**3GPP TSG-SA5 Meeting #157 *S5-246180***

**Hyderabad, India, 14 – 18 October 2024**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **28.104** | **CR** | **0132** | **rev** | **1** | **Current version:** | **17.9.0** |  |
|  |
| *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)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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|  |
| ***Title:***  | Rel-17 CR TS 28.104 Fixing the non-existing datatype - "List" |
|  |  |
| ***Source to WG:*** | Nokia |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | eMDAS |  | ***Date:*** | 2024-02-10 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-17 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | The attribute “radioEnvironmentMap” is defined as a datatype called “List” but no such datatype exist. This need to be corrected. |
|  |  |
| ***Summary of change:*** | Replacing “List with new custom datatype |
|  |  |
| ***Consequences if not approved:*** | Specification cannot be implemented due to the usage of non-existing datatype. |
|  |  |
| ***Clauses affected:*** | 8.4.1.1.38.5.x, 8.5.y (new clauses addded) |
|  |  |
|  | **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 First change***

##### 8.4.1.1.3 Analytics output

The specific information elements of the analytics output for coverage problem analysis, in addition to the common information elements of the analytics outputs (see clause 8.3), are provided in table 8.4.1.1.3-1.

Table 8.4.1.1.3-1: Analytics output for coverage problem analysis

| Information element | Definition | Support qualifier | Properties |
| --- | --- | --- | --- |
| coverageProblemId | The identifier of the coverage problem. | M | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| coverageProblemType | Indication of type of the coverage Problem.allowedValues: WeakCoverage, CoverageHole, PilotPollution, Overshoot coverage, DlUlChannelCoverageMismatch, Other. | M | type: enumerationmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| coverageProblemAreas | Geographical location areas where the coverage problem occurred.  | O | type: GeoArea (see TS 28.622 [19])multiplicity: \*isOrdered: FalseisUnique: TruedefaultValue: NoneisNullable: False |
| problematicCells | The CGIs of cells where the coverage problem occurred.  | M | type: Integermultiplicity: \*isOrdered: FalseisUnique: TruedefaultValue: NoneisNullable: False |
| recommendedActions | The recommended actions to solve the coverage problem.The recommended action may be (but not limited to):- creation of new beam(s), or cell(s);- change the transmission power of the NR sector carrier;- delete some unwanted beam(s) or cell(s). | M | type: RecommendedActionmultiplicity: \*isOrdered: FalseisUnique: TruedefaultValue: NoneisNullable: False |
| radioEnvironmentMap | The graphical description of the observed radio coverage characteristics. The graphic may be for the RSRP or SINR of the selected cluster of cells mapped against the physical geographical information (longitude, latitude, altitude) of the area where the RAN (NG-RAN and E-UTRAN) cells are deployed. | O | type: RadioEnvironmentMapmultiplicity: \*isOrdered: FalseisUnique: TruedefaultValue: NoneisNullable: False |
| cellConfigurations | The cell configurations for a new cell or reconfigurations of existing cells derived based on the characteristics in the radioEnvironmentMap.The cell configurations are the changes to the NRMs attributes affecting the cell coverage (NG-RAN and E-UTRAN). | O | type: may differ as defined inNRCellDU IOC, NRSectorCarrier IOC, BWP IOC, CommonBeamformingFunction IOC, and Beam IOC in TS 28.541 [15];EUtranGenericCell IOC in TS 28.658 [16]; SectorEquipmentFunction IOC, AntennaFunction IOC, and TMAFunction IOC in TS 28.662 [17].multiplicity: \*isOrdered: FalseisUnique: TruedefaultValue: NoneisNullable: False |

***Start of next change***

### 8.5.y CoverageCharacterization <<choice>>

#### 8.5.y.1 Definition

This choice defines the coverage characterization in terms of wither RSRP or SINR.

#### 8.5.y.2 Information elements

Table 8.5.y.2-1

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Definition | Support qualifier | Properties |
| rsrp | This specifies the RSRP value. | M | type: Realmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| sinr | This specifies the SINR value. | M | type: Realmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |

### 8.5.x RadioEnvironmentMap <<datatype>>

#### 8.5.x.1 Definition

This data type specifies the graphical description of the observed radio coverage characteristics. The graphic may be for the RSRP or SINR of the selected cluster of cells mapped against the physical geographical information (longitude, latitude, altitude) of the area where the RAN (NG-RAN and E-UTRAN) cells are deployed.

#### 8.5.x.2 Information elements

Table 8.5.x.2-1

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Definition | Support qualifier | Properties |
| geoCoordinate | This specifies the geo coordinates of a geographical location. | M | type: GeoCordinate (see TS 28.622 [19])multiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| coverageCharacterization | This specifies the coverage characterization using either RSRP or SINR. | M | type: CoverageCharacterizationmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |

***End of Changes***