3GPP TSG-RAN WG3 Meeting # 129bis *R3-257237*

Prague, Czech Republic, 13 – 17 October, 2025

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0203** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Correction on Positioning Data Collection Needed | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, Xiaomi, ZTE, Huawei, Samsung, CATT, Nokia, CEWIT | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_AIML\_air-Core | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | |  |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Based on the TRP Measurement Reports, the gNB can identify which TRPs have reported LoS or NLoS measurements and hence which TRP area needs training to infer AI/ML measurement from. Therefore, the gNB should be able to request for data collection for a specific list of measuring TRPs from the LMF, by indicating a specific area of interest. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Encode the *Positioning Data Collection Needed* IE as part of TRP List in the NRPPa MEASUREMENT RESPONSE and MEASUREMENT REPORT messages. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The gNB cannot accurately request for training data for its TRP measuring area of interest. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.5.1.2, 8.5.2.2, 9.1.4.2, 9.1.4.4, 9.3.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**<Start of changes>**

8.5 Measurement Information Transfer

8.5.1 Measurement

8.5.1.1 General

The Measurement procedure allows the LMF to request one or more TRPs in the NG-RAN node to perform and report positioning measurements. This procedure applies only if the NG-RAN node is a gNB.

8.5.1.2 Successful Operation

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**Figure 8.5.1.2.1: Measurement procedure. Successful operation.**

The LMF initiates the procedure by sending a MEASUREMENT REQUEST message to the NG-RAN node, indicating in the *TRP Measurement Request List* IE the TRP(s) from which measurements are requested. The NG-RAN node shall use the included information to configure positioning measurements by the indicated TRP(s). If at least one of the requested measurements has been successful for at least one of the TRPs, the NG-RAN node shall reply with a MEASUREMENT RESPONSE message including the *TRP Measurement Response List* IE.

If the *Report Characteristics* IE is set to "OnDemand", the NG-RAN node shall return the corresponding measurement results in the MEASUREMENT RESPONSE message, and the LMF shall consider that this reporting has been terminated by the NG-RAN node. If the *Report Characteristics* IE is set to "Periodic", the NG-RAN node shall initiate the corresponding measurements, and it shall reply with the MEASUREMENT RESPONSE message without including any measurement results in the message. The NG-RAN node shall then periodically initiate the Measurement Report procedure for the corresponding measurements, with the requested reporting periodicity.

If the *Measurement Beam Information Request* IE is included in the MEASUREMENT REQUEST message, the NG-RAN node shall, if supported, include the *Measurement Beam Information* IE in the *TRP Measurement Result* IE of the MEASUREMENT RESPONSE message.

If the *Measurement Quality* IE is included in the *TRP Measurement Result* IE in the MEASUREMENT RESPONSE message, the LMF may take it into account as the TRP estimate of the measurement quality. If the *Measurement Quality* IE includes the *Zenith Quality* IE, the LMF may take it into account within the angle measurement quality.

If the *Timing Reporting Granularity Factor* IE is included in the *TRP Measurement Quantities* IE in the MEASUREMENT REQUEST message, the NG-RAN node may take it into account when configuring measurements including UL RTOA and gNB Rx-Tx Time Difference.

If the *System Frame Number* IE and/or the *Slot Number* IE are included in the MEASUREMENT REQUEST message, the NG-RAN node shall, if supported, consider that the respective information indicates the activation time of SRS transmission.

If the *Report Characteristics* IE is set to "OnDemand" and the *Response Time* IE is included in the MEASUREMENT REQUEST message, the NG-RAN node shall, if supported, return the corresponding measurement results in the MEASUREMENT RESPONSE message within the indicated time.

If the *Measurement Characteristics Request Indicator* IE is included in the MEASUREMENT REQUEST message, the NG-RAN node shall, if supported, take the requested measurement characteristics into account when configuring measurements, and include the requested information, if available, in the MEASUREMENT RESPONSE message.

If the *Number of TRP Rx TEGs* IE is included in the MEASUREMENT REQUEST message, the NG-RAN node shall, if supported, use it to measure the same SRS resource with different TRP Rx TEGs for the indicated TRP, and report the corresponding UL-RTOA and/or gNB Rx-Tx time difference measurements.

If the *Number of TRP RxTx TEGs* IE is included in the MEASUREMENT REQUEST message, the NG-RAN node shall, if supported, use it to measure the same SRS resource with different TRP RxTx TEGs with the same TRP Tx TEG for the indicated TRP, and report the corresponding gNB Rx-Tx time difference measurements.

If the *Measurement Time Occasion* IE is included in the MEASUREMENT REQUEST message, the NG-RAN node may take it into account as the number of SRS measurement time occasions for a measurement instance.

If the *Time Window Information Measurement List* IE is included in the MEASUREMENT REQUEST message, the NG-RAN node shall, if supported, consider this as the time window(s) within which to perform the positioning measurements, as specified in TS 38.305 [18].

If the *Inferred Measurement* IE is included in the *TRP Measurement Result* IE in the MEASUREMENT RESPONSE message, the LMF shall, if supported, consider that the received positioning information is an inferred version of the measurement requested.

**Interaction with the** **Measurement Report procedure:**

If the *Report Characteristics* IE is set to "Periodic" and the *Measurement Amount* IE is included in the MEASUREMENT REQUEST message, the NG-RAN node shall, if supported, take it into account for sending the MEASUREMENT REPORT message.

**Interaction with the Positioning Data Collection Report procedure:**

If the *Positioning Data Collection Needed* IE is included in the MEASUREMENT RESPONSE message, the LMF shall, if supported, take it into account for providing the requested positioning data for the indicated TRPs in the POSITIONING DATA COLLECTION REPORT message, as specified in TS 38.305 [18].

8.5.1.3 Unsuccessful Operation

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**Figure 8.5.1.3.1: Measurement procedure. Unsuccessful operation.**

If the NG-RAN node cannot configure any of the requested measurements for any of the TRPs in the *TRP Measurement Request List* IE of the MEASUREMENT REQUEST message, it shall respond with a MEASUREMENT FAILURE message with an appropriate cause value.

8.5.1.4 Abnormal Conditions

If the *Report Characteristics* IE is set to "OnDemand" and the *Response Time* IE is included in the MEASUREMENT REQUEST message but the NG-RAN node is unable to provide the measurement results within the indicated time, the NG-RAN node shall, if supported, respond with a MEASUREMENT FAILURE message with an appropriate cause value.

8.5.2 Measurement Report

8.5.2.1 General

The Measurement Report procedure allows the NG-RAN node to report positioning measurements to the LMF. This procedure applies only if the NG-RAN node is a gNB.

8.5.2.2 Successful Operation

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**Figure 8.5.2.2.1: Measurement Report procedure. Successful operation.**

The NG-RAN node initiates the procedure by sending a MEASUREMENT REPORT message to the LMF. The MEASUREMENT REPORT message contains the measurement results according to the associated measurement configuration.

**Interaction with the Positioning Data Collection Report procedure:**

If the *Positioning Data Collection Needed* IE is included in the MEASUREMENT REPORT message, the LMF shall, if supported, take it into account for providing the requested positioning data for the indicated TRPs in the POSITIONING DATA COLLECTION REPORT message, as specified in TS 38.305 [18].

8.5.2.3 Abnormal Conditions

Void.

**<Next change>**

9.1.4.2 MEASUREMENT RESPONSE

This message is sent by the NG-RAN node to report positioning measurements.

Direction: NG-RAN node → LMF.

| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| --- | --- | --- | --- | --- | --- | --- |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …) |  | YES | reject |
| RAN Measurement ID | M |  | INTEGER (1..65536, …) |  | YES | reject |
| **TRP Measurement Response List** |  | *0..1* |  |  | YES | reject |
| **>TRP Measurement Response Item** |  | *1..<maxnoofMeasTRPs>* |  |  | - |  |
| >>TRP ID | M |  | 9.2.24 |  | - |  |
| >>TRP Measurement Result | M |  | 9.2.37 |  | - |  |
| >>Cell ID | O |  | NR CGI  9.2.9 | The Cell ID of the TRP identified by the *TRP ID* IE. | YES | ignore |
| >>Positioning Data Collection Needed | O |  | 9.2.106 |  | YES | ignore |
| Criticality Diagnostics | O |  | 9.2.2 |  | YES | ignore |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofMeasTRPs | Maximum no. of TRPs that can be included within one message. Value is 64. |

**<Next change>**

9.1.4.4 MEASUREMENT REPORT

This message is sent by the NG-RAN node to report positioning measurements for the target UE.

Direction: NG-RAN node → LMF.

| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| --- | --- | --- | --- | --- | --- | --- |
| Message Type | M |  | 9.2.3 |  | YES | ignore |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …) |  | YES | reject |
| RAN Measurement ID | M |  | INTEGER (1..65536, …) |  | YES | reject |
| **TRP Measurement Response List** |  | *1* |  |  | YES | reject |
| **>TRP Measurement Response Item** |  | *1..<maxnoofMeasTRPs>* |  |  | - |  |
| >>TRP ID | M |  | 9.2.24 |  | - |  |
| >>TRP Measurement Result | M |  | 9.2.37 |  | - |  |
| >>Cell ID | O |  | NR CGI  9.2.9 | The Cell ID of the TRP identified by the *TRP ID* IE. | YES | ignore |
| >>Positioning Data Collection Needed | O |  | 9.2.106 |  | YES | ignore |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofMeasTRPs | Maximum no. of TRPs that can be included within one message. Value is 64. |

**<Next change>**

9.3.4 PDU Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- PDU definitions for NRPPa

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-PDU-Contents {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) nrppa (4) version1 (1) nrppa-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

**<Omitted text unchanged>**

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- MEASUREMENT RESPONSE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{MeasurementResponse-IEs}},

...

}

MeasurementResponse-IEs NRPPA-PROTOCOL-IES ::= {

{ ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-RAN-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-TRP-MeasurementResponseList CRITICALITY reject TYPE TRP-MeasurementResponseList PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MEASUREMENT FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{MeasurementFailure-IEs}},

...

}

MeasurementFailure-IEs NRPPA-PROTOCOL-IES ::= {

{ ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- MEASUREMENT REPORT

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementReport ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{MeasurementReport-IEs}},

...

}

MeasurementReport-IEs NRPPA-PROTOCOL-IES ::= {

{ ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-RAN-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-TRP-MeasurementReportList CRITICALITY reject TYPE TRP-MeasurementResponseList PRESENCE mandatory},

...

}

**<Omitted text unchanged>**

TRP-MeasurementResponseList ::= SEQUENCE (SIZE (1..maxNoOfMeasTRPs)) OF TRP-MeasurementResponseItem

TRP-MeasurementResponseItem ::= SEQUENCE {

tRP-ID TRP-ID,

measurementResult TrpMeasurementResult,

iE-extensions ProtocolExtensionContainer { { TRP-MeasurementResponseItem-ExtIEs } } OPTIONAL,

...

}

TRP-MeasurementResponseItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

{ ID id-Cell-ID CRITICALITY ignore EXTENSION CGI-NR PRESENCE optional }|

EXTENSION ,

...

}

**<End of change>**