**3GPP TSG-CT WG4 Meeting #98eC4-203323**

**E-Meeting, 02nd – 12th June 2020**

|  |
| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **29.571** | **CR** | **0224** | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  |
| *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)*.* |
|  |

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

|  |
| --- |
|  |
| ***Title:***  | Correcting Tai Ecgi Ncgi definitions |
|  |  |
| ***Source to WG:*** | Qualcomm Incorporated |
| ***Source to TSG:*** | CT4 |
|  |  |
| ***Work item code:*** | Vertical\_LAN |  | ***Date:*** | 2020-05-15 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | In CT4 93 and CT4 97e there was a need expressed that the common data types: Tai, Ecgi and Ncgi may not be unique in an SNPN for various use cases, and each of these needed to be augmented with Nid to fulfil those use cases. However, to achieve this, Nid was simply added to each of these data types. While this is a straightforward approach, it has two issues:1. Adding Nid to each of these data types overloads the well-understood meaning of these data types, e.g. a Tracking Area Identifier, by definition, does not have any use of Nid.
2. The overloaded definitions are also then in conflict with parallel CT4 definitions of each of these data types in TS 23.003.

Hence a clean approach to fulfil these use cases is remove Nid from each of the base data types and use it instead in APIs wherever needed. |
|  |  |
| ***Summary of change:*** | Nid is removed from the definitions of Tai, Ecgi and Ncgi. |
|  |  |
| ***Consequences if not approved:*** | Overloaded and conflicted definitions and usage of Tai, Ecgi, and Ncgi remain in CT4. |
|  |  |
| ***Clauses affected:*** | 5.4.4.4, 5.4.4.5, 5.4.4.6, A.2 |
|  |  |
|  | **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 introduces a backward compatible correction in the openAPI specification file. |
|  |  |
| ***This CR's revision history:*** | Updated the coversheet. |

# \*\*\* First change \*\*\*

5.4.4.4 Type: Tai

**Table 5.4.4.4-1: Definition of type Tai**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** |
| plmnId | PlmnId | M | 1 | PLMN Identity |
| tac | Tac | M | 1 | Tracking Area Code |
|  |  |  |  |  |

5.4.4.5 Type: Ecgi

**Table 5.4.4.5-1: Definition of type Ecgi**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** |
| plmnId | PlmnId | M | 1 | PLMN Identity |
| eutraCellId | EutraCellId | M | 1 | E-UTRA Cell Identity |
|  |  |  |  |  |

5.4.4.6 Type: Ncgi

**Table 5.4.4.6-1: Definition of type Ncgi**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** |
| plmnId | PlmnId | M | 1 | PLMN Identity |
| nrCellId | NrCellId | M | 1 | NR Cell Identity |
|  |  |  |  |  |

# \*\*\* Next change \*\*\*

## A.2 Data related to Common Data Types

openapi: 3.0.0

info:

 version: '1.2.0.alpha-4'

 title: 'Common Data Types'

 description: |

 Common Data Types for Service Based Interfaces.

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externalDocs:

 description: 3GPP TS 29.571 Common Data Types for Service Based Interfaces, version 16.3.0

 url: 'http://www.3gpp.org/ftp/Specs/archive/29\_series/29.571/'

paths: {}

components:

 schemas:

#

# Common Data Types for Generic usage definitiones as defined in clause 5.2

#

#

# COMMON SIMPLE DATA TYPES

#

 Binary:

 format: binary

 type: string

 BinaryRm:

 format: binary

 type: string

 nullable: true

 Bytes:

 format: byte

 type: string

 BytesRm:

 format: byte

 type: string

 nullable: true

 Date:

 format: date

 type: string

 DateRm:

 format: date

 type: string

 nullable: true

 DateTime:

 format: date-time

 type: string

 DateTimeRm:

 format: date-time

 type: string

 nullable: true

 DiameterIdentity:

 type: string

 pattern: '^([A-Za-z0-9]+([-A-Za-z0-9]+)\.)+[a-z]{2,}$'

 DiameterIdentityRm:

 type: string

 pattern: '^([A-Za-z0-9]+([-A-Za-z0-9]+)\.)+[a-z]{2,}$'

 nullable: true

 Double:

 format: double

 type: number

 DoubleRm:

 format: double

 type: number

 nullable: true

 DurationSec:

 type: integer

 DurationSecRm:

 type: integer

 nullable: true

 Float:

 format: float

 type: number

 FloatRm:

 format: float

 type: number

 nullable: true

 Int32:

 format: int32

 type: integer

 Int32Rm:

 format: int32

 type: integer

 nullable: true

 Int64:

 type: integer

 format: int64

 Int64Rm:

 format: int64

 type: integer

 nullable: true

 Ipv4Addr:

 type: string

 pattern: '^(([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])\.){3}([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])$'

 example: '198.51.100.1'

 Ipv4AddrRm:

 type: string

 pattern: '^(([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])\.){3}([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])$'

 example: '198.51.100.1'

 nullable: true

 Ipv4AddrMask:

 type: string

 pattern: '^(([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])\.){3}([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])(\/([0-9]|[1-2][0-9]|3[0-2]))$'

 example: '198.51.0.0/16'

 Ipv4AddrMaskRm:

 type: string

 pattern: '^(([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])\.){3}([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])(\/([0-9]|[1-2][0-9]|3[0-2]))$'

 example: '198.51.0.0/16'

 nullable: true

 Ipv6Addr:

 type: string

 allOf:

 - pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))$'

 - pattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))$'

 example: '2001:db8:85a3::8a2e:370:7334'

 Ipv6AddrRm:

 type: string

 allOf:

 - pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))$'

 - pattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))$'

 example: '2001:db8:85a3::8a2e:370:7334'

 nullable: true

 Ipv6Prefix:

 type: string

 allOf:

 - pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))(\/(([0-9])|([0-9]{2})|(1[0-1][0-9])|(12[0-8])))$'

 - pattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))(\/.+)$'

 example: '2001:db8:abcd:12::0/64'

 Ipv6PrefixRm:

 type: string

 allOf:

 - pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))(\/(([0-9])|([0-9]{2})|(1[0-1][0-9])|(12[0-8])))$'

 - pattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))(\/.+)$'

 nullable: true

 MacAddr48:

 type: string

 pattern: '^([0-9a-fA-F]{2})((-[0-9a-fA-F]{2}){5})$'

 MacAddr48Rm:

 type: string

 pattern: '^([0-9a-fA-F]{2})((-[0-9a-fA-F]{2}){5})$'

 nullable: true

 SupportedFeatures:

 type: string

 pattern: '^[A-Fa-f0-9]\*$'

 Uinteger:

 type: integer

 minimum: 0

 UintegerRm:

 type: integer

 minimum: 0

 nullable: true

 Uint16:

 type: integer

 minimum: 0

 maximum: 65535

 Uint16Rm:

 type: integer

 minimum: 0

 maximum: 65535

 nullable: true

 Uint32:

 format: int32

 type: integer

 minimum: 0

 Uint32Rm:

 format: int32

 type: integer

 minimum: 0

 nullable: true

 Uint64:

 format: int64

 type: integer

 minimum: 0

 Uint64Rm:

 format: int64

 type: integer

 minimum: 0

 nullable: true

 Uri:

 type: string

 UriRm:

 type: string

 nullable: true

 VarUeId:

 type: string

 pattern: '^(imsi-[0-9]{5,15}|nai-.+|msisdn-[0-9]{5,15}|extid-[^@]+@[^@]+|gci-.+|gli-.+|.+)$'

 VarUeIdRm:

 type: string

 pattern: '^(imsi-[0-9]{5,15}|nai-.+|msisdn-[0-9]{5,15}|extid-[^@]+@[^@]+|gci-.+|gli-.+|.+)$'

 nullable: true

 TimeZone:

 type: string

 TimeZoneRm:

 type: string

 nullable: true

 StnSr:

 type: string

 StnSrRm:

 type: string

 nullable: true

 CMsisdn:

 type: string

 pattern: '^[0-9]{5,15}$'

 CMsisdnRm:

 type: string

 pattern: '^[0-9]{5,15}$'

 nullable: true

 DayOfWeek:

 type: integer

 minimum: 1

 maximum: 7

 description: integer between and including 1 and 7 denoting a weekday. 1 shall indicate Monday, and the subsequent weekdays shall be indicated with the next higher numbers. 7 shall indicate Sunday.

 TimeOfDay:

 type: string

 description: String with format partial-time or full-time as defined in clause 5.6 of IETF RFC 3339. Examples, 20:15:00, 20:15:00-08:00 (for 8 hours behind UTC).

#

# COMMON ENUMERATED DATA TYPES

#

 PatchOperation:

 anyOf:

 - type: string

 enum:

 - add

 - copy

 - move

 - remove

 - replace

 - test

 - type: string

 UriScheme:

 anyOf:

 - type: string

 enum:

 - http

 - https

 - type: string

 ChangeType:

 anyOf:

 - type: string

 enum:

 - ADD

 - MOVE

 - REMOVE

 - REPLACE

 - type: string

 HttpMethod:

 anyOf:

 - type: string

 enum:

 - GET

 - POST

 - PUT

 - DELETE

 - PATCH

 - OPTIONS

 - HEAD

 - CONNECT

 - TRACE

 - type: string

 NullValue:

 enum:

 - null

#

# COMMON STRUCTURED DATA TYPES

#

 ProblemDetails:

 type: object

 properties:

 type:

 $ref: '#/components/schemas/Uri'

 title:

 type: string

 status:

 type: integer

 detail:

 type: string

 instance:

 $ref: '#/components/schemas/Uri'

 cause:

 type: string

 invalidParams:

 type: array

 items:

 $ref: '#/components/schemas/InvalidParam'

 minItems: 1

 supportedFeatures:

 $ref: '#/components/schemas/SupportedFeatures'

 Link:

 type: object

 properties:

 href:

 $ref: '#/components/schemas/Uri'

 LinkRm:

 type: object

 properties:

 href:

 $ref: '#/components/schemas/Uri'

 nullable: true

 PatchItem:

 type: object

 properties:

 op:

 $ref: '#/components/schemas/PatchOperation'

 path:

 type: string

 from:

 type: string

 value: {}

 required:

 - op

 - path

 LinksValueSchema:

 oneOf:

 - type: array

 items:

 $ref: '#/components/schemas/Link'

 minItems: 1

 - $ref: '#/components/schemas/Link'

 SelfLink:

 type: object

 properties:

 self:

 $ref: '#/components/schemas/Link'

 required:

 - self

 InvalidParam:

 type: object

 properties:

 param:

 type: string

 reason:

 type: string

 required:

 - param

 ChangeItem:

 type: object

 properties:

 op:

 $ref: '#/components/schemas/ChangeType'

 path:

 type: string

 from:

 type: string

 origValue: {}

 newValue: {}

 required:

 - op

 - path

 NotifyItem:

 type: object

 required:

 - resourceId

 - changes

 properties:

 resourceId:

 $ref: '#/components/schemas/Uri'

 changes:

 type: array

 items:

 $ref: '#/components/schemas/ChangeItem'

 minItems: 1

 ComplexQuery:

 oneOf:

 - $ref: '#/components/schemas/Cnf'

 - $ref: '#/components/schemas/Dnf'

 Cnf:

 type: object

 required:

 - cnfUnits

 properties:

 cnfUnits:

 type: array

 items:

 $ref: '#/components/schemas/CnfUnit'

 minItems: 1

 Dnf:

 type: object

 required:

 - dnfUnits

 properties:

 dnfUnits:

 type: array

 items:

 $ref: '#/components/schemas/DnfUnit'

 minItems: 1

 CnfUnit:

 type: object

 required:

 - cnfUnit

 properties:

 cnfUnit:

 type: array

 items:

 $ref: '#/components/schemas/Atom'

 minItems: 1

 DnfUnit:

 type: object

 required:

 - dnfUnit

 properties:

 dnfUnit:

 type: array

 items:

 $ref: '#/components/schemas/Atom'

 minItems: 1

 Atom:

 type: object

 required:

 - attr

 - value

 properties:

 attr:

 type: string

 value: {}

 negative:

 type: boolean

 PatchResult:

 type: object

 required:

 - report

 properties:

 report:

 type: array

 items:

 $ref: '#/components/schemas/ReportItem'

 minItems: 1

 ReportItem:

 type: object

 required:

 - path

 properties:

 path:

 type: string

 HalTemplate:

 type: object

 required:

 - method

 properties:

 title:

 type: string

 method:

 $ref: '#/components/schemas/HttpMethod'

 contentType:

 type: string

 properties:

 type: array

 items:

 $ref: '#/components/schemas/Property'

 minItems: 1

 Property:

 type: object

 required:

 - name

 properties:

 name:

 type: string

 required:

 type: boolean

 regex:

 type: string

 value:

 type: string

#

# Data Types related to Subscription, Identification and Numbering as defined in clause 5.3

#

#

# SIMPLE DATA TYPES

#

 Dnn:

 type: string

 DnnRm:

 type: string

 nullable: true

 WildcardDnn:

 type: string

 pattern: '^[\*]$'

 WildcardDnnRm:

 type: string

 pattern: '^[\*]$'

 nullable: true

 Gpsi:

 type: string

 pattern: '^(msisdn-[0-9]{5,15}|extid-[^@]+@[^@]+|.+)$'

 GpsiRm:

 type: string

 pattern: '^(msisdn-[0-9]{5,15}|extid-[^@]+@[^@]+|.+)$'

 nullable: true

 GroupId:

 type: string

 pattern: '^[A-Fa-f0-9]{8}-[0-9]{3}-[0-9]{2,3}-([A-Fa-f0-9][A-Fa-f0-9]){1,10}$'

 GroupIdRm:

 type: string

 pattern: '^[A-Fa-f0-9]{8}-[0-9]{3}-[0-9]{2,3}-([A-Fa-f0-9][A-Fa-f0-9]){1,10}$'

 nullable: true

 ExternalGroupId:

 type: string

 pattern: '^extgroupid-[^@]+@[^@]+$'

 ExternalGroupIdRm:

 type: string

 pattern: '^extgroupid-[^@]+@[^@]+$'

 nullable: true

 Pei:

 type: string

 pattern: '^(imei-[0-9]{15}|imeisv-[0-9]{16}|mac((-[0-9a-fA-F]{2}){6})(-untrusted)?|eui((-[0-9a-fA-F]{2}){8})|.+)$'

 PeiRm:

 type: string

 pattern: '^(imei-[0-9]{15}|imeisv-[0-9]{16}|mac((-[0-9a-fA-F]{2}){6})(-untrusted)?|eui((-[0-9a-fA-F]{2}){8})|.+)$'

 nullable: true

 Supi:

 type: string

 pattern: '^(imsi-[0-9]{5,15}|nai-.+|gci-.+|gli-.+|.+)$'

 SupiRm:

 type: string

 pattern: '^(imsi-[0-9]{5,15}|nai-.+|gci-.+|gli-.+|.+)$'

 nullable: true

 NfInstanceId:

 type: string

 format: uuid

 AmfId:

 type: string

 pattern: '^[A-Fa-f0-9]{6}$'

 AmfRegionId:

 type: string

 pattern: '^[A-Fa-f0-9]{2}$'

 AmfSetId:

 type: string

 pattern: '^[0-3][A-Fa-f0-9]{2}$'

 RfspIndex:

 type: integer

 minimum: 1

 maximum: 256

 RfspIndexRm:

 type: integer

 minimum: 1

 maximum: 256

 nullable: true

 NfGroupId:

 type: string

 MtcProviderInformation:

 type: string

 CagId:

 type: string

 pattern: '^[A-Fa-f0-9]{8}$'

 SupiOrSuci:

 type: string

 pattern: '^(imsi-[0-9]{5,15}|nai-.+|gli-.+|gci-.+|suci-(0-[0-9]{3}-[0-9]{2,3}|[1-7]-.+)-[0-9]{1,4}-(0-0-.+|[a-fA-F1-9]-([1-9]|[1-9][0-9]|1[0-9]{2}|2[0-4][0-9]|25[0-5])-[a-fA-F0-9]+)|.+)$'

#

# STRUCTURED DATA TYPES

#

 Guami:

 type: object

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 amfId:

 $ref: '#/components/schemas/AmfId'

 required:

 - plmnId

 - amfId

 GuamiRm:

 type: object

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 amfId:

 $ref: '#/components/schemas/AmfId'

 required:

 - plmnId

 - amfId

 nullable: true

 NetworkId:

 type: object

 properties:

 mnc:

 $ref: '#/components/schemas/Mnc'

 mcc:

 $ref: '#/components/schemas/Mcc'

#

# Data Types related to 5G Network as defined in clause 5.4

#

#

# SIMPLE DATA TYPES

#

 ApplicationId:

 type: string

 ApplicationIdRm:

 type: string

 nullable: true

 PduSessionId:

 type: integer

 minimum: 0

 maximum: 255

 Mcc:

 type: string

 pattern: '^\d{3}$'

 MccRm:

 type: string

 pattern: '^\d{3}$'

 nullable: true

 Mnc:

 type: string

 pattern: '^\d{2,3}$'

 MncRm:

 type: string

 pattern: '^\d{2,3}$'

 nullable: true

 Tac:

 type: string

 pattern: '(^[A-Fa-f0-9]{4}$)|(^[A-Fa-f0-9]{6}$)'

 TacRm:

 type: string

 pattern: '(^[A-Fa-f0-9]{4}$)|(^[A-Fa-f0-9]{6}$)'

 nullable: true

 EutraCellId:

 type: string

 pattern: '^[A-Fa-f0-9]{7}$'

 EutraCellIdRm:

 type: string

 pattern: '^[A-Fa-f0-9]{7}$'

 nullable: true

 NrCellId:

 type: string

 pattern: '^[A-Fa-f0-9]{9}$'

 NrCellIdRm:

 type: string

 pattern: '^[A-Fa-f0-9]{9}$'

 nullable: true

 Dnai:

 type: string

 DnaiRm:

 type: string

 nullable: true

 5GMmCause:

 $ref: '#/components/schemas/Uinteger'

 AmfName:

 type: string

 AreaCode:

 type: string

 AreaCodeRm:

 type: string

 nullable: true

 N3IwfId:

 type: string

 pattern: '^[A-Fa-f0-9]+$'

 NgeNbId:

 type: string

 pattern: '^(MacroNGeNB-[A-Fa-f0-9]{5}|LMacroNGeNB-[A-Fa-f0-9]{6}|SMacroNGeNB-[A-Fa-f0-9]{5})$'

 Nid:

 type: string

 pattern: '^[A-Fa-f0-9]{11}$'

 NidRm:

 type: string

 pattern: '^[A-Fa-f0-9]{11}$'

 nullable: true

 NfSetId:

 type: string

 NfServiceSetId:

 type: string

 PlmnAssiUeRadioCapId:

 $ref: '#/components/schemas/Bytes'

 ManAssiUeRadioCapId:

 $ref: '#/components/schemas/Bytes'

 TypeAllocationCode:

 type: string

 pattern: '^[0-9]{8}$'

 HfcNId:

 type: string

 maxLength: 6

 HfcNIdRm:

 type: string

 maxLength: 6

 nullable: true

 ENbId:

 type: string

 pattern: '^(MacroeNB-[A-Fa-f0-9]{5}|LMacroeNB-[A-Fa-f0-9]{6}|SMacroeNB-[A-Fa-f0-9]{5}|HomeeNB-[A-Fa-f0-9]{7})$'

 Gli:

 $ref: '#/components/schemas/Bytes'

#

# ENUMERATED DATA TYPES

#

 AccessType:

 type: string

 enum:

 - 3GPP\_ACCESS

 - NON\_3GPP\_ACCESS

 AccessTypeRm:

 anyOf:

 - $ref: '#/components/schemas/AccessType'

 - $ref: '#/components/schemas/NullValue'

 RatType:

 anyOf:

 - type: string

 enum:

 - NR

 - EUTRA

 - WLAN

 - VIRTUAL

 - NBIOT

 - WIRELINE

 - WIRELINE\_CABLE

 - WIRELINE\_DSL

 - WIRELINE\_PON

 - LTE-M

 - NR\_U

 - EUTRA\_U

 - TRUSTED\_N3GA

 - TRUSTED\_WLAN

 - UTRA

 - GERA

 - type: string

 RatTypeRm:

 allOf:

 - $ref: '#/components/schemas/RatType'

 nullable: true

 PduSessionType:

 anyOf:

 - type: string

 enum:

 - IPV4

 - IPV6

 - IPV4V6

 - UNSTRUCTURED

 - ETHERNET

 - type: string

 PduSessionTypeRm:

 anyOf:

 - $ref: '#/components/schemas/PduSessionType'

 - $ref: '#/components/schemas/NullValue'

 UpIntegrity:

 anyOf:

 - type: string

 enum:

 - REQUIRED

 - PREFERRED

 - NOT\_NEEDED

 - type: string

 UpIntegrityRm:

 anyOf:

 - $ref: '#/components/schemas/UpIntegrity'

 - $ref: '#/components/schemas/NullValue'

 UpConfidentiality:

 anyOf:

 - type: string

 enum:

 - REQUIRED

 - PREFERRED

 - NOT\_NEEDED

 - type: string

 UpConfidentialityRm:

 anyOf:

 - $ref: '#/components/schemas/UpConfidentiality'

 - $ref: '#/components/schemas/NullValue'

 SscMode:

 anyOf:

 - type: string

 enum:

 - SSC\_MODE\_1

 - SSC\_MODE\_2

 - SSC\_MODE\_3

 - type: string

 SscModeRm:

 anyOf:

 - $ref: '#/components/schemas/SscMode'

 - $ref: '#/components/schemas/NullValue'

 DnaiChangeType:

 anyOf:

 - type: string

 enum:

 - EARLY

 - EARLY\_LATE

 - LATE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - EARLY: Early notification of UP path reconfiguration.

 - EARLY\_LATE: Early and late notification of UP path reconfiguration. This value shall only be present in the subscription to the DNAI change event.

 - LATE: Late notification of UP path reconfiguration.

 DnaiChangeTypeRm:

 anyOf:

 - $ref: '#/components/schemas/DnaiChangeType'

 - $ref: '#/components/schemas/NullValue'

 RestrictionType:

 anyOf:

 - type: string

 enum:

 - ALLOWED\_AREAS

 - NOT\_ALLOWED\_AREAS

 - type: string

 RestrictionTypeRm:

 anyOf:

 - $ref: '#/components/schemas/RestrictionType'

 - $ref: '#/components/schemas/NullValue'

 CoreNetworkType:

 anyOf:

 - type: string

 enum:

 - 5GC

 - EPC

 - type: string

 CoreNetworkTypeRm:

 anyOf:

 - $ref: '#/components/schemas/CoreNetworkType'

 - $ref: '#/components/schemas/NullValue'

 PresenceState:

 anyOf:

 - type: string

 enum:

 - IN\_AREA

 - OUT\_OF\_AREA

 - UNKNOWN

 - INACTIVE

 - type: string

 StationaryIndication:

 anyOf:

 - type: string

 enum:

 - STATIONARY

 - MOBILE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - STATIONARY: Identifies the UE is stationary

 - MOBILE: Identifies the UE is mobile

 StationaryIndicationRm:

 anyOf:

 - $ref: '#/components/schemas/StationaryIndication'

 - $ref: '#/components/schemas/NullValue'

 ScheduledCommunicationType:

 anyOf:

 - type: string

 enum:

 - DOWNLINK\_ONLY

 - UPLINK\_ONLY

 - BIDIRECTIONAL

 - type: string

 ScheduledCommunicationTypeRm:

 anyOf:

 - $ref: '#/components/schemas/ScheduledCommunicationType'

 - $ref: '#/components/schemas/NullValue'

 TrafficProfile:

 anyOf:

 - type: string

 enum:

 - SINGLE\_TRANS\_UL

 - SINGLE\_TRANS\_DL

 - DUAL\_TRANS\_UL\_FIRST

 - DUAL\_TRANS\_DL\_FIRST

 - MULTI\_TRANS

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - SINGLE\_TRANS\_UL: Uplink single packet transmission.

 - SINGLE\_TRANS\_DL: Downlink single packet transmission.

 - DUAL\_TRANS\_UL\_FIRST: Dual packet transmission, firstly uplink packet transmission with subsequent downlink packet transmission.

 - DUAL\_TRANS\_DL\_FIRST: Dual packet transmission, firstly downlink packet transmission with subsequent uplink packet transmission.

 TrafficProfileRm:

 anyOf:

 - $ref: '#/components/schemas/TrafficProfile'

 - $ref: '#/components/schemas/NullValue'

 LcsServiceAuth:

 anyOf:

 - type: string

 enum:

 - "LOCATION\_NOT\_ALLOWED"

 - "LOCATION\_ALLOWED\_WITH\_NOTIFICATION"

 - "LOCATION\_ALLOWED\_WITHOUT\_NOTIFICATION"

 - "LOCATION\_ALLOWED\_WITHOUT\_RESPONSE"

 - "LOCATION\_RESTRICTED\_WITHOUT\_RESPONSE"

 - "NOTIFICATION\_ONLY"

 - "NOTIFICATION\_AND\_VERIFICATION\_ONLY"

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - "LOCATION\_NOT\_ALLOWED": Indicates the start of MO Exception Data delivery.

 - "STOP": Indicates the stop of MO Exception Data delivery.

 - "LOCATION\_NOT\_ALLOWED": Location not allowed

 - "LOCATION\_ALLOWED\_WITH\_NOTIFICATION": Location allowed with notification

 - "LOCATION\_ALLOWED\_WITHOUT\_NOTIFICATION": Location allowed without notification

 - "LOCATION\_ALLOWED\_WITHOUT\_RESPONSE": Location with notification and privacy verification; location allowed if no response

 - "LOCATION\_RESTRICTED\_WITHOUT\_RESPONSE": Location with notification and privacy verification; location restricted if no response

 - "NOTIFICATION\_ONLY": Notification only

 - "NOTIFICATION\_AND\_VERIFICATION\_ONLY": Notification and privacy verification only

 UeAuth:

 anyOf:

 - type: string

 enum:

 - AUTHORIZED

 - NOT\_AUTHORIZED

 - type: string

 DlDataDeliveryStatus:

 anyOf:

 - type: string

 enum:

 - BUFFERED

 - TRANSMITTED

 - DISCARDED

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - BUFFERED: The first downlink data is buffered with extended buffering matching the source of the downlink traffic.

 - TRANSMITTED: The first downlink data matching the source of the downlink traffic is transmitted after previous buffering or discarding of corresponding packet(s) because the UE of the PDU Session becomes ACTIVE, and buffered data can be delivered to UE.

 - DISCARDED: The first downlink data matching the source of the downlink traffic is discarded because the Extended Buffering time, as determined by the SMF, expires or the amount of downlink data to be buffered is exceeded.

 DlDataDeliveryStatusRm:

 anyOf:

 - $ref: '#/components/schemas/DlDataDeliveryStatus'

 - $ref: '#/components/schemas/NullValue'

 MoExceptionDataFlag:

 anyOf:

 - type: string

 enum:

 - START

 - STOP

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - "START": Indicates the start of MO Exception Data delivery.

 - "STOP": Indicates the stop of MO Exception Data delivery.

#

# STRUCTURED DATA TYPES

#

 Snssai:

 type: object

 properties:

 sst:

 type: integer

 minimum: 0

 maximum: 255

 sd:

 type: string

 pattern: '^[A-Fa-f0-9]{6}$'

 required:

 - sst

 PlmnId:

 type: object

 properties:

 mcc:

 $ref: '#/components/schemas/Mcc'

 mnc:

 $ref: '#/components/schemas/Mnc'

 required:

 - mcc

 - mnc

 PlmnIdRm:

 type: object

 properties:

 mcc:

 $ref: '#/components/schemas/Mcc'

 mnc:

 $ref: '#/components/schemas/Mnc'

 required:

 - mcc

 - mnc

 nullable: true

 Tai:

 type: object

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 tac:

 $ref: '#/components/schemas/Tac'

 required:

 - plmnId

 - tac

 TaiRm:

 type: object

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 tac:

 $ref: '#/components/schemas/Tac'

 nid:

 $ref: '#/components/schemas/Nid'

 required:

 - plmnId

 - tac

 nullable: true

 Ecgi:

 type: object

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 # PLMN Identity

 eutraCellId:

 $ref: '#/components/schemas/EutraCellId'

 required:

 - plmnId

 - eutraCellId

 EcgiRm:

 type: object

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 # PLMN Identity

 eutraCellId:

 $ref: '#/components/schemas/EutraCellId'

 nid:

 $ref: '#/components/schemas/Nid'

 required:

 - plmnId

 - eutraCellId

 nullable: true

 Ncgi:

 type: object

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 nrCellId:

 $ref: '#/components/schemas/NrCellId'

 required:

 - plmnId

 - nrCellId

 NcgiRm:

 type: object

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 nrCellId:

 $ref: '#/components/schemas/NrCellId'

 nid:

 $ref: '#/components/schemas/Nid'

 required:

 - plmnId

 - nrCellId

 nullable: true

 UserLocation:

 type: object

 properties:

 eutraLocation:

 $ref: '#/components/schemas/EutraLocation'

 nrLocation:

 $ref: '#/components/schemas/NrLocation'

 n3gaLocation:

 $ref: '#/components/schemas/N3gaLocation'

 EutraLocation:

 type: object

 properties:

 tai:

 $ref: '#/components/schemas/Tai'

 ecgi:

 $ref: '#/components/schemas/Ecgi'

 ignoreEcgi:

 type: boolean

 default: false

 ageOfLocationInformation:

 type: integer

 minimum: 0

 maximum: 32767

 ueLocationTimestamp:

 $ref: '#/components/schemas/DateTime'

 geographicalInformation:

 type: string

 pattern: '^[0-9A-F]{16}$'

 geodeticInformation:

 type: string

 pattern: '^[0-9A-F]{20}$'

 globalNgenbId:

 $ref: '#/components/schemas/GlobalRanNodeId'

 globalENbId:

 $ref: '#/components/schemas/GlobalRanNodeId'

 required:

 - tai

 - ecgi

 EutraLocationRm:

 type: object

 properties:

 tai:

 $ref: '#/components/schemas/Tai'

 ecgi:

 $ref: '#/components/schemas/Ecgi'

 ageOfLocationInformation:

 type: integer

 minimum: 0

 maximum: 32767

 ueLocationTimestamp:

 $ref: '#/components/schemas/DateTime'

 geographicalInformation:

 type: string

 pattern: '^[0-9A-F]{16}$'

 geodeticInformation:

 type: string

 pattern: '^[0-9A-F]{20}$'

 globalNgenbId:

 $ref: '#/components/schemas/GlobalRanNodeId'

 globalENbId:

 $ref: '#/components/schemas/GlobalRanNodeId'

 required:

 - tai

 - ecgi

 nullable: true

 NrLocation:

 type: object

 properties:

 tai:

 $ref: '#/components/schemas/Tai'

 ncgi:

 $ref: '#/components/schemas/Ncgi'

 ageOfLocationInformation:

 type: integer

 minimum: 0

 maximum: 32767

 ueLocationTimestamp:

 $ref: '#/components/schemas/DateTime'

 geographicalInformation:

 type: string

 pattern: '^[0-9A-F]{16}$'

 geodeticInformation:

 type: string

 pattern: '^[0-9A-F]{20}$'

 globalGnbId:

 $ref: '#/components/schemas/GlobalRanNodeId'

 required:

 - tai

 - ncgi

 NrLocationRm:

 type: object

 properties:

 tai:

 $ref: '#/components/schemas/Tai'

 ncgi:

 $ref: '#/components/schemas/Ncgi'

 ignoreNcgi:

 type: boolean

 default: false

 ageOfLocationInformation:

 type: integer

 minimum: 0

 maximum: 32767

 ueLocationTimestamp:

 $ref: '#/components/schemas/DateTime'

 geographicalInformation:

 type: string

 pattern: '^[0-9A-F]{16}$'

 geodeticInformation:

 type: string

 pattern: '^[0-9A-F]{20}$'

 globalGnbId:

 $ref: '#/components/schemas/GlobalRanNodeId'

 required:

 - tai

 - ncgi

 nullable: true

 N3gaLocation:

 type: object

 properties:

 n3gppTai:

 $ref: '#/components/schemas/Tai'

 n3IwfId:

 type: string

 pattern: '^[A-Fa-f0-9]+$'

 ueIpv4Addr:

 $ref: '#/components/schemas/Ipv4Addr'

 ueIpv6Addr:

 $ref: '#/components/schemas/Ipv6Addr'

 portNumber:

 $ref: '#/components/schemas/Uinteger'

 ssId:

 type: string

 bssId:

 type: string

 civicAddress:

 $ref: '#/components/schemas/Bytes'

 hfcNodeId:

 $ref: '#/components/schemas/HfcNodeId'

 gli:

 $ref: '#/components/schemas/Gli'

 UpSecurity:

 type: object

 properties:

 upIntegr:

 $ref: '#/components/schemas/UpIntegrity'

 upConfid:

 $ref: '#/components/schemas/UpConfidentiality'

 required:

 - upIntegr

 - upConfid

 UpSecurityRm:

 type: object

 properties:

 upIntegr:

 $ref: '#/components/schemas/UpIntegrity'

 upConfid:

 $ref: '#/components/schemas/UpConfidentiality'

 required:

 - upIntegr

 - upConfid

 nullable: true

 NgApCause:

 type: object

 properties:

 group:

 $ref: '#/components/schemas/Uinteger'

 value:

 $ref: '#/components/schemas/Uinteger'

 required:

 - group

 - value

 BackupAmfInfo:

 type: object

 properties:

 backupAmf:

 $ref: '#/components/schemas/AmfName'

 guamiList:

 type: array

 items:

 $ref: '#/components/schemas/Guami'

 minItems: 1

 required:

 - backupAmf

 RefToBinaryData:

 type: object

 properties:

 contentId:

 type: string

 required:

 - contentId

 RefToBinaryDataRm:

 type: object

 properties:

 contentId:

 type: string

 required:

 - contentId

 nullable: true

 RouteToLocation:

 type: object

 properties:

 dnai:

 $ref: '#/components/schemas/Dnai'

 routeInfo:

 $ref: '#/components/schemas/RouteInformation'

 routeProfId:

 type: string

 nullable: true

 required:

 - dnai

 anyOf:

 - required: [ routeInfo ]

 - required: [ routeProfId ]

 nullable: true

 RouteInformation:

 type: object

 properties:

 ipv4Addr:

 $ref: '#/components/schemas/Ipv4Addr'

 ipv6Addr:

 $ref: '#/components/schemas/Ipv6Addr'

 portNumber:

 $ref: '#/components/schemas/Uinteger'

 required:

 - portNumber

 nullable: true

 SubscribedDefaultQos:

 type: object

 required:

 - 5qi

 - arp

 properties:

 5qi:

 $ref: '#/components/schemas/5Qi'

 arp:

 $ref: '#/components/schemas/Arp'

 priorityLevel:

 $ref: '#/components/schemas/5QiPriorityLevel'

 Area:

 type: object

 oneOf:

 - required:

 - tacs

 - required:

 - areaCode

 properties:

 tacs:

 type: array

 items:

 $ref: '#/components/schemas/Tac'

 minItems: 1

 areaCode:

 $ref: '#/components/schemas/AreaCode'

 ServiceAreaRestriction:

 type: object

 properties:

 restrictionType:

 $ref: '#/components/schemas/RestrictionType'

 areas:

 type: array

 items:

 $ref: '#/components/schemas/Area'

 maxNumOfTAs:

 $ref: '#/components/schemas/Uinteger'

 maxNumOfTAsForNotAllowedAreas:

 $ref: '#/components/schemas/Uinteger'

 allOf:

 #

 # 1st condition: restrictionType and areas attributes shall be either both absent

 # or both present

 #

 - oneOf:

 - not:

 required: [ restrictionType ]

 - required: [ areas ]

 #

 # 2nd condition: if restrictionType takes value NOT\_ALLOWED\_AREAS,

 # then maxNumOfTAs shall be absent

 #

 - anyOf:

 - not:

 required: [ restrictionType ]

 properties:

 restrictionType:

 type: string

 enum: [ NOT\_ALLOWED\_AREAS ]

 - not:

 required: [ maxNumOfTAs ]

 #

 # 3rd condition: if restrictionType takes value ALLOWED\_AREAS,

 # then maxNumOfTAsForNotAllowedAreas shall be absent

 #

 - anyOf:

 - not:

 required: [ restrictionType ]

 properties:

 restrictionType:

 type: string

 enum: [ ALLOWED\_AREAS ]

 - not:

 required: [ maxNumOfTAsForNotAllowedAreas ]

 WirelineArea:

 type: object

 properties:

 globalLineIds:

 type: array

 items:

 $ref: '#/components/schemas/Gli'

 minItems: 1

 hfcNIds:

 type: array

 items:

 $ref: '#/components/schemas/HfcNId'

 minItems: 1

 areaCodeB:

 $ref: '#/components/schemas/AreaCode'

 areaCodeC:

 $ref: '#/components/schemas/AreaCode'

 WirelineServiceAreaRestriction:

 type: object

 properties:

 restrictionType:

 $ref: '#/components/schemas/RestrictionType'

 areas:

 type: array

 items:

 $ref: '#/components/schemas/WirelineArea'

 PresenceInfo:

 type: object

 properties:

 praId:

 type: string

 presenceState:

 $ref: '#/components/schemas/PresenceState'

 trackingAreaList:

 type: array

 items:

 $ref: '#/components/schemas/Tai'

 minItems: 1

 ecgiList:

 type: array

 items:

 $ref: '#/components/schemas/Ecgi'

 minItems: 1

 ncgiList:

 type: array

 items:

 $ref: '#/components/schemas/Ncgi'

 minItems: 1

 globalRanNodeIdList:

 type: array

 items:

 $ref: '#/components/schemas/GlobalRanNodeId'

 minItems: 1

 globaleNbIdList:

 type: array

 items:

 $ref: '#/components/schemas/GlobalRanNodeId'

 minItems: 1

 PresenceInfoRm:

 type: object

 properties:

 praId:

 type: string

 presenceState:

 $ref: '#/components/schemas/PresenceState'

 trackingAreaList:

 type: array

 items:

 $ref: '#/components/schemas/Tai'

 minItems: 0

 ecgiList:

 type: array

 items:

 $ref: '#/components/schemas/Ecgi'

 minItems: 0

 ncgiList:

 type: array

 items:

 $ref: '#/components/schemas/Ncgi'

 minItems: 0

 globalRanNodeIdList:

 type: array

 items:

 $ref: '#/components/schemas/GlobalRanNodeId'

 globaleNbIdList:

 type: array

 items:

 $ref: '#/components/schemas/GlobalRanNodeId'

 minItems: 1

 nullable: true

 GlobalRanNodeId:

 type: object

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 n3IwfId:

 $ref: '#/components/schemas/N3IwfId'

 gNbId:

 $ref: '#/components/schemas/GNbId'

 ngeNbId:

 $ref: '#/components/schemas/NgeNbId'

 nid:

 $ref: '#/components/schemas/Nid'

 eNbId:

 $ref: '#/components/schemas/ENbId'

 oneOf:

 - required: [ n3IwfId ]

 - required: [ gNbId ]

 - required: [ ngeNbId ]

 - required: [ eNbId ]

 required:

 - plmnId

 GNbId:

 type: object

 properties:

 bitLength:

 type: integer

 minimum: 22

 maximum: 32

 gNBValue:

 type: string

 pattern: '^[A-Fa-f0-9]{6,8}$'

 required:

 - bitLength

 - gNBValue

 AtsssCapability:

 type: object

 properties:

 atsssLL:

 type: boolean

 default: false

 mptcp:

 type: boolean

 default: false

 PlmnIdNid:

 type: object

 required:

 - mcc

 - mnc

 properties:

 mcc:

 $ref: '#/components/schemas/Mcc'

 mnc:

 $ref: '#/components/schemas/Mnc'

 nid:

 $ref: '#/components/schemas/Nid'

 SmallDataRateStatus:

 type: object

 properties:

 remainPacketsUl:

 type: integer

 minimum: 0

 remainPacketsDl:

 type: integer

 minimum: 0

 validityTime:

 $ref: '#/components/schemas/DateTime'

 remainExReportsUl:

 type: integer

 minimum: 0

 remainExReportsDl:

 type: integer

 minimum: 0

 ApnRateStatus:

 type: object

 properties:

 remainPacketsUl:

 type: integer

 minimum: 0

 remainPacketsDl:

 type: integer

 minimum: 0

 validityTime:

 $ref: '#/components/schemas/DateTime'

 remainExReportsUl:

 type: integer

 minimum: 0

 remainExReportsDl:

 type: integer

 minimum: 0

 HfcNodeId:

 type: object

 required:

 - hfcNId

 properties:

 hfcNId:

 $ref: '#/components/schemas/HfcNId'

 HfcNodeIdRm:

 type: object

 required:

 - hfcNId

 properties:

 hfcNId:

 $ref: '#/components/schemas/HfcNId'

 nullable: true

 ScheduledCommunicationTime:

 type: object

 properties:

 daysOfWeek:

 type: array

 items:

 $ref: '#/components/schemas/DayOfWeek'

 minItems: 1

 maxItems: 6

 description: Identifies the day(s) of the week. If absent, it indicates every day of the week.

 timeOfDayStart:

 $ref: '#/components/schemas/TimeOfDay'

 timeOfDayEnd:

 $ref: '#/components/schemas/TimeOfDay'

 ScheduledCommunicationTimeRm:

 anyOf:

 - $ref: '#/components/schemas/ScheduledCommunicationTime'

 - $ref: '#/components/schemas/NullValue'

 BatteryIndication:

 type: object

 properties:

 batteryInd:

 type: boolean

 replaceableInd:

 type: boolean

 rechargeableInd:

 type: boolean

 BatteryIndicationRm:

 anyOf:

 - $ref: '#/components/schemas/BatteryIndication'

 - $ref: '#/components/schemas/NullValue'

 AcsInfo:

 type: object

 properties:

 acsUrl:

 $ref: '#/components/schemas/Uri'

 acsIpv4Addr:

 $ref: '#/components/schemas/Ipv4Addr'

 acsIpv6Addr:

 $ref: '#/components/schemas/Ipv6Addr'

 AcsInfoRm:

 anyOf:

 - $ref: '#/components/schemas/AcsInfo'

 - $ref: '#/components/schemas/NullValue'

 NrV2xAuth:

 type: object

 properties:

 vehicleUeAuth:

 $ref: '#/components/schemas/UeAuth'

 pedestrianUeAuth:

 $ref: '#/components/schemas/UeAuth'

 LteV2xAuth:

 type: object

 properties:

 vehicleUeAuth:

 $ref: '#/components/schemas/UeAuth'

 pedestrianUeAuth:

 $ref: '#/components/schemas/UeAuth'

 Pc5QoSPara:

 type: object

 required:

 - pc5QosFlowList

 properties:

 pc5QosFlowList:

 type: array

 items:

 $ref: '#/components/schemas/Pc5QosFlowItem'

 pc5LinkAmbr:

 $ref: '#/components/schemas/BitRate'

 Pc5QosFlowItem:

 type: object

 required:

 - pqi

 properties:

 pqi:

 $ref: '#/components/schemas/5Qi'

 pc5FlowBitRates:

 $ref: '#/components/schemas/Pc5FlowBitRates'

 range:

 $ref: '#/components/schemas/Uinteger'

 Pc5FlowBitRates:

 type: object

 properties:

 guaFbr:

 $ref: '#/components/schemas/BitRate'

 maxFbr:

 $ref: '#/components/schemas/BitRate'

 UtraLocation:

 type: object

 oneOf:

 - required:

 - cgi

 - required:

 - sai

 - required:

 - rai

 properties:

 cgi:

 $ref: '#/components/schemas/CellGlobalId'

 sai:

 $ref: '#/components/schemas/ServiceAreaId'

 lai:

 $ref: '#/components/schemas/LocationAreaId'

 rai:

 $ref: '#/components/schemas/RoutingAreaId'

 ageOfLocationInformation:

 type: integer

 minimum: 0

 maximum: 32767

 ueLocationTimestamp:

 $ref: '#/components/schemas/DateTime'

 geographicalInformation:

 type: string

 pattern: '^[0-9A-F]{16}$'

 geodeticInformation:

 type: string

 pattern: '^[0-9A-F]{20}$'

 GeraLocation:

 type: object

 oneOf:

 - required:

 - cgi

 - required:

 - sai

 - required:

 - rai

 properties:

 locationNumber:

 type: string

 cgi:

 $ref: '#/components/schemas/CellGlobalId'

 sai:

 $ref: '#/components/schemas/ServiceAreaId'

 lai:

 $ref: '#/components/schemas/LocationAreaId'

 vlrNumber:

 type: string

 mscNumber:

 type: string

 ageOfLocationInformation:

 type: integer

 minimum: 0

 maximum: 32767

 ueLocationTimestamp:

 $ref: '#/components/schemas/DateTime'

 geographicalInformation:

 type: string

 pattern: '^[0-9A-F]{16}$'

 geodeticInformation:

 type: string

 pattern: '^[0-9A-F]{20}$'

 CellGlobalId:

 type: object

 required:

 - plmnId

 - lac

 - cellId

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 lac:

 type: string

 cellId:

 type: string

 pattern: '^[A-Fa-f0-9]$'

 ServiceAreaId:

 type: object

 required:

 - plmnId

 - lac

 - sac

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 lac:

 type: string

 pattern: '^[A-Fa-f0-9]$'

 sac:

 type: string

 pattern: '^[A-Fa-f0-9]$'

 LocationAreaId:

 type: object

 required:

 - plmnId

 - lac

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 lac:

 type: string

 pattern: '^[A-Fa-f0-9]$'

 RoutingAreaId:

 type: object

 required:

 - plmnId

 - lac

 - rac

 properties:

 plmnId:

 $ref: '#/components/schemas/PlmnId'

 lac:

 type: string

 pattern: '^[A-Fa-f0-9]$'

 rac:

 type: string

 pattern: '^[A-Fa-f0-9]$'

 DddTrafficDescriptor:

 type: object

 properties:

 ipv4Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 ipv6Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

 portNumber:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uinteger'

 macAddr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 MoExpDataCounter:

 type: object

 required:

 - counter

 properties:

 counter:

 type: integer

 timeStamp:

 $ref: '#/components/schemas/DateTime'

#

# Data Types related to 5G QoS as defined in clause 5.5

#

#

# SIMPLE DATA TYPES

#

#

 Qfi:

 type: integer

 minimum: 0

 maximum: 63

 QfiRm:

 type: integer

 minimum: 0

 maximum: 63

 nullable: true

 5Qi:

 type: integer

 minimum: 0

 maximum: 255

 5QiRm:

 type: integer

 minimum: 0

 maximum: 255

 nullable: true

 BitRate:

 type: string

 pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$'

 BitRateRm:

 type: string

 pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$'

 nullable: true

 ArpPriorityLevelRm:

 type: integer

 minimum: 1

 maximum: 15

 nullable: true

 ArpPriorityLevel:

 type: integer

 minimum: 1

 maximum: 15

 nullable: true

 description: nullable true shall not be used for this attribute

 5QiPriorityLevel:

 type: integer

 minimum: 1

 maximum: 127

 5QiPriorityLevelRm:

 type: integer

 minimum: 1

 maximum: 127

 nullable: true

 PacketDelBudget:

 type: integer

 minimum: 1

 PacketDelBudgetRm:

 type: integer

 minimum: 1

 nullable: true

 PacketErrRate:

 type: string

 pattern: '^([0-9]E-[0-9])$'

 PacketErrRateRm:

 type: string

 pattern: '^([0-9]E-[0-9])$'

 nullable: true

 PacketLossRate:

 type: integer

 minimum: 0

 maximum: 1000

 PacketLossRateRm:

 type: integer

 minimum: 0

 maximum: 1000

 nullable: true

 AverWindow:

 type: integer

 minimum: 1

 maximum: 4095

 default: 2000

 AverWindowRm:

 type: integer

 maximum: 4095

 default: 2000

 minimum: 1

 nullable: true

 MaxDataBurstVol:

 type: integer

 minimum: 1

 maximum: 4095

 MaxDataBurstVolRm:

 type: integer

 minimum: 1

 maximum: 4095

 nullable: true

 SamplingRatio:

 type: integer

 minimum: 1

 maximum: 100

 SamplingRatioRm:

 type: integer

 minimum: 1

 maximum: 100

 nullable: true

 RgWirelineCharacteristics:

 $ref: '#/components/schemas/Bytes'

 RgWirelineCharacteristicsRm:

 allOf:

 - $ref: '#/components/schemas/RgWirelineCharacteristics'

 - nullable: true

 ExtMaxDataBurstVol:

 type: integer

 minimum: 4096

 maximum: 2000000

 ExtMaxDataBurstVolRm:

 type: integer

 minimum: 4096

 maximum: 2000000

 nullable: true

#

# ENUMERATED DATA TYPES

#

 PreemptionCapability:

 anyOf:

 - type: string

 enum:

 - NOT\_PREEMPT

 - MAY\_PREEMPT

 - type: string

 PreemptionCapabilityRm:

 anyOf:

 - $ref: '#/components/schemas/PreemptionCapability'

 - $ref: '#/components/schemas/NullValue'

 PreemptionVulnerability:

 anyOf:

 - type: string

 enum:

 - NOT\_PREEMPTABLE

 - PREEMPTABLE

 - type: string

 PreemptionVulnerabilityRm:

 anyOf:

 - $ref: '#/components/schemas/PreemptionVulnerability'

 - $ref: '#/components/schemas/NullValue'

 ReflectiveQoSAttribute:

 anyOf:

 - type: string

 enum:

 - RQOS

 - NO\_RQOS

 - type: string

 ReflectiveQoSAttributeRm:

 anyOf:

 - $ref: '#/components/schemas/ReflectiveQoSAttribute'

 - $ref: '#/components/schemas/NullValue'

 NotificationControl:

 anyOf:

 - type: string

 enum:

 - REQUESTED

 - NOT\_REQUESTED

 - type: string

 NotificationControlRm:

 anyOf:

 - $ref: '#/components/schemas/NotificationControl'

 - $ref: '#/components/schemas/NullValue'

 QosResourceType:

 anyOf:

 - type: string

 enum:

 - NON\_GBR

 - NON\_CRITICAL\_GBR

 - CRITICAL\_GBR

 - type: string

 QosResourceTypeRm:

 anyOf:

 - $ref: '#/components/schemas/QosResourceType'

 - $ref: '#/components/schemas/NullValue'

 AdditionalQosFlowInfo:

 anyOf:

 - anyOf:

 - type: string

 enum:

 - MORE\_LIKELY

 - type: string

 - $ref: '#/components/schemas/NullValue'

#

#

# STRUCTURED DATA TYPES

#

 Arp:

 type: object

 properties:

 priorityLevel:

 $ref: '#/components/schemas/ArpPriorityLevel'

 preemptCap:

 $ref: '#/components/schemas/PreemptionCapability'

 preemptVuln:

 $ref: '#/components/schemas/PreemptionVulnerability'

 required:

 - priorityLevel

 - preemptCap

 - preemptVuln

 ArpRm:

 type: object

 properties:

 priorityLevel:

 $ref: '#/components/schemas/ArpPriorityLevel'

 preemptCap:

 $ref: '#/components/schemas/PreemptionCapability'

 preemptVuln:

 $ref: '#/components/schemas/PreemptionVulnerability'

 required:

 - priorityLevel

 - preemptCap

 - preemptVuln

 nullable: true

 Ambr:

 type: object

 properties:

 uplink:

 $ref: '#/components/schemas/BitRate'

 downlink:

 $ref: '#/components/schemas/BitRate'

 required:

 - uplink

 - downlink

 AmbrRm:

 type: object

 properties:

 uplink:

 $ref: '#/components/schemas/BitRate'

 downlink:

 $ref: '#/components/schemas/BitRate'

 required:

 - uplink

 - downlink

 nullable: true

 Dynamic5Qi:

 type: object

 properties:

 resourceType:

 $ref: '#/components/schemas/QosResourceType'

 priorityLevel:

 $ref: '#/components/schemas/5QiPriorityLevel'

 packetDelayBudget:

 $ref: '#/components/schemas/PacketDelBudget'

 packetErrRate:

 $ref: '#/components/schemas/PacketErrRate'

 averWindow:

 $ref: '#/components/schemas/AverWindow'

 maxDataBurstVol:

 $ref: '#/components/schemas/MaxDataBurstVol'

 extMaxDataBurstVol:

 $ref: '#/components/schemas/ExtMaxDataBurstVol'

 required:

 - resourceType

 - priorityLevel

 - packetDelayBudget

 - packetErrRate

 NonDynamic5Qi:

 type: object

 properties:

 priorityLevel:

 $ref: '#/components/schemas/5QiPriorityLevel'

 averWindow:

 $ref: '#/components/schemas/AverWindow'

 maxDataBurstVol:

 $ref: '#/components/schemas/MaxDataBurstVol'

 extMaxDataBurstVol:

 $ref: '#/components/schemas/ExtMaxDataBurstVol'

 minProperties: 0

 Tmbr:

 type: object

 properties:

 uplink:

 $ref: '#/components/schemas/BitRate'

 downlink:

 $ref: '#/components/schemas/BitRate'

 required:

 - uplink

 - downlink

 TmbrRm:

 anyOf:

 - $ref: '#/components/schemas/Tmbr'

 - $ref: '#/components/schemas/NullValue'

#

# Data Types related to 5G Trace as defined in clause 5.6

#

#

# SIMPLE DATA TYPES

#

#

#

# Enumerations

#

 TraceDepth:

 anyOf:

 - type: string

 enum:

 - MINIMUM

 - MEDIUM

 - MAXIMUM

 - MINIMUM\_WO\_VENDOR\_EXTENSION

 - MEDIUM\_WO\_VENDOR\_EXTENSION

 - MAXIMUM\_WO\_VENDOR\_EXTENSION

 - type: string

 TraceDepthRm:

 anyOf:

 - $ref: '#/components/schemas/TraceDepth'

 - $ref: '#/components/schemas/NullValue'

#

# STRUCTURED DATA TYPES

#

 TraceData:

 type: object

 nullable: true

 properties:

 traceRef:

 type: string

 pattern: '^[0-9]{3}[0-9]{2,3}-[A-Fa-f0-9]{6}$'

 traceDepth:

 $ref: '#/components/schemas/TraceDepth'

 neTypeList:

 type: string

 pattern: '^[A-Fa-f0-9]+$'

 eventList:

 type: string

 pattern: '^[A-Fa-f0-9]+$'

 collectionEntityIpv4Addr:

 $ref: '#/components/schemas/Ipv4Addr'

 collectionEntityIpv6Addr:

 $ref: '#/components/schemas/Ipv6Addr'

 interfaceList:

 type: string

 pattern: '^[A-Fa-f0-9]+$'

 required:

 - traceRef

 - traceDepth

 - neTypeList

 - eventList

# Data Types related to 5G ODB as defined in clause 5.7

#

# SIMPLE DATA TYPES

#

#

#

# Enumerations

#

 RoamingOdb:

 anyOf:

 - type: string

 enum:

 - OUTSIDE\_HOME\_PLMN

 - OUTSIDE\_HOME\_PLMN\_COUNTRY

 - type: string

 OdbPacketServices:

 anyOf:

 - anyOf:

 - type: string

 enum:

 - ALL\_PACKET\_SERVICES

 - ROAMER\_ACCESS\_HPLMN\_AP

 - ROAMER\_ACCESS\_VPLMN\_AP

 - type: string

 - $ref: '#/components/schemas/NullValue'

#

# STRUCTURED DATA TYPES

#

 OdbData:

 type: object

 properties:

 roamingOdb:

 $ref: '#/components/schemas/RoamingOdb'

#

# Data Types related to Charging as defined in clause 5.8

#

#

# SIMPLE DATA TYPES

#

#

 ChargingId:

 $ref: '#/components/schemas/Uint32'

 ApplicationChargingId:

 type: string

 RatingGroup:

 $ref: '#/components/schemas/Uint32'

 ServiceId:

 $ref: '#/components/schemas/Uint32'

#

# Enumerations

#

#

# STRUCTURED DATA TYPES

#

 SecondaryRatUsageReport:

 type: object

 properties:

 secondaryRatType:

 $ref: '#/components/schemas/RatType'

 qosFlowsUsageData:

 type: array

 items:

 $ref: '#/components/schemas/QosFlowUsageReport'

 minItems: 1

 required:

 - secondaryRatType

 - qosFlowsUsageData

 QosFlowUsageReport:

 type: object

 properties:

 qfi:

 $ref: '#/components/schemas/Qfi'

 startTimeStamp:

 $ref: '#/components/schemas/DateTime'

 endTimeStamp:

 $ref: '#/components/schemas/DateTime'

 downlinkVolume:

 $ref: '#/components/schemas/Int64'

 uplinkVolume:

 $ref: '#/components/schemas/Int64'

 required:

 - qfi

 - startTimeStamp

 - endTimeStamp

 - downlinkVolume

 - uplinkVolume

 SecondaryRatUsageInfo:

 type: object

 properties:

 secondaryRatType:

 $ref: '#/components/schemas/RatType'

 qosFlowsUsageData:

 type: array

 items:

 $ref: '#/components/schemas/QosFlowUsageReport'

 minItems: 1

 pduSessionUsageData:

 type: array

 items:

 $ref: '#/components/schemas/VolumeTimedReport'

 minItems: 1

 required:

 - secondaryRatType

 VolumeTimedReport:

 type: object

 properties:

 startTimeStamp:

 $ref: '#/components/schemas/DateTime'

 endTimeStamp:

 $ref: '#/components/schemas/DateTime'

 downlinkVolume:

 $ref: '#/components/schemas/Int64'

 uplinkVolume:

 $ref: '#/components/schemas/Int64'

 required:

 - startTimeStamp

 - endTimeStamp

 - downlinkVolume

 - uplinkVolume

#

# HTTP responses

#

 responses:

 '400':

 description: Bad request

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '401':

 description: Unauthorized

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '403':

 description: Forbidden

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '404':

 description: Not Found

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '405':

 description: Method Not Allowed

 '408':

 description: Request Timeout

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '406':

 description: 406 Not Acceptable

 '409':

 description: Conflict

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '410':

 description: Gone

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '411':

 description: Length Required

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '412':

 description: Precondition Failed

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '413':

 description: Payload Too Large

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '414':

 description: URI Too Long

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '415':

 description: Unsupported Media Type

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '429':

 description: Too Many Requests

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '500':

 description: Internal Server Error

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '501':

 description: Not Implemented

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '503':

 description: Service Unavailable

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 '504':

 description: Gateway Timeout

 content:

 application/problem+json:

 schema:

 $ref: '#/components/schemas/ProblemDetails'

 default:

 description: Generic Error

# \*\*\* End of changes \*\*\*