoS/NLoS Information is included only if UL RTOA or gNB Rx-Tx Time Difference is provided | YES | ignore |

Change 2: OkayChange 3: Agree with E// cause names are too long. Further are these the only cause possible. Should we add cause “Unknown”? |
| **Xiaomi** | Replace IE with bitmap |
| **QC** | **Should we add a third codepoint for generic unknown reason? To be added later if needed** |
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**Proposal 1: re-encode the Inferred Measurement IE as a bitmap size (8), same structure as Data Collection needed IE**

**Proposal 2: add a new bit “inferred timing measurement” in the MCRI**

**Proposal 3: delete the semantics of the LoS/NLoS Information IE in 9.2.Z2**

**Proposal 4: shorten the codepoints to “not supported”, “not available”**

**Huawei to capture P1-P4 in a NRPPa TP for case 3a.**

# 5 Stage 2 clean-up

A TP will be provided by CATT capturing the stage 2 edits from other companies in R3-25xxxx. It is proposed to review it offline and provide comments directly in the document.

**Proposal 3: Agree revisions R3-255775 merging other TS 38.305 TPs**

**To CATT:**

* QC: rebase the TP on latest TS 38.305, keep change marks from BL CR
* Nokia, Huawei: make the text more generic and avoid mentioning of “training model”. Revert the box in the figure in step 2 in section 7.x
* CEWIT/QC: describe new LMF functions of providing labels to gNB in section 5.4.4
* CATT/Nokia: remove the two last sentences in step 5 from 7.x

# 6 LS reply to SA2 based on 5583

As part of online discussion it is proposed to reply to SA2 in (R3-255023 - S2-2505943) indicating that RAN3 will pursue solution 1 in Rel-19.

Based on R3-255583, below a revised text:

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| **1. Overall Description:**RAN3 thanks SA2 for their LS response with feedback to RAN3 solutions on case 3a (NW-sided model, AI/ML-assisted positioning).RAN3 will proceed with solution 1 in Rel-19. RAN3 kindly asks SA2 to add support of related LMF procedures in TS 23.273 as needed.**2. Actions:****To RAN2 : RAN3 kindly asks SA2 to take the above into account and introduce support for solution 1 in TS 23.273 as needed.** |

**Proposal 4: Agree revisions R3-25xxxx LS to SA2**

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| **Company** | **Comment** |
| CEWiT | Okay with the CR. But as commented online, the CR is not necessary as SA2 has gone ahead and discussing the possible changes in TS 23.273. |
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# 7 Other proposals

The following issues have not been discussed online, or slightly touched upon, they are to be discussed on a best effort basis during the offline session:

1. **Reply LS to RAN2 on logged Measurement Data during HO, capture and send in a LS to RAN2 that RAN3 will not do any work on this in Rel-19.**
2. **Whether the Positioning Data Collection Needed IE should remain a top level IE or included per TRP in a TRP list in the Measurement Response/Report messages**
3. **Addition of time stamp in the Positioning Data Collection Needed IE to indicate the desired time for report of data collection**
4. **Introduce a NOTE in the TP for BLCR to TS 38.305 to indicate that a gNB may use different Nt', Nt and/or k values, other than the signalled parameters for measurement**
5. **New cause values in case gNB cannot provide UL-SRS-TDCT**

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| **Company** | **Comment** |
| Ericsson | Issue #1: OKIssue #2: we think it should be per TRP, but fine to keep it as it is. A stage 2 clarification will anyway be needed. Either to be clarified this meeting or during maintenance.Issue #3: OK, gNB hosting the model knows when in time it needs training data and include a reference time. We note this has not been precluded from RAN1 agreements. We are fine to consider this now or during maintenance.Issue #4: OK, either now or during maintenance.Issue #5: NOK, existing cause values are sufficient |
| QC/CATT/Xiaomi | Issue#1 Include the Data Collection needed IE in a list of TRPs |
| Huawei/ZTE | Issue#1 not needed to restrict for a subset of TRPs |
| QC: | Issue#4: not needed in stage 2, maybe in stage 3 |
| Nokia | Issue#4 can be considered in maintenance |
| Huawei | Issue#4 important to be captured somewhere |

# References

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| [R3-255009](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255009.zip) | LS on Rel-19 AI/ML positioning higher layer parameters list Post RAN1#121 (RAN1(Ericsson)) | LS in |
| [R3-255016](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255016.zip) | Logged Data Handling During Handover (RAN2(Nokia)) | LS in |
| [R3-255023](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255023.zip) | Reply LS on AI/ML Positioning Case 3a (SA2(Nokia)) | LS in |
| [R3-255029](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255029.zip) | Reply LS on OAM-centric solution for NW-side data collection (SA5(Huawei)) | LS in |
| [R3-255160](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255160.zip) | Views on the Open Issues for AI/ML Positioning Accuracy Enhancements (Qualcomm Incorporated) | Discussion |
| [R3-255161](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255161.zip) | TP to BL CR for TS 38.305 (Qualcomm Incorporated) | Other  |
| [R3-255184](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255184.zip) | (TP to BL CR for TS38.305) Support of AI Positioning (CATT) | Other |
| [R3-255185](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255185.zip) | (TP to BL CR for TS38.455) Support of AI Positioning for Case 3a (CATT) | Other |
| [R3-255200](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255200.zip) | [TP for BL CR to TS 38.305 & TP for BL CR to TS 38.455] Discussion on AI/ML for positioning Case 3a (NEC) | Other |
| [R3-255201](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255201.zip) | [TP for BL CR to TS 38.455] Discussion on AI/ML for positioning Case 3b (NEC) | Other |
| [R3-255288](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255288.zip) | Remaining Issues for AI/ML based positioning case 3a and TP to NRPPa (CEWiT, IITM, Tejas Networks) | Discussion |
| [R3-255336](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255336.zip) | (TPs for TS 38.305 and TS 38.455) Support of gNB-side model (case 3a) (Xiaomi) | Other |
| [R3-255337](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255337.zip) | (TP to BL CR TS 38.473) addition of UL SRS time domain channel measurement (Xiaomi, Ericsson, CATT, Nokia, Samsung) | other |
| [R3-255338](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255338.zip) | (Draft LS out) Logged data handling during handover (Xiaomi) | LS out To: RAN2 CC:  |
| [R3-255372](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255372.zip) | (TPs for AI/ML BLCR to TS 38.300/305/401/455/473) Remaining open issues for AI/ML-based positioning Case 3a and Case 3b (Huawei) | Other |
| [R3-255373](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255373.zip) | (Draft Reply LS to RAN2) Discussion on R3-255016 (R2-2504950) LS Logged Data Handling During Handover (Huawei) | other |
| [R3-255377](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255377.zip) | Discussion on support of AI/ML assisted positioning (Case 3a) (China Telecom) | Discussion |
| [R3-255378](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255378.zip) | (TP to TS38.305) On support of AIML assisted positioning (China Telecom) | other |
| [R3-255406](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255406.zip) | Discussion on NW side data collection (Lenovo) | discussion |
| [R3-255407](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255407.zip) | (TP to BLCR 38.455) Provision of associated ID in Case 1 (Lenovo) | Other |
| [R3-255456](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255456.zip) | (TP to TS 38.300) AI/ML Training in OAM for case 3a (Nokia, Ericsson, Xiaomi, Samsung, CATT, ZTE) | other |
| [R3-255457](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255457.zip) | (TP to TS 38.305) Addressing remaining aspects in case 3a and case 3b (Nokia) | other |
| [R3-255458](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255458.zip) | Logged Data Handling after a Handover Event (Nokia) | discussion |
| [R3-255459](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255459.zip) | [Draft] Reply LS on Logged Data Handling During Handover (Nokia) | LS out To: RAN2 CC: SA5 |
| [R3-255503](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255503.zip) | (TP to BL CR to 38.401) AI/ML assisted Positioning (ZTE Corporation, Ericsson, Xiaomi, Nokia, Samsung, CATT) | other |
| [R3-255504](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255504.zip) | (TP to BL CR to 38.455) Support of AI/ML assisted Positioning (case 3a) (ZTE Corporation) | Other |
| [R3-255505](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255505.zip) | [Draft LS] Reply LS on logged Data Handling During Handover (ZTE Corporation) | other |
| [R3-255570](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255570.zip) | (TP to NRPPa/TS 38.305 BL CR): Addressing remaining issues of NW-assisted AI/ML positioning with gNB-sided model (Ericsson, Nokia) | other |
| [R3-255571](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255571.zip) | Way forward for Proactive (NGAP-based solution) for AI/ML NG-RAN assisted positioning (Ericsson) | discussion |
| [R3-255572](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255572.zip) | (TP to NRPPa BL CR): addition of UL SRS time domain channel measurement (Ericsson, Xiaomi, CATT, CEWIT, Nokia, Samsung) | other |
| [R3-255583](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255583.zip) | [Draft] Reply LS on AI/ML Positioning Case 3a (Nokia) | LS out To: SA2 CC:  |
| [R3-255669](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255669.zip) | Discussion on AI for positioning case 3a and case 3b (Samsung) | Discussion |
| [R3-255670](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255670.zip) | Discussion on Logged Data Handling During Handover (Samsung) | other |