**3GPP TSG-RAN WG3 #129 *R3-255757***

**St. Julien, Malta, 19th – 23rd May 2025**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** | **1247** | **rev** | **7** | **Current version:** |  |  |
|  |
| *For* [***HELP***](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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Support Aerial UE Flight Information Reporting to CN |
|  |  |
| ***Source to WG:*** | , CMCC, ZTE, CATT, Nokia, Huawei |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | UAS\_Ph3 |  | ***Date:*** | 2025-08-06 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***Release:*** | Rel-19 |
|  | *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 canbe 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:*** | In the SA2 LS R3-250022 and SA2 reply LS R3-253020, SA2 is specifying a new feature “Pre-flight Planning and In-flight Monitoring for UAVs” and SA2 agrees that the UAV altitude can be received from NG-RAN, assuming to reuse the existing feature like eventH1/H2 reporting together with additional trigger from the core network as specified in Rel-19. Time Stamp on when altitude was reported from the UE is also useful. |
|  |  |
| ***Summary of change:*** | Include in the Location Reporting procedure:* Request and stop the Aerail UE reporting in the Location Reproting Control, introduce two new code points and the thresholds values in the *Location Reporting Request Type* IE
* Aerial UE Flight information Reporting in the Location Report in the *User Location Information* IE;

Impact assessment towards the previous version of the specification (same release):This CR has an isolated impact towards the previous version of the specification (same release). |
|  |  |
| ***Consequences if not approved:*** | No support for Aerial UE flight information reporting from NG-RAN to CN for the Aerial UE. |
|  |  |
| ***Clauses affected:*** | 8.12.1, 8.12.2, 8.12.3, 9.2.12, 9.3.1.16, 9.3.1.65. 9.3.1.xx, 9.3.1.yy, 9.3.1.zz, 9.4.4, 9.4.5, 9.4.7 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.423 CR 1460TS 38.300 draft 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:*** | Rev 7: remove the text related to FFSRev 6: resubmission for R3#129. |

## 8.12 Location Reporting Procedures

### 8.12.1 Location Reporting Control

#### 8.12.1.1 General

The purpose of the Location Reporting Control procedure is to allow the AMF to request the NG-RAN node to report the UE's current location, or the UE's last known location with time stamp, or the UE's presence in the area of interest while in CM-CONNECTED state, or the Aerial UE’s flight information as specified in TS 23.501 [9] and TS 23.502 [10]. The procedure uses UE-associated signalling.

#### 8.12.1.2 Successful Operation



Figure 8.12.1.2-1: Location reporting control

The AMF initiates the procedure by sending a LOCATION REPORTING CONTROL message to the NG-RAN node. On receipt of the LOCATION REPORTING CONTROL message the NG-RAN node shall perform the requested location reporting control action for the UE.

The *Location Reporting Request Type* IE indicates to the NG-RAN node whether:

- to report directly;

- to report upon change of serving cell;

- to report UE presence in the area of interest;

- to stop reporting at change of serving cell;

- to stop reporting UE presence in the area of interest;

- to cancel location reporting for the UE;

- to report upon change of serving cell and to report UE presence in the area of interest.

- to report flight information for the Aerial UE;

- to cancel flight information reporting for the Aerial UE;

If the *Area Of Interest List* IE is included in the *Location Reporting Request Type* IE in the LOCATION REPORTING CONTROL message, the NG-RAN node shall store this information and use it to track the UE's presence in the area of interest as defined in TS 23.502 [10].

NOTE: The NG-RAN reports the UE presence for all set of Location Reporting Reference IDs for inter-NG-RAN node handover.

If the *Additional Location Information* IE is included in the LOCATION REPORTING CONTROL message and set to "Include PSCell” then, if Dual Connectivity is activated, the NG-RAN node shall include the current PSCell in the report. If a report upon change of serving cell is requested, the NG-RAN node shall provide the report also whenever the UE changes the PSCell, and when Dual Connectivity is activated.

If reporting upon change of serving cell is requested, the NG-RAN node shall send a report immediately and shall send a report whenever the UE’s location changes.

If the *Event Type* IE is set to "stop UE presence in the area of interest", and if the *Additional Cancelled Location Reporting Reference ID List* IE is included in the *Location Reporting Request Type* IE within the LOCATION REPORTING CONTROL message, the NG-RAN node shall, if supported, stop reporting UE presence for all received Location Reporting Reference IDs.

If the *Event Type* IE is present as “report aerial UE flight information”, and the *Aerial UE Flight Information report control* IE is included in the *Location Reporting Request Type* IE in the LOCATION REPORTING CONTROL message, the NG-RAN node shall, if supported, store this information and use it to report the aerial UE flight information as defined in TS 23.502 [10].

####

#### 8.12.1.3 Abnormal Conditions

**Interactions with Location Reporting Failure Indication procedure:**

If the NG-RAN node receives a LOCATION REPORTING CONTROL message containing several *Location Reporting Reference ID* IE set to the same value, the NG-RAN node shall send the LOCATION REPORTING FAILURE INDICATION message with an appropriate cause value.

If the *Location Reporting Request Type* IE in the received LOCATION REPORTING CONTROL message contains the *Event Type* IE set to neither "UE presence in the area of interest" nor "change of serving cell and UE presence in the area of interest", but the *Area of Interest List* IE is present, the NG-RAN node shall ignore the *Area of Interest List* IE. and proceed with the Location Reporting Procedure.

### 8.12.3 Location Report

#### 8.12.3.1 General

The purpose of the Location Report procedure is to provide the UE's current location, the UE's last known location with time stamp, or the UE's presence in the area of interest to the AMF. The procedure uses UE-associated signalling. For Aerial UE, the Location Reporting procedure is to provide the UE’s flight formation.

#### 8.12.3.2 Successful Operation



Figure 8.12.3.2-1: Location report

The NG-RAN node initiates the procedure by sending a LOCATION REPORT message to the AMF. The LOCATION REPORT message may be used as a response to the LOCATION REPORTING CONTROL message.

#### 8.12.3.3 Abnormal Conditions

Void.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Skip to Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 9.2.11 Location Reporting Messages

#### 9.2.11.1 LOCATION REPORTING CONTROL

This message is used by the AMF to request the NG-RAN node to report the location of the UE.

Direction: AMF → NG-RAN node

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | ignore |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | reject |
| RAN UE NGAP ID | M |  | 9.3.3.2 |  | YES | reject |
| Location Reporting Request Type | M |  | 9.3.1.65 |  | YES | ignore |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Skip to Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 9.3.1.16 User Location Information

This IE is used to provide location information of the UE and the flight information of the Aerial UE.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| CHOICE *User Location Information* | M |  |  |  | - |  |
| *>E-UTRA user location information* |  |  |  |  |  |  |
| >>E-UTRA CGI | M |  | 9.3.1.9 |  | - |  |
| >>TAI | M |  | 9.3.3.11 |  | - |  |
| >>Age of Location | O |  | Time Stamp9.3.1.75 | Indicates the UTC time when the location information was generated. | - |  |
| >>PSCell Information | O |  | NG-RAN CGI9.3.1.73 |  | YES | ignore |
| *>NR user location information* |  |  |  |  |  |  |
| >>NR CGI | M |  | 9.3.1.7 |  | - |  |
| >>TAI | M |  | 9.3.3.11 | This IE is ignored if the NR NTN TAI Information IE is present. | - |  |
| >>Age of Location | O |  | Time Stamp9.3.1.75 | Indicates the UTC time when the location information was generated. | - |  |
| >>PSCell Information | O |  | NG-RAN CGI9.3.1.73 |  | YES | ignore |
| >>NID | O |  | 9.3.3.42 |  | YES | reject |
| >>NR NTN TAI Information | O |  | 9.3.3.53 |  | YES | ignore |
| >>Mobile IAB-MT User Location Information | O |  | 9.3.1.260 | Indicates the user location information of a mobile IAB-MT, which is co-located with the mobile IAB-DU which serves the UE. | YES | ignore |
| >> Aerial UE Flight information Reporting | O |  | 9.3.1.xx |  | YES | ignore |
| *>N3IWF user location information with port number* |  |  |  |  |  |  |
| >>IP Address | M |  | Transport Layer Address 9.3.2.4 | UE's local IP address used to reach the N3IWF | - |  |
| >>Port Number | M |  | OCTET STRING(SIZE(2)) | UDP source port number if NAT is detected. | - |  |
| >>TAI | O |  | 9.3.3.11 |  | YES | ignore |
| *>TNGF user location information* |  |  |  |  | YES | ignore |
| >>TNAP ID | M |  |  OCTET STRING | TNAP Identifier used to identify the TNAP. Details in TS 29.571 [35]. | - |  |
| >>IP Address | M |  | Transport Layer Address 9.3.2.4 | UE's local IP address used to reach the TNGF. | - |  |
| >>Port Number | O |  | OCTET STRING(SIZE(2)) | UDP source port number if NAT is detected. | - |  |
| >>TAI | O |  | 9.3.3.11 |  | YES | ignore |
| *>TWIF user location information* |  |  |  |  | YES | ignore |
| >>TWAP ID | M |  | OCTET STRING | TWAP Identifier used to identify the TWAP. Details in TS 29.571 [35]. | - |  |
| >>IP Address | M |  | Transport Layer Address 9.3.2.4 | Non-5G-Capable over WLAN device's local IP address used to reach the TWIF. | - |  |
| >>Port Number | O |  | OCTET STRING(SIZE(2)) | UDP source port number if NAT is detected. | - |  |
| >>TAI | O |  | 9.3.3.11 |  | YES | ignore |
| *>W-AGF user location information* |  |  |  | Indicates the location information via wireline access as specified in TS 23.316 [34]. | YES | ignore |
| >>W-AGF user location information | M |  | 9.3.1.164 |  | - |  |
| *>N3IWF user location information without port number* |  |  |  |  | YES | ignore |
| >>IP Address | M |  | Transport Layer Address 9.3.2.4 | UE's local IP address used to reach the N3IWF. | - |  |
| >>TAI | O |  | 9.3.3.11 |  | - |  |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Skip to Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 9.3.1.65 Location Reporting Request Type

This IE indicates the type of location request to be handled by the NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Event Type | M |  | ENUMERATED (direct, change of serving cell, UE presence in the area of interest, stop change of serving cell, stop UE presence in the area of interest, cancel location reporting for the UE, … change of serving cell and UE presence in the area of interest, report the Aerial UE flight information, cancel the Aerial UE flight information reporting) |  | - |  |
| Report Area | M |  | ENUMERATED (cell, …) |  | - |  |
| **Area of Interest List** |  | *0..1* |  |  | - |  |
| **>Area of Interest Item** |  | *1..<maxnoofAoI>* |  |  | - |  |
| >>Area of Interest | M |  | 9.3.1.66 |  | - |  |
| >>Location Reporting Reference ID | M |  | 9.3.1.76 |  | - |  |
| Location Reporting Reference ID to be Cancelled | C- ifEventTypeisStopUEPresinAoI |  | Location Reporting Reference ID9.3.1.76 |  | - |  |
| Additional Location Information | O |  | ENUMERATED (Include PSCell, ...) |  | YES | ignore |
| **Additional Cancelled Location Reporting Reference ID List** |  | *0..1* |  |  | YES | reject |
| **>Additional Cancelled Location Reporting Reference ID Item** |  | *1..<maxnoofAoIMinusOne>* |  |  | - |  |
| >>Location Reporting Reference ID to be Cancelled | M |  | Location Reporting Reference ID9.3.1.76 |  | - |  |
| Aerial UE Flight Information Reporting Control | O |  | 9.3.1.yy | . | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofAoI | Maximum no. of areas of interest. Value is 64. |
| maxnoofAoIMinusOne | Maximum no. of areas of interest minus one. Value is 63. |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifEventTypeisStopUEPresinAoI | This IE shall be present if the *Event Type* IE is set to the value "stop UE presence in the area of interest". |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Skip to Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 9.3.1.xx Aerial UE Flight information Reporting

This IE contains the aerial UE altitude reporting information.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Altitude | M |  | 9.3.1.ZZ  |  |
| Time Stamp | M |  | 9.3.1.75 | Indicates the UTC time when the aerial UE flight information is received. |

#### 9.3.1.yy Aerial UE Flight Information Reporting Control

This IE indicates Aerial UE flight information reporting information.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| --- | --- | --- | --- | --- |
| Higher Altitude Threshold  | M |  | Altitude9.3.1.ZZ  | Indicates the higher altitude threshold information for the Aerial UE reporting. |
| Lower Altitude Threshold | M |  | Altitude9.3.1.ZZ  | Indicates the lower altitude threshold information for the Aerial UE reporting. |
| Reporting Periodicity | O |  | ENUMERATED {ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240, ms20480, ms40960, min1, min6, min12, min30, …} | Indicates the periodicity of the Aerial UE reporting. |

#### 9.3.1.ZZ Altitude

This IE contains Altitude information.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Altitude | M |  | INTEGER(-420..10000, ...) | Aerial UE altitude information as specified in TS 38.331[18]. The unit of this IE is meter |

###

### 9.4.5 Information Element Definitions

-- ASN1START

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

--

-- Information Element Definitions

--

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

NGAP-IEs {

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

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

 id-AdditionalDLForwardingUPTNLInformation,

 id-AdditionalULForwardingUPTNLInformation,

 id-AdditionalDLQosFlowPerTNLInformation,

 id-AdditionalDLUPTNLInformationForHOList,

 id-AdditionalNGU-UP-TNLInformation,

 id-AdditionalRedundantDL-NGU-UP-TNLInformation,

 id-AdditionalRedundantDLQosFlowPerTNLInformation,

 id-AdditionalRedundantNGU-UP-TNLInformation,

 id-AdditionalRedundantUL-NGU-UP-TNLInformation,

 id-AdditionalUL-NGU-UP-TNLInformation,

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Skip to Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 id-MN-only-MDT-collection,

 id-XrDeviceWith2Rx,

 id-MaximumDataBurstVolume,

 id-MBS-NGUFailureIndication,

 id-UserPlaneFailureIndication,

 id-UserPlaneFailureIndicationReport,

 id-QoERVQoEReportingPaths,

 id-UserLocationInformationN3IWF-without-PortNumber,

 id-Aerial-UE-FlightInformationReporting，

 id-Aerial-UE-FlightInformationReportingContol，

 maxnoofAllowedAreas,

 maxnoofAllowedCAGsperPLMN,

 maxnoofAllowedS-NSSAIs,

 maxnoofAoIMinusOne,

 maxnoofBluetoothName,

 maxnoofBPLMNs,

 maxnoofCAGforMDT,

 maxnoofCAGSperCell,

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Skip to Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

EventType ::= ENUMERATED {

 direct,

 change-of-serve-cell,

 ue-presence-in-area-of-interest,

 stop-change-of-serve-cell,

 stop-ue-presence-in-area-of-interest,

 cancel-location-reporting-for-the-ue,

 ...,

 change-of-serving-cell-and-UE-presence-in-the-Area-of-Interest,

 report-the-Aerial-UE-flight-information,

 cancel-the-Aerial-UE-flight-information-reporting

}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Skip to Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LocationReportingRequestType ::= SEQUENCE {

 eventType EventType,

 reportArea ReportArea,

 areaOfInterestList AreaOfInterestList OPTIONAL,

 locationReportingReferenceIDToBeCancelled LocationReportingReferenceID OPTIONAL,

-- The above IE shall be present if the Event Type IE is set to the value “stop UE presence in the area of interest”

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

 ...

}

LocationReportingRequestType-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 { ID id-LocationReportingAdditionalInfo CRITICALITY ignore EXTENSION LocationReportingAdditionalInfo PRESENCE optional }|

 { ID id-AdditionalCancelledlocationReportingReferenceIDList CRITICALITY reject EXTENSION AdditionalCancelledlocationReportingReferenceIDList PRESENCE optional }|

 { ID id-Aerial-UE-FlightInformationReportingContol CRITICALITY ignore EXTENSION Aerial-UE-FlightInformationReportingContol PRESENCE optional},

 ...

}

Aerial-UE-FlightInformationReportingContol ::= SEQUENCE {

 higher-Altitude-Threshold Altitude,

 lower-Altitude-Threshold Altitude,

 report-periodicity ReportingPeriodicity OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {Aerial-UE-FlightInformationReportingContol-ExtIEs}} OPTIONAL,

 ...

}

Aerial-UE-FlightInformationReportingContol-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Skip to Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

UserLocationInformation ::= CHOICE {

 userLocationInformationEUTRA UserLocationInformationEUTRA,

 userLocationInformationNR UserLocationInformationNR,

 userLocationInformationN3IWF-with-PortNumber UserLocationInformationN3IWF-with-PortNumber,

 choice-Extensions ProtocolIE-SingleContainer { {UserLocationInformation-ExtIEs} }

}

UserLocationInformation-ExtIEs NGAP-PROTOCOL-IES ::= {

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

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

 { ID id-UserLocationInformationW-AGF CRITICALITY ignore TYPE UserLocationInformationW-AGF PRESENCE mandatory }|

 { ID id-UserLocationInformationN3IWF-without-PortNumber CRITICALITY ignore TYPE UserLocationInformationN3IWF-without-PortNumber PRESENCE mandatory },

 ...

}

UserLocationInformationEUTRA ::= SEQUENCE {

 eUTRA-CGI EUTRA-CGI,

 tAI TAI,

 timeStamp TimeStamp OPTIONAL,

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

 ...

}

UserLocationInformationEUTRA-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 { ID id-PSCellInformation CRITICALITY ignore EXTENSION NGRAN-CGI PRESENCE optional},

 ...

}

UserLocationInformationN3IWF-with-PortNumber ::= SEQUENCE {

 iPAddress TransportLayerAddress,

 portNumber PortNumber,

 iE-Extensions ProtocolExtensionContainer { {UserLocationInformationN3IWF-with-PortNumber-ExtIEs} } OPTIONAL,

 ...

}

UserLocationInformationN3IWF-with-PortNumber-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

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

 ...

}

UserLocationInformationN3IWF-without-PortNumber ::= SEQUENCE {

 iPAddress TransportLayerAddress,

 tAI TAI OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { UserLocationInformationN3IWF-without-PortNumber-ExtIEs} } OPTIONAL,

 ...

}

UserLocationInformationN3IWF-without-PortNumber-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UserLocationInformationTNGF ::= SEQUENCE {

 tNAP-ID TNAP-ID,

 iPAddress TransportLayerAddress,

 portNumber PortNumber OPTIONAL,

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

 ...

}

UserLocationInformationTNGF-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

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

 ...

}

UserLocationInformationTWIF ::= SEQUENCE {

 tWAP-ID TWAP-ID,

 iPAddress TransportLayerAddress,

 portNumber PortNumber OPTIONAL,

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

 ...

}

UserLocationInformationTWIF-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

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

 ...

}

UserLocationInformationW-AGF ::= CHOICE {

 globalLine-ID GlobalLine-ID,

 hFCNode-ID HFCNode-ID,

 choice-Extensions ProtocolIE-SingleContainer { { UserLocationInformationW-AGF-ExtIEs} }

}

UserLocationInformationW-AGF-ExtIEs NGAP-PROTOCOL-IES ::= {

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

 { ID id-HFCNode-ID-new CRITICALITY ignore TYPE HFCNode-ID-new PRESENCE mandatory }|

 { ID id-GlobalCable-ID-new CRITICALITY ignore TYPE GlobalCable-ID-new PRESENCE mandatory },

 ...

}

UserLocationInformationNR ::= SEQUENCE {

 nR-CGI NR-CGI,

 tAI TAI,

 timeStamp TimeStamp OPTIONAL,

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

 ...

}

UserLocationInformationNR-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 { ID id-PSCellInformation CRITICALITY ignore EXTENSION NGRAN-CGI PRESENCE optional }|

 { ID id-NID CRITICALITY reject EXTENSION NID PRESENCE optional }|

 { ID id-NRNTNTAIInformation CRITICALITY ignore EXTENSION NRNTNTAIInformation PRESENCE optional }|

 { ID id-MobileIAB-MTUserLocationInformation CRITICALITY ignore EXTENSION MobileIAB-MTUserLocationInformation PRESENCE optional }|

 { ID id-Aerial-UE-FlightInformationReporting CRITICALITY ignore EXTENSION Aerial-UE-FlightInformationReporting PRESENCE optional },

 ...

}

Aerial-UE-FlightInformationReporting ::= SEQUENCE {

 altitude Altitude,

 timeStamp TimeStamp,

 iE-Extensions ProtocolExtensionContainer { {Aerial-UE-FlightInformationReporting -ExtIEs} } OPTIONAL,

 ...

}

Aerial-UE-FlightInformationReporting -ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

Altitude ::= INTEGER (-420..10000, ...)

ReportingPeriodicity ::= ENUMERATED {ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240, ms20480, ms40960, min1, min6, min12, min30, ...}

### 9.4.7 Constant Definitions

-- ASN1START

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

--

-- Constant definitions

--

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

NGAP-Constants {

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

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

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

--

-- IE parameter types from other modules.

--

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

IMPORTS

 ProcedureCode,

 ProtocolIE-ID

FROM NGAP-CommonDataTypes;

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Skip to Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 id-UserPlaneFailureIndication ProtocolIE-ID ::= 435

 id-UserPlaneFailureIndicationReport ProtocolIE-ID ::= 436

 id-SourceSN-to-TargetSN-QMCInfo ProtocolIE-ID ::= 437

 id-QoERVQoEReportingPaths ProtocolIE-ID ::= 438

 id-UserLocationInformationN3IWF-without-PortNumber ProtocolIE-ID ::= 439

 id-AUN3DeviceAccessInfo ProtocolIE-ID ::= 440

 id-Aerial-UE-FlightInformationReporting ProtocolIE-ID ::= 4xy

 id-Aerial-UE-FlightInformationReportingContol ProtocolIE-ID ::= 4xz

END

-- ASN1STOP