**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** |  | **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 |  | Core Network | **X** |

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|  |
| ***Title:***  |  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***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 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:*** | MDF cell site reports contain Cell Information which consists of both cell site information and cell radio information however, the current location structures include cell site information. There is currently no way to send the cell radio information in the location structure, and sending it outside of the location structure would result in location information being delivered when it may not be authorized. This contribution updates the location structures to include cell radio information. |
|  |  |
| ***Summary of change:*** | Updates the location structure to include cell radio related information. |
|  |  |
| ***Consequences if not approved:*** | It will not be possible to send cell radio related information without a separate MDF cell site report. |
|  |  |
| ***Clauses affected:*** | 7.3.2.2, 7.3.3.2.5, 7.3.3.2.6, attachment TS33128Payloads.asn |
|  |  |
|  | **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 is associated with the following changes in the Forge:Merge request: [!293](https://forge.3gpp.org/rep/sa3/li/-/merge_requests/293) Commit hash: [d144c3c479620cf97408e1d8524d92aa0c764370](https://forge.3gpp.org/rep/sa3/li/-/merge_requests/293/diffs?commit_id=d144c3c479620cf97408e1d8524d92aa0c764370) |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\* START OF FIRST CHANGE (MAIN DOCUMENT) \*\*\*\*

7.3.2.2 Delivery of cell site information over LI\_HI2

The cell site information is encoded as the cellSiteInformation ASN.1 parameter and delivered either within the location field of an IRI message carrying the respective cell identity, or in a stand-alone IRI message containing the MDFCellSiteReport record.

The cell radio related information is encoded as the cellRadioRelatedInformation ASN.1 parameter and delivered with the cell information parameter.

The MDF2 shall use the IRI message containing the MDFCellSiteReportrecord to convey cell site information and cell radio related information retrieved asynchronously with the sending of the IRI message that caused the retrieval. The MDFCellSiteReport record shall be delivered as an IRI REPORT (see ETSI TS 102 232-1 [9] clause 5.2.10) and allocated the same CIN, if any, as the IRI message that caused the retrieval.

When the cell site information and cell radio related information are readily available at MDF2 or are retrieved synchronously (i.e. blocking the sending of the IRI message until the retrieval is complete), the cell site information shall be conveyed within the location field of the IRI message that caused the retrieval.

The cell site information and associated cell radio related information for multiple cell identities can be delivered to the LEMF within an IRI message that carries the respective cell identities or within the IRI message containing the MDFCellSiteReport record (see Annex A).

The MDF2 generating the IRI message MDFCellSiteReport shall set the Payload Direction field in the PDU header to *not applicable* (Direction Value 5, see ETSI TS 103 221-2 [8] clause 5.2.6).

The MDFCellSiteReport consists of a sequence of cellInformation as described in the following tables.

**Table 7.3.2.2-1: Payload for CellInformation Parameter**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| rANCGI | RANCGI | 1 | The RAN CGI for the cell being reported. | M |
| cellSiteInformation | CellSiteInformation | 0..1 | Contains location information for the cell site being reported. Shall be present if known at the NF where the POI is located or at the MDF. | C |
| timeOfLocation | Timestamp | 0..1 | The time the cell site information was determined. | C |
| cellRadioRelatedInformation | CellRadioRelatedInformation | 0..1 | Radio Information of reported cell to include either NG Information, F1 Information, or S1 Information. | C |
| Band | RFBand | 0..1 | RFBand of reported cell. | C |

**Table 7.3.2.2-2: Payload for CellSiteInformation Parameter**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| geographicalCoordinates | GeographicalCoordinates | 1 | The coordinates for the cell site being reported. | M |
| azimuth | INTEGER (0..359) | 0..1 | Contains the centre azimuth for the sector being reported. Shall be present if known. | C |
| operatorSpecificInformation | UTF8String | 0..1 | Information specific to the operator reporting the cell site information. | C |

**Table 7.3.2.2-3: Definition of Choices for CellRadioRelatedInformation Parameter**

|  |  |  |
| --- | --- | --- |
| **Field name** | **Type** | **Description** |
| nGInformation | NGInformation | Information pertaining to the setup of the NG Interface. See TS 38.413 [23] clauses 9.2.6.1 and 9.2.6.2. |
| f1Information | F1Information | Information pertaining to the setup of the F1 Interface. See TS 38.473 [103] clauses 9.2.1.4 and 9.2.1.5. |
| s1Information | S1Information | Information pertaining to the setup of the S1Interface. See TS 36.413 [38] clauses 9.1.8.4 and 9.1.8.5. |

\*\*\*\* START OF FIRST CHANGE (MAIN DOCUMENT) \*\*\*\*

7.3.3.2.5 Type: EUTRALocation

The EUTRALocation type is derived from the data present in the EutraLocation type defined in TS 29.571 [17] clause 5.4.4.8.

Table 7.3.3.2.5-1 contains the details for the EUTRALocation type.

**Table 7.3.3.2.5-1: Definition of type EUTRALocation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| tAI | TAI | 1 | Tracking Area Identity of the target.If the TAI information is not available, the TAC of the TAI shall be set to one reserved value (e.g. 0x0000, see TS 23.003 [19] clause 19.4.2.3) and the value of the ignoreTAI parameter shall be set to TRUE. | M |
| eCGI | ECGI | 1 | E-UTRA Cell Identity for the cell where the target is located. | M |
| ageOfLocationInfo | AgeOfLocation | 0..1 | The value represents the elapsed time in minutes since the last network contact of the mobile station.Shall be present if known at the NF where the POI is located. | C |
| uELocationTimestamp | Timestamp | 0..1 | The value represents the UTC time when the EUTRALocation information was acquired. Shall be present if known at the NF where the POI is located. | C |
| geographicalInformation | UTF8String | 0..1 | Shall be present if known at the NF where the POI is located. If present, this parameter shall be populated with the Hexadecimal value of the location encoded as described in TS 23.032 [104] clauses 6 and 7.3.  | C |
| geodeticInformation | UTF8String | 0..1 | Shall be present if known at the NF where the POI is located. If present, this parameter shall be populated with the Hexadecimal value of the location encoded as described in ITU-T Recommendation Q.763 (1999) [105] clause 3.88. | C |
| globalNGENbID | GlobalRANNodeID | 0..1 | Indicates the global identity of the ng-eNodeB in which the UE is currently located. Shall be present if known at the NF where the POI is located. | C |
| cellSiteInformation | CellSiteInformation | 0..1 | Contains location information for the cell site being reported. Shall be present if known at the NF where the POI is located or known at the MDF. | C |
| globalENbID | GlobalRANNodeID | 0..1 | Indicates the global identity of the eNodeB in which the UE is currently located. Shall be present if known at the NF where the POI is located. | C |
| ignoreTAI | BOOLEAN | 0..1 | This flag, when present, shall indicate if the tAI shall be ignored.When present, it shall be set as follows: - TRUE: tAI shall be ignored.- FALSE: tAI shall not be ignored. | C |
| ignoreECGI | BOOLEAN | 0..1 | This flag, when present, shall indicate if the eCGI shall be ignored.When present, it shall be set as follows: - TRUE: eCGI shall be ignored. - FALSE: eCGI shall not be ignored. | C |
| cellRadioRelatedInformation | SEQUENCE OF CellRadioRelatedInformation | 0..MAX | Radio Information of reported cell. | C |

7.3.3.2.6 Type: NRLocation

The NRLocation type is derived from the data present in the NrLocation type defined in TS 29.571 [17] clause 5.4.4.9.

Table 7.3.3.2.6-1 contains the details for the NRLocation type.

**Table 7.3.3.2.6-1: Definition of type NRLocation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| tAI | TAI | 1 | Tracking Area Identity of the target.If the TAI information is not available, the TAC of the TAI shall be set to one reserved value (e.g. 0x0000, see TS 23.003 [19] clause 19.4.2.3). | M |
| nCGI | NCGI | 1 | NR Cell Identity for the cell where the target is located. | M |
| ageOfLocationInfo | AgeOfLocation | 0..1 | The value represents the elapsed time in minutes since the last network contact of the mobile station.Shall be present if known at the NF where the POI is located. | C |
| uELocationTimestamp | Timestamp | 0..1 | The value represents the UTC time when the NRLocation information was acquired. Shall be present if known at the NF where the POI is located. | C |
| geographicalInformation | UTF8String | 0..1 | Shall be present if known at the NF where the POI is located. If present, this parameter shall be populated with the Hexadecimal value of the location encoded as described in TS 23.032 [104] clauses 6 and 7.3. | C |
| geodeticInformation | UTF8String | 0..1 | Shall be present if known at the NF where the POI is located. If present, this parameter shall be populated with the Hexadecimal value of the location encoded as described in ITU-T Recommendation Q.763 (1999) [105] clause 3.88. | C |
| globalGNbID | GlobalRANNodeID | 0..1 | Indicates the global identity of the gNodeB in which the UE is currently located. Shall be present if known at the NF where the POI is located. | C |
| cellSiteInformation | CellSiteInformation | 0..1 | Contains location information for the cell site being reported. Shall be present if known at the NF where the POI is located or known at the MDF. | C |
| ignoreNCGI | BOOLEAN | 0..1 | This flag, when present, shall indicate if the nCGI shall be ignored.When present, it shall be set as follows:- TRUE: nCGI shall be ignored.- FALSE: nCGI shall not be ignored. | C |
| nRNTNTAIInfo | NRNTNTAIInfo | 0..1 | Contains NR NTN TAI Information. When present the TAI is set to the reserved value and shall be ignored by the receiver. See TS 29.571 [17] clause 5.4.4.9 and TS 38.413 [23] clause 9.3.3.53. | C |
| iABMTUserLocation | IABMTUserLocation | 0..1 | Indicates the user location information of a mobile IAB-MT which is co-located with the UE’s serving IAB Cell. See TS 38.413 [23] clause 9.3.1.260. | C |
| cellRadioRelatedInformation | SEQUENCE OF CellRadioRelatedInformation | 0..MAX | Radio Information of reported cell. | C |

**Table 7.3.3.2.6-2: Structure of NTNTAIInfo Parameter**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| servingPLMN | PLMNID | 1 | Indicates the PLMN currently serving the target. | M |
| tACListNRNTN | TAC | 1..MAX | Provides the available TAC List for the NTN connection of the target. | M |
| uELocationDerivedNTNTAC | TAC | 0..1 | Contains information derived from the actual UE location, if available. | C |

**Table 7.3.3.2.6-3: Structure of IABMTUserLocation Parameter**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| nRCGI | NCGI | 1 | Provides the NCGI of the cell serving the mobile IAB-MT. | M |
| tAI | TAI | 0..1 | Provides the TAI supported by the cell which is serving the mobile IAB-MT. | C |

\*\*\*\* END OF MAIN DOCUMENT CHANGES \*\*\*\*

\*\*\*\* START OF FIRST CHANGE (ATTACHMENTS) \*\*\*\*

---a/33128/r19/TS33128Payloads.asn
+++b/33128/r19/TS33128Payloads.asn

@@ -6574,7 +6574,8 @@ EUTRALocation ::= SEQUENCE

6574 6574 cellSiteInformation [8] CellSiteInformation OPTIONAL,

6575 6575 globalENbID [9] GlobalRANNodeID OPTIONAL,

6576 6576 ignoreTAI [10] BOOLEAN OPTIONAL,

6577 - ignoreECGI [11] BOOLEAN OPTIONAL

 6577 + ignoreECGI [11] BOOLEAN OPTIONAL,

 6578 + cellRadioRelatedInformation [12] SEQUENCE OF CellRadioRelatedInformation OPTIONAL

6578 6579 }

6579 6580

6580 6581 -- TS 29.571 [17], clause 5.4.4.9

@@ -6590,7 +6591,8 @@ NRLocation ::= SEQUENCE

6590 6591 cellSiteInformation [8] CellSiteInformation OPTIONAL,

6591 6592 ignoreNCGI [9] BOOLEAN OPTIONAL,

6592 6593 nRNTNTAIInfo [10] NRNTNTAIInfo OPTIONAL,

6593 - iABMTUserLocation [11] IABMTUserLocation OPTIONAL

 6594 + iABMTUserLocation [11] IABMTUserLocation OPTIONAL,

 6595 + cellRadioRelatedInformation [12] SEQUENCE OF CellRadioRelatedInformation OPTIONAL

6594 6596 }

6595 6597

6596 6598 -- TS 29.571 [17], clause 5.4.4.10

@@ -6758,7 +6760,8 @@ CellInformation ::= SEQUENCE

6758 6760 CellRadioRelatedInformation ::= CHOICE

6759 6761 {

6760 6762 nGInformation [1] NGInformation,

6761 - f1Information [2] F1Information

 6763 + f1Information [2] F1Information,

 6764 + s1Information [3] S1Information

6762 6765 }

6763 6766

6764 6767 RFBand ::= UTF8String

\*\*\*\* END OF ALL CHANGES \*\*\*\*