3GPP TSG-RAN WG3 Meeting #129 R3-255895

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

Agenda Item: 10.3.1

Source: ZTE Corporation

Title: (TP to BL CR for 38.423) MDT Enhancement for NTN

Document for: Discussion

# 1 Introduction

This TP is to introduce the geographical area scope of MDT for NTN.

# 2 TP to BL CR for 38.423 on MDT enhancement for NTN

<<<<<<<<<<<<<<<<<<<< Start of Changes >>>>>>>>>>>>>>>>>>>>

# 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 38.401: "NG-RAN; Architecture Description".

[3] 3GPP TS 38.420: "NG-RAN; Xn General Aspects and Principles".

[4] 3GPP TS 38.422: "NG-RAN; Xn Signalling Transport".

[5] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP) ".

[6] 3GPP TS 25.921: "Guidelines and principles for protocol description and error handling".

[7] 3GPP TS 23.501: "System Architecture for the 5G System".

[8] 3GPP TS 37.340: "Evolved Universal Terrestrial Radio Access (E-UTRA) and NR; Multi-connectivity; Stage 2".

[9] 3GPP TS 38.300: "NR; NR and NG-RAN Overall Description; Stage 2".

[10] 3GPP TS 38.331: "NR; Radio Resource Control (RRC) Protocol specification".

[11] 3GPP TS 38.323: "NR; Packet Data Convergence Protocol (PDCP) specification".

[12] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".

[13] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[14] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC) protocol specification".

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

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

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

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

[19] 3GPP TS 38.424: "NG-RAN; Xn data transport".

[20] 3GPP TS 38.414: "NG-RAN; NG data transport".

[21] 3GPP TS 38.412: "NG-RAN; NG Signalling Transport".

[22] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[23] 3GPP TS 32.422: "Trace control and configuration management".

[24] 3GPP TS 38.104: "NR; Base Station (BS) radio transmission and reception".

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

[26] 3GPP TS 36.211: "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical Channels and Modulation".

[27] 3GPP TS 36.101: "User Equipment (UE) radio transmission and reception".

[28] 3GPP TS 33.501: "Security architecture and procedures for 5G System".

[29] 3GPP TS 33.401: "3GPP System Architecture Evolution (SAE); Security architecture".

[30] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

[31] 3GPP TS 36.413: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); S1 Application Protocol (S1AP)".

[32] 3GPP TS 25.413: "UTRAN Iu interface RANAP signalling".

[33] 3GPP TS 38.304: "NR; User Equipment (UE) procedures in Idle mode and RRC Inactive state".

[34] 3GPP TS 36.304: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) procedures in idle mode".

[35] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".

[36] 3GPP TS 36.321: "Evolved Universal Terrestrial Radio Access (E-UTRA); Medium Access Control (MAC) protocol specification".

[37] IETF RFC 5905: "Network Time Protocol Version 4: Protocol and Algorithms Specification".

[38] 3GPP TS 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".

[39] 3GPP TS 38.211: "NR; Physical channels and modulation".

[40] 3GPP TS 38.213: "NR; Physical layer procedures for control".

[41] 3GPP TS 38.473: "NG-RAN; F1 application protocol (F1AP)".

[42] 3GPP TS 38.314: "NR; Layer 2 measurements".

[43] 3GPP TS 37.320: " Radio measurement collection for Minimization of Drive Tests (MDT),"

[44] 3GPP TS 36.423: " Evolved Universal Terrestrial Radio Access Network (E-UTRAN); X2 application protocol (X2AP)".

[45] 3GPP TS 29.244: "Interface between the Control Plane and the User Plane Nodes; Stage 3".

[46] 3GPP TS 23.247: "Architectural enhancements for 5G multicast-broadcast services; Stage 2".

[47] 3GPP TS 26.247: “Transparent end-to-end Packet-switched Streaming Service (PSS); Progressive Download and Dynamic Adaptive Streaming over HTTP (3GP-DASH)”.

[48] 3GPP TS 23.304: "Proximity based Services (ProSe) in the 5G System (5GS)".

[49] 3GPP TS 38.455: "NG-RAN; NR Positioning Protocol A (NRPPa)".

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

[51] 3GPP TS 37.213: "NR; Physical layer procedures for shared spectrum channel access".

[52] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".

[53] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction".

[54] 3GPP TS 26.118: "Virtual Reality (VR) profiles for streaming applications".

[55] 3GPP TS 28.405: "Telecommunication management; Quality of Experience (QoE) measurement collection; Control and configuration".

[56] 3GPP TS 23.256: "Support of Uncrewed Aerial Systems (UAS) connectivity, identification and tracking; Stage 2".

[57] 3GPP TS 23.527: "5G System; Restoration procedures".

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

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### 8.2.1 Handover Preparation

#### 8.2.1.1 General

This procedure is used to establish necessary resources in an NG-RAN node for an incoming handover. If the procedure concerns a conditional handover, parallel transactions are allowed. Possible parallel requests are identified by the target cell ID when the source UE AP IDs are the same.

The procedure uses UE-associated signalling.

#### 8.2.1.2 Successful Operation



Figure 8.2.1.2-1: Handover Preparation, successful operation

The source NG-RAN node initiates the procedure by sending the HANDOVER REQUEST message to the target NG-RAN node. When the source NG-RAN node sends the HANDOVER REQUEST message, it shall start the timer TXnRELOCprep.

Unchanged part is omitted

If the *DL LBT Failure Information Request* IE is included in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, consider that the source NG-RAN node has requested the DL LBT failure information of the UE in the target cell during handover.

If the *Network Slice Area Scope of MDT* IE is included in the *MDT Configuration-NR* IE included in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, use it to derive the MDT area scope for MDT measurement collection. Upon reception of the *Network Slice Area Scope of MDT* IE, the target NG-RAN node shall consider that the area scope for MDT measurement collection is defined only by the *Network Slice Area Scope of MDT* IE and *Area Scope of MDT* IE.

If the *Geographical Area* IE is included in the *MDT Configuration-NR* IE included in the HANDOVER REQUEST message, and the *Geographical Area* IE contains the *MDT PLMN List* IE, the target NG-RAN node shall, if supported, apply the geographical area scope only for UEs served in the listed PLMNs.

**Interaction with SN Status Transfer procedure:**

If the *UE Context Kept Indicator* IE set to "True" and the *DRBs transferred to MN* IE are included in the HANDOVER REQUEST ACKNOWLEDGE message, the source NG-RAN node shall, if supported, include the uplink/downlink PDCP SN and HFN status received from the S-NG-RAN node in the SN Status Transfer procedure towards the target NG-RAN node, as specified in TS 37.340 [8].

**Interaction with the Data Collection Reporting and the Data Collection Reporting Initiation procedures:**

If the *Data Collection ID* IE is contained in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, report to the source NG-RAN node after successful handover, via the Data Collection Reporting procedure, the requested information configured via the previous Data Collection Reporting Initiation procedure corresponding to the *NG-RAN node1 Measurement ID* IE, allocated by the source NG-RAN node, and the *NG-RAN node2 Measurement ID* IE, allocated by the target NG-RAN node.

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### 8.2.4 Retrieve UE Context

#### 8.2.4.1 General

The purpose of the Retrieve UE Context procedure is to either retrieve the UE context from the old NG-RAN node and transfer it to the NG-RAN node where the UE RRC Connection has been requested to be established, or to enable the old NG-RAN node to forward an RRC message to the UE via the new NG-RAN node without context transfer, or to request for small data transmission. The procedure can also be used to transfer the authorization status information of the mobile IAB-node.

The procedure uses UE-associated signalling.

#### 8.2.4.2 Successful Operation



Figure 8.2.4.2-1: Retrieve UE Context, successful operation

The new NG-RAN node initiates the procedure by sending the RETRIEVE UE CONTEXT REQUEST message to the old NG-RAN node.

Unchanged part is omitted

If the *PNI-NPN Area Scope of MDT* IE is included in the *MDT Configuration-NR* IE included in the RETRIEVE UE CONTEXT RESPONSE message, the new NG-RAN node shall, if supported, use it to derive the MDT area scope for MDT measurement collection in PNI-NPN. Upon reception of the *PNI-NPN Area Scope of MDT* IE, the new NG-RAN node shall consider that the area scope for MDT measurement collections of PNI-NPN areas is defined only by the areas included in the *PNI-NPN Area Scope of MDT* IE.

If the UE is a mobile IAB-node, the old NG-RAN node shall include the *Mobile* *IAB Authorization Status* IE in the RETRIEVE UE CONTEXT RESPONSE message. If the *Mobile* *IAB Authorization Status* IE is included in the RETRIEVE UE CONTEXT RESPONSE message, the new NG-RAN node shall, if supported, consider that the UE is a mobile IAB-node, then store it and use it accordingly as defined in TS 38.401 [2].

If the *Network Slice Area Scope of MDT* IE is included in the *MDT Configuration-NR* IE included in the RETRIEVE UE CONTEXT RESPONSE message, the new NG-RAN node shall, if supported, use it to derive the MDT area scope for MDT measurement collection. Upon reception of the *Network Slice Area Scope of MDT* IE, the new NG-RAN node shall consider that the area scope for MDT measurement collection is defined only by the *Network Slice Area Scope of MDT* IE and *Area Scope of MDT* IE.

If the *Geographical Area* IE is included in the *MDT Configuration-NR* IE included in the RETRIEVE UE CONTEXT RESPONSE message, and the *Geographical Area* IE contains the *MDT PLMN List* IE, the new NG-RAN node shall, if supported, apply the geographical area scope only for UEs served in the listed PLMNs.

**Interaction with the Retrieve UE Context Confirm procedure**

If the *UE Context Reference at the S-NG-RAN node* IE is contained in the RETRIEVE UE CONTEXT RESPONSE message, the new NG-RAN node may use it to establish dual connectivity with the S-NG-RAN node and shall trigger the Retrieve UE Context Confirm procedure to the old NG-RAN node when the UE successfully resumes on the new NG-RAN node.

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8.3.14 Trace Start

8.3.14.1 General

The purpose of the Trace Start procedure is to allow the M-NG-RAN node to request the S-NG-RAN node to initiate a trace session for a UE. The procedure uses UE-associated signalling.

8.3.14.2 Successful Operation

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**Figure 8.3.14.2-1: Trace Start, successful operation**

The Trace Start procedure is initiated by the M-NG-RAN sending the TRACE START message to the S-NG-RAN for that specific UE. Upon reception of the TRACE START message, the S-NG-RAN node shall initiate the requested trace session as described in TS 32.422 [23].

Unchanged part is omitted

If the *PNI-NPN Area Scope of MDT* IE is included in the *MDT Configuration-NR* IE included in the TRACE START message, the S-NG-RAN node shall, if supported, use it to derive the MDT area scope for MDT measurement collection in PNI-NPN. Upon reception of the *PNI-NPN Area Scope of MDT* IE, the S-NG-RAN node shall consider that the area scope for MDT measurement collection of PNI-NPN areas is defined only by the areas included in the *PNI-NPN Area Scope of MDT* IE.

If the *Network Slice Area Scope of MDT* IE is included in the *MDT Configuration-NR* IE included in the TRACE START message, the S-NG-RAN node shall, if supported, use it to derive the MDT area scope for MDT measurement collection. Upon reception of the *Network Slice Area Scope of MDT* IE, the S-NG-RAN node shall consider that the area scope for MDT measurement collection is defined only by the *Network Slice Area Scope of MDT* IE and *Area Scope of MDT* IE.

If the *Geographical Area* IE is included in the *MDT Configuration-NR* IE included in the TRACE START message, and the *Geographical Area* IE contains the *MDT PLMN List* IE, the S-NG-RAN node shall, if supported, apply the geographical area scope only for UEs served in the listed PLMNs.

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#### 9.2.3.126 MDT Configuration-NR

The IE defines the MDT configuration parameters of NR.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| MDT Activation | M |  | ENUMERATED  (Immediate MDT only, Immediate MDT and Trace, Logged MDT only, ...) |  | – |  |
| CHOICE *Area Scope of MDT-NR* | O |  |  |  | – |  |
| >*Cell based* |  |  |  | If *PNI-NPN Area Scope of MDT* IE is present, this IE covers non-CAG cells only, where non-CAG cells refer to cells that only provide public access. |  |  |
| >>**Cell ID List for MDT-NR** |  | *1 .. <maxnoofCellIDforMDT>* |  |  | – |  |
| >>>NR CGI | M |  | 9.2.2.7 |  | – |  |
| >*TA based* |  |  |  | If *PNI-NPN Area Scope of MDT* IE is present, this IE covers non-CAG cells only, where non-CAG cells refer to cells that only provide public access. |  |  |
| >>**TA List for MDT** |  | *1 .. <maxnoofTAforMDT>* |  |  | – |  |
| >>>TAC | M |  | 9.2.2.5 | The TAI is derived using the current serving PLMN. | – |  |
| >*TAI based* |  |  |  | If *PNI-NPN Area Scope of MDT* IE is present, it covers non-CAG cells only, where non-CAG cells refer to cells that only provide public access. |  |  |
| >>**TAI List for MDT** |  | *1* |  |  | – |  |
| >>>**TAI List for MDT Item** |  | *1 .. <maxnoofTAforMDT>* |  |  | – |  |
| >>>>PLMN Identity | M |  | 9.2.2.4 |  | – |  |
| >>>>TAC | M |  | 9.2.2.5 |  | – |  |
| *>PNI-NPN Based MDT* |  |  |  |  | YES | ignore |
| >>CAG List for MDT |  |  | 9.2.3.191 |  | – |  |
| *>SNPN Cell Based MDT* |  |  |  |  | YES | ignore |
| >>**SNPN *Cell ID List for MDT*** |  | *1..<maxnoofCellIDforMDT>* |  |  | – |  |
| >>>NR CGI | M |  | 9.2.2.7 |  | – | - |
| >>>NID | M |  | 9.2.2.65 | Identifies an SNPN together with the PLMN Identity in the *NR CGI* IE. | – | - |
| *>SNPN TAI Based MDT* |  |  |  |  | YES | ignore |
| **>>SNPN TAI List for MDT** |  | *1..<maxnoofTAforMDT>* |  |  | – | - |
| >>>PLMN Identity | M |  | 9.2.2.4 |  | – | - |
| >>>TAC | M |  | 9.2.2.5 |  | – | - |
| >>>NID | M |  | 9.2.2.65 | Identifies an SNPN together with the *PLMN Identity* IE. | – | - |
| *>SNPN Based MDT* |  |  |  |  | YES | ignore |
| **>>SNPNList for MDT** |  | *1..<maxnoofMDTSNPNs>* |  |  | – | - |
| >>>PLMN Identity | M |  | 9.2.2.4 |  | – | - |
| >>>NID | M |  | 9.2.2.65 | Identifies an SNPN together with the *PLMN Identity* IE. | – | - |
| *>Geography Based MDT* |  |  |  | The geographical area scope can be used with NTN deployment. |  |  |
| *>>Geographical Area* |  |  | 9.2.3.y |  |  |  |
| CHOICE *MDT Mode* | M |  |  |  | – |  |
| >*Immediate MDT-NR* |  |  |  |  |  |  |
| >>Measurements to Activate | M |  | BITSTRING  (SIZE(8)) | Each position in the bitmap indicates a MDT measurement, as defined in TS 37.320 [43].  First Bit = M1,  Second Bit= M2,  Fourth Bit = M4,  Fifth Bit = M5,  Sixth Bit = logging of M1 from event triggered measurement reports according to existing RRM configuration,  Seventh Bit = M6,  Eighth Bit = M7.  Value "1" indicates "activate" and value "0" indicates "do not activate".  This version of the specification does not use bits 3. | – |  |
| >>M1 Configuration | C-ifM1 |  | 9.2.3.128 |  | – |  |
| >>M4 Configuration | C-ifM4 |  | 9.2.3.129 |  | – |  |
| >>M5 Configuration | C-ifM5 |  | 9.2.3.130 |  | – |  |
| >>MDT Location Information | O |  | BITSTRING(SIZE(8)) | Each position in the bitmap represents requested location information as defined in TS 37.320 [43].  First Bit = GNSS  Other bits are reserved for future use and are ignored if received.  Value "1" indicates "activate" and value "0" indicates "do not activate".  The eNB shall ignore the first bit unless the *Measurements to Activate* IE has the first bit or the sixth bit set to "1". | – |  |
| >>M6 Configuration | C-ifM6 |  | 9.2.3.131 |  | – |  |
| >>M7 Configuration | C-ifM7 |  | 9.2.3.132 |  | – |  |
| >>Bluetooth Measurement Configuration | O |  | 9.2.3.134 |  | – |  |
| >>WLAN Measurement Configuration | O |  | 9.2.3.135 |  | – |  |
| >>Sensor Measurement Configuration | O |  | 9.2.3.136 |  | – |  |
| >*Logged MDT-NR* |  |  |  |  |  |  |
| >>Logging interval | M |  | ENUMERATED (ms320, ms640, ms1280, ms2560, ms5120, ms10240, ms20480, ms30720, ms40960 , ms61440, infinity, ...) | Corresponds to information provided in the *LoggingInterval* IE as defined in TS 38.331 [10]. The value "infinity" represents one shot logging, i.e., only one log per event in the logged MDT report. | – |  |
| >>Logging duration | M |  | ENUMERATED (10, 20, 40, 60, 90, 120) | Corresponds to information provided in the *LoggingDuration* IE as defined in TS 38.331 [10]. Unit: [minute]. | – |  |
| >>CHOICE *Report Type* | M |  |  |  | – |  |
| >>>*Periodical* |  |  |  |  |  |  |
| >>>*Event Triggered* |  |  |  |  |  |  |
| >>>>Logged Event Trigger Config | M |  | 9.2.3.137 |  | – |  |
| >>Bluetooth Measurement Configuration | O |  | 9.2.3.134 |  | – |  |
| >>WLAN Measurement Configuration | O |  | 9.2.3.135 |  | – |  |
| >>Sensor Measurement Configuration | O |  | 9.2.3.136 |  | – |  |
| >>Area Scope of Neighbour Cells | O |  | 9.2.3.140 |  | – |  |
| >>Early Measurement | O |  | ENUMERATED  (true, ...) | This IE indicates whether the UE is allowed to log measurements on early measurement related frequencies in logged MDT as specified in TS 38.331 [10]. | – |  |
| Signalling based MDT PLMN List | O |  | MDT PLMN List  9.2.3.133 |  | – |  |
| **PNI-NPN Area Scope of MDT** |  | *0..1* |  |  | YES | Ignore |
| >CAG List for MDT | M |  | 9.2.3.191 |  | – |  |
| Network Slice Area Scope of MDT | O |  | 9.2.3.x |  | YES | ignore |

| Range bound | Explanation |
| --- | --- |
| maxnoofCellIDforMDT | Maximum no. of Cell ID subject for MDT scope. Value is 32. |
| maxnoofTAforMDT | Maximum no. of TA subject for MDT scope. Value is 8. |
| maxnoofMDTSNPNs | Maximum no. of SNPNs in the MDT SNPN list. Value is 16. |

| Condition | Explanation |
| --- | --- |
| ifM1 | This IE shall be present if the *Measurements to Activate* IE has the first bit set to "1". |
| ifM4 | This IE shall be present if the *Measurements to Activate* IE has the fourth bit set to "1". |
| ifM5 | This IE shall be present if the *Measurements to Activate* IE has the fifth bit set to "1". |
| ifM6 | This IE shall be present if the *Measurements to Activate* IE has the seventh bit set to "1". |
| ifM7 | This IE shall be present if the *Measurements to Activate* IE has the eighth bit set to "1". |

9.2.3.x Network Slice Area Scope of MDT

This IE is used to identify the list of network slices for MDT.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | |
| **Network Slice List for MDT** |  | *1* |  |  | |
| **>Network Slice Item for MDT** |  | *1..<maxnoofMDTPLMNs>* |  |  | |
| >PLMN Identity | M |  | 9.2.2.4 |  | |
| **>Slice MDT List** |  | *1* |  |  |
| **>>Slice MDT Item** |  | *1..<maxnoofSliceItemsforMDT >* |  |  |
| >>>S-NSSAI | M |  | 9.2.3.21 |  | |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofMDTPLMNs | Maximum no. of PLMNs in the MDT PLMN list. Value is 16. |
| maxnoofSliceItemsforMDT | Maximum no. of S-NSSAIs for MDT area scope. Value is 1024. |

9.2.3.y Geographical Area

This IE is used to limit the area scope for NTN MDT based on the geographical criteria.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
| **NTN Geographical Area** |  | *1* |  |  |
| **>NTN Geographical Area Item** |  | *1..<maxnoofAreaNTNforMDT>* |  |  |
| >>CHOICE *Area Type* | M |  |  |  |
| *>>>Circle* |  |  |  |  |
| >>>>Reference Location | M |  | OCTET STRING | *tn-ReferenceLocation-r18* as defined in TS 38.331[18] |
| >>>>Distance Radius | M |  | INTEGER(0..65535) | *tn-DistanceRadius-r18* as defined in TS 38.331[18] |
| *>>>* *Polygon* |  |  |  |  |
| >>>> **Polygon** |  |  | OCTET STRING | The first/leftmost bit of the first octet contains the most significant bit, as defined in TS 37.355 [xx] |
| >MDT PLMN List | O |  | 9.2.3.133 |  |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofAreaNTNforMDT | Maximum no. of the geographical area configurations. Value is 8. |

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

### 9.3.4 PDU Definitions

-- ASN1START

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

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-- PDU definitions for XnAP.

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

XnAP-PDU-Contents {

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

ngran-access (22) modules (3) xnap (2) version1 (1) xnap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

<<<unchanged is omitted>>>

id-MN-only-MDT-collection,

id-BarringExemptionforEmerCallInfo,

id-Transmission-Bandwidth-asymmetric,

id-NRPPaPositioningInformation,

id-NetworkSliceAreaScopeofMDT,

id-GeographicalArea,

id-GeographyBasedMDT

maxEARFCN,

maxnoofAllowedAreas,

<<<unchanged is omitted>>>

maxnoofMDTSNPNs,

maxnoofSecurityConfigurations,

maxnoofRSPPQoSFlows,

maxnoofSliceItemsforMDT,

maxnoofNTNAreasforMDT,

<<<unchanged is omitted>>>

AreaScopeOfMDT-NR ::= CHOICE {

cellBased CellBasedMDT-NR,

tABased TABasedMDT,

tAIBased TAIBasedMDT,

...,

choice-extension ProtocolIE-Single-Container { {AreaScopeOfMDT-NR-ExtIEs} }

}

AreaScopeOfMDT-NR-ExtIEs XNAP-PROTOCOL-IES ::= {

{ ID id-PNI-NPNBasedMDT CRITICALITY ignore TYPE PNI-NPNBasedMDT PRESENCE mandatory}|

{ ID id-SNPN-CellBasedMDT CRITICALITY ignore TYPE SNPN-CellBasedMDT PRESENCE mandatory}|

{ ID id-SNPN-TAIBasedMDT CRITICALITY ignore TYPE SNPN-TAIBasedMDT PRESENCE mandatory}|

{ ID id-SNPN-BasedMDT CRITICALITY ignore TYPE SNPN-BasedMDT PRESENCE mandatory}|

{ID id-GeographyBasedMDT CRITICALITY ignore TYPE GeographyBasedMDT PRESENCE mandatory},

...

}

<<<unchanged is omitted>>>

CHO-Candidate-PSCells-list ::= SEQUENCE (SIZE(1..maxnoofPSCellCandidates)) OF CHO-Candidate-PSCells-Item

CHO-Candidate-PSCells-Item ::= SEQUENCE {

pscell-id NR-CGI,

target2source-NG-RANNode-Container OCTET STRING,

iE-Extensions ProtocolExtensionContainer { {CHO-Candidate-PSCells-Item-ExtIEs}} OPTIONAL,

...

}

CHO-Candidate-PSCells-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::={

...

}

Circle ::= SEQUENCE {

referenceLocation OCTECT STRING,

distanceRadius INTEGER(0..65536, ...),

iE-Extensions ProtocolExtensionContainer { { Circle-ExtIEs} } OPTIONAL,

...

}

Circle-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

<<<unchanged is omitted>>>

GBRQoSFlowInfo ::= SEQUENCE {

maxFlowBitRateDL BitRate,

maxFlowBitRateUL BitRate,

guaranteedFlowBitRateDL BitRate,

guaranteedFlowBitRateUL BitRate,

notificationControl ENUMERATED {notification-requested, ...} OPTIONAL,

maxPacketLossRateDL PacketLossRate OPTIONAL,

maxPacketLossRateUL PacketLossRate OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {GBRQoSFlowInfo-ExtIEs} } OPTIONAL,

...

}

GBRQoSFlowInfo-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-AlternativeQoSParaSetList CRITICALITY ignore EXTENSION AlternativeQoSParaSetList PRESENCE optional },

...

}

GeographyBasedMDT::= SEQUENCE {

geographicalArea GeographicalArea,

iE-Extensions ProtocolExtensionContainer { {GeographyBasedMDT-ExtIEs} } OPTIONAL,

...

}

GeographyBasedMDT-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

GeographicalArea ::= SEQUENCE {

nTNGeographicalArea NTNGeographicalArea,

nTNPLMNList MDTPLMNList OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {GeographicalArea-ExtIEs} } OPTIONAL,

...

}

GeographicalArea-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

<<<unchanged is omitted>>>

NRUESidelinkAggregateMaximumBitRate ::= SEQUENCE {

uESidelinkAggregateMaximumBitRate BitRate,

iE-Extensions ProtocolExtensionContainer { {NRUESidelinkAggregateMaximumBitRate-ExtIEs} } OPTIONAL,

...

}

NRUESidelinkAggregateMaximumBitRate-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

NSAG-ID ::= INTEGER (0..255, ...)

NTNGeographicalArea ::= SEQUENCE (SIZE(1.. maxnoofAreaNTN)) OF NTNGeographicalAreaItem

NTNGeographicalAreaItem ::= CHOICE {

circle Circle,

polygon Polygon,

cHOICE-Extensions ProtocolIE-SingleContainer { {NTNGeographicalAreaItem-ExtIEs} }

}

NTNGeographicalAreaItem-ExtIEs XNAP-PROTOCOL-EXTENSION ::={

...

}

<<<unchanged is omitted>>>

-- P

Polygon ::= OCTET STRING

PositioningInformation ::= SEQUENCE {

requestedSRSTransmissionCharacteristics RequestedSRSTransmissionCharacteristics,

routingID RoutingID,

nRPPaTransactionID INTEGER (0..32767),

iE-Extension ProtocolExtensionContainer { { PositioningInformation-ExtIEs} } OPTIONAL,

...

}

PositioningInformation-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

<<<unchanged is omitted>>>

### 9.3.7 Constant definitions

-- ASN1START

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

--

-- Constant definitions

--

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

XnAP-Constants {

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

ngran-Access (22) modules (3) xnap (2) version1 (1) xnap-Constants (4) }

<<<unchanged is omitted>>>

maxnoofSecurityConfigurations INTEGER ::= 8

maxnoofRSPPQoSFlows INTEGER ::= 2048

maxnoofSliceItemsforMDT INTEGER ::= 1024

maxnoofAreaNTNforMDT INTEGER ::= 32

<<<unchanged is omitted>>>

id-SRSPositioningConfigOrActivationRequest ProtocolIE-ID ::= 473

id-NRPPaPositioningInformation ProtocolIE-ID ::= 474

id-NetworkSliceAreaScopeofMDT ProtocolIE-ID ::= XX1

id-GeographicalArea ProtocolIE-ID ::= XX2

id-GeographyBasedMDT ProtocolIE-ID ::= XX3

<<<<<<<<<<<<<<<<<<<< End of Changes >>>>>>>>>>>>>>>>>>>>