**3GPP TSG-RAN WG3 Meeting #123R3-240430**

**Athens, Greece, 26th Feb – 1st Mar 2024**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **1311** | **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 |  |

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|  | | | | | | | | | | |
| ***Title:*** | Correct the ASN.1 errors for mobile IAB | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_mobile\_IAB-Core | | | | |  | ***Date:*** | | | 2024-01-10 |
|  |  | | | |  | |  | | |  |
| ***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)* ***S*** *(adding to the sourcing companies’ CR statistics)*  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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | 1. There are some errors in ASN.1  * In 9.3.1.304 Mobile TRP Location Information, the *Location Information* is mandatory, but ASN.1 is optional.  1. Mobile TRP Location information is provided to the gNB-CU, then to LMF via multiple messages. The Assigned Criticality for *Mobile TRP Location information* IE is set to “ignore” in *Positioning Measurement Result* IE and *E-CID Measurement Result* IE, but it is set to “reject” in *TRP Information* IE. It is necessary the Assigned Criticality should be consistent. 2. There is an editorial error in Reference Section. “TS 29.571” is duplicated in [50] and [51]. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Change *location-Information* to mandatory. * Change the Assign Critiality for *Mobile TRP Location information* IE in *TRP Information* IE to “ignore”. * Delete the duplicated reference | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | ASN.1 errors remain in the specification. Inconsisent behavior in the gNB-CU for the same IE. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 9.3.1.176, 9.3.1.309, 9.4.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 38.455 CR 0126 | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

*Start of Change*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 38.470: "NG-RAN; F1 general aspects and principles".

[3] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".

[4] 3GPP TS 38.401: "NG-RAN; Architecture Description".

[5] ITU-T Recommendation X.691 (2002-07): "Information technology - ASN.1 encoding rules - Specification of Packed Encoding Rules (PER)".

[6] 3GPP TS 38.300: "NR; Overall description; Stage-2".

[7] 3GPP TS 37.340: "NR; Multi-connectivity; Overall description; Stage-2".

[8] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".

[9] 3GPP TS 36.423: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); X2 Application Protocol (X2AP)".

[10] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".

[11] 3GPP TS 23.203: "Policy and charging control architecture".

[12] ITU-T Recommendation X.680 (07/2002): "Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation".

[13] ITU-T Recommendation X.681 (07/2002): "Information technology – Abstract Syntax Notation One (ASN.1): Information object specification".

[14] 3GPP TR 25.921: (version.7.0.0): "Guidelines and principles for protocol description and error".

[15] 3GPP TS 36.413: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); S1 Application Protocol (S1AP)".

[16] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".

[17] 3GPP TS 38.104: "NR; Base Station (BS) radio transmission and reception".

[18] 3GPP TS 29.281: "General Packet Radio System (GPRS); Tunnelling Protocol User Plane (GTPv1-U) ".

[19] 3GPP TS 38.414: "NG-RAN; NG data transport".

[20] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".

[21] 3GPP TS 23.501: "System Architecture for the 5G System".

[22] 3GPP TS 38.472: "NG-RAN; F1 signalling transport".

[23] 3GPP TS 23.003: "Numbering, addressing and identification".

[24] 3GPP TS 38.304: "NR; User Equipment (UE) procedures in Idle mode and RRC Inactive state ".

[25] 3GPP TS 36.104: "Base Station (BS) radio transmission and reception".

[26] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".

[27] 3GPP TS 36.211: "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical channels and modulation".

[28] 3GPP TS 38.423: "NG-RAN; Xn application protocol (XnAP)".

[29] 3GPP TS 32.422: "Trace control and configuration management".

[30] 3GPP TS 38.340: "NR; Backhaul Adaptation Protocol (BAP) specification".

[31] 3GPP TS 38.213: "NR; Physical layer procedures for control".

[32] 3GPP TS 38.314: " NR; Layer 2 measurements".

[33] 3GPP TS 38.211: "NR; Physical channels and modulation".

[34] 3GPP TS 38.214: "NR; Physical layer procedures for data".

[35] 3GPP TS 37.320: "Radio measurement collection for Minimization of Drive Tests (MDT)".

[36] 3GPP TS 23.032:"Technical Specification Group Services and System Aspects; Universal Geographical Area Description (GAD)".

[37] 3GPP TS 38.455: "NG-RAN; NR Positioning protocol A (NRPPa)".

[38] 3GPP TS 38.133: "NR; Requirements for support of radio resource management".

[39] 3GPP TS 37.355: "LTE Positioning Protocol (LPP)".

[40] 3GPP TS 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".

[41] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

[42] 3GPP TS 38.305: "NG Radio Access Network (NG-RAN); Stage 2 functional specification of User Equipment (UE) positioning in NG-RAN".

[43] 3GPP TS 38.215: "NR; Physical layer (PHY); Measurements".

[44] 3GPP TS 23.304: "Proximity based Services (ProSe) in the 5G System (5GS)".

[45] Void

[46] 3GPP TS 37.213: "NR; Physical layer procedures for shared spectrum channel access".

[47] 3GPP TS 37.483: "E1 Application Protocol (E1AP)".

[48] IEEE Std 1588: "IEEE Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control Systems", Edition 2019.

[49] 3GPP TS 23.273: "5G System (5GS) Location Services (LCS); Stage 2".

[50] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".

*Next Change*

#### 9.3.1.176 TRP Information

The *TRP Information* IE contains information for one TRP within a gNB-DU.

| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| TRP ID | M |  | 9.3.1.197 |  | - |  |
| **TRP Information Type Response List** |  | *1* |  |  | - |  |
| **>TRP Information Type Response Item** |  | *1 .. <maxnoofTRPInfoTypes>* |  |  | - |  |
| >>CHOICE *TRP Information Type Response Item* | M |  |  |  | - |  |
| *>>>NR PCI* |  |  |  |  |  |  |
| >>>>NR PCI | M |  | INTEGER (0..1007) | NR Physical Cell ID | - |  |
| *>>>NR CGI* |  |  |  |  |  |  |
| >>>>NR CGI |  |  | 9.3.1.12 |  | - |  |
| *>>>NR ARFCN* |  |  |  |  |  |  |
| >>>>NR ARFCN | M |  | INTEGER (0..3279165) |  | - |  |
| *>>>PRS Configuration* |  |  |  |  |  |  |
| >>>>PRS Configuration | M |  | 9.3.1.177 |  | - |  |
| *>>>SSB Information* |  |  |  |  |  |  |
| >>>>SSB Information | M |  | 9.3.1.202 |  | - |  |
| *>>>SFN Initialisation Time* |  |  |  |  |  |  |
| >>>>SFN Initialisation Time | M |  | Relative Time 1900  9.3.1.183 |  | - |  |
| *>>>Spatial Direction Information* |  |  |  |  |  |  |
| >>>>Spatial Direction Information | M |  | 9.3.1.179 |  | - |  |
| *>>>Geographical Coordinates* |  |  |  |  |  |  |
| >>>>Geographical Coordinates | M |  | 9.3.1.184 |  | - |  |
| *>>>TRP Type* |  |  |  |  | YES | reject |
| >>>>TRP Type | M |  | ENUMERATED (prs-only-tp, srs-only-rp, tp, rp, trp,…, mobile-trp) | TS 38.305 [42] | - |  |
| *>>>On-demand PRS TRP Information* |  |  |  |  | YES | reject |
| >>>>On-demand PRS TRP Information | M |  | 9.3.1.240 |  | - |  |
| *>>>TRP Tx TEG Association* |  |  |  |  | YES | reject |
| >>>>TRP Tx TEG Association | M |  | 9.3.1.252 |  | - |  |
| *>>>TRP Beam Antenna* |  |  |  |  | YES | reject |
| >>>>TRP Beam Antenna Information | M |  | 9.3.1.256 |  | - |  |
| *>>>Mobile TRP Location* |  |  |  |  |  |  |
| >>>>Mobile TRP Location Information | M |  | 9.3.1.304 |  | YES | ignore |
| Mobile IAB-MT UE ID | C-ifMobileTRP |  | OCTET STRING | The UE ID of the IAB-MT associated with the mobile TRP, includes GPSI as defined in TS 29.571 [50] | YES | reject |

| Range bound | Explanation |
| --- | --- |
| maxnoofTRPInfoTypes | Maximum no of TRP information types that can be requested and reported with one message. Value is 64. |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifMobileTRP | This IE shall be present if the *TRP type* IE is set to the value 'mobile-trp' |

*Next Change*

#### 9.3.1.309 Associated Session ID

This IE is used to associate MBS Session IDs providing identical user data.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Associated Session ID | M |  | OCTET STRING | Coded as *AssociatedSessionId* defined in TS 29.571 [50].  The gNB-DU does not interpret the content of the *Associated Session ID* IE. |

*Next Change*

### 9.4.5 Information Element Definitions

-- ASN1START

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

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-- Information Element Definitions

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

\*\* Unchanged text skipped \*\*

MeasurementsToActivate ::= BIT STRING (SIZE (8))

Mobile-TRP-LocationInformation ::= SEQUENCE {

location-Information OCTET STRING,

velocity-Information OCTET STRING OPTIONAL,

location-time-stamp TimeStamp OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { Mobile-TRP-LocationInformation-ExtIEs} } OPTIONAL,

...

}

Mobile-TRP-LocationInformation-ExtIEs F1AP-PROTOCOL-EXTENSION ::= {

...

}

\*\* Unchanged text skipped \*\*

TRPInformationTypeResponseItem-ExtIEs F1AP-PROTOCOL-IES ::= {

{ ID id-TRPType CRITICALITY reject TYPE TRPType PRESENCE mandatory }|

{ ID id-OnDemandPRS CRITICALITY reject TYPE OnDemandPRS-Info PRESENCE mandatory}|

{ ID id-TRPTxTEGAssociation CRITICALITY reject TYPE TRPTxTEGAssociation PRESENCE mandatory}|

{ ID id-TRPBeamAntennaInformation CRITICALITY reject TYPE TRPBeamAntennaInformation PRESENCE mandatory }|

{ ID id-Mobile-TRP-LocationInformation CRITICALITY ignore TYPE Mobile-TRP-LocationInformation PRESENCE mandatory },

...

}

*End of Change*