**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 can be 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 \*\*\*