**3GPP TSG-SA5 Meeting #131eS5-203286**

**e-meeting 25th May-3rd June 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **28.541** | **CR** | **0317** | **rev** | **-** | **Current version:** | **16.4.1** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Update ServiceProfile to align with GST | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | SA5 | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16, NETSLICE-ADPM5G | | | | |  | ***Date:*** | | | 2020-04-20 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | At last GSMA meeting the development of GST attributes was aligned with the 3GPP release plan (GSMA N.116 CR1039) which means that support for some attributes is not required in Rel-16, not planned in Rel-17 or not defined. In the service profile a number of attributes reference only to 3GPP stage 1 or the GST. Reference to stage 1 does not provide a definition of an attribute. The following attributes in service profile do not have well defined definition in Rel-16 timeframe.  maxNumberofUEs: This attribute is FFS in 3GPP Rel17  coverageArea: This attribute is FFS in 3GPP Rel17  uEMobilityLevel: Not defined in GST, there is no definition  delayTolerance: This attribute is FFS in 3GPP Rel17  deterministicComm: This attribute is FFS in 3GPP.  dLThptPerSlice: This attribute is FFS in 3GPP.  uLThptPerSlice: This attribute is FFS in 3GPP Rel17.  uLThptPerUE: Placeholder in GST, there is no definition  maxNumberofConns: This attribute is FFS in 3GPP Rel17  supportedAccessTech: Removed from GST  userMgmtOpen: This attribute is FFS in 3GPP.  v2XCommModels: Placeholder in GST, no definition  termDensity: Placeholder in GST, no definition  activityFactor: Not defined in GST, no reference exists  uESpeed: This attribute is FFS in 3GPP.  survivalTime: not in GST, no other reference  reliability: removed from GST | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The ServiceProfile is updated by implementing the following treatment:  - maxNumberofUEs added clarifying Note 1.  - coverageArea added clarifying Note 2  - uEMobilityLevel, delayTolerance, deterministicComm, dLThptPerSlice, uLThptPerSlice, uLThptPerUE, maxNumberofConns, userMgmtOpen, v2XCommModels, termDensity, activityFactor, uESpeed, survivalTime, added clarifying Note 3  - supportedAccessTech, reliability removed from ServiceProfile  The SliceProfile is updated by implementing the following treatment:  - uEMobilityLevel, removed from SliceProfile | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The ServiceProfile is incorrect, and may lead to faulty implementations | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.3.3.2, 6.3.4.2,  6.3.12, 6.3.12.1, 6.3.12.2, 6.3.12.3, 6.3.12.4,  6.4.1, I.4.3, J.4.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

***First change***

### 6.3.3 ServiceProfile <<dataType>>

#### 6.3.3.1 Definition

This data type represents the properties of network slice related requirement that should be supported by the network slice instance in 5G network. The network slice can be tailored based on the specific requirements adhered to SLA agreed between Network Slice Customer (NSC) and Network Slice Provider (NSP), see clause 2 of [50]. A network slicing provider may add additional requirements not directly derived from SLA’s, associated to the provider internal [business] goals. The GST defined by GSMA (see [50]) and the service performance requirements defined in 3GPP TS 22.261 [28] and TS 22.104 [51] are all considered as input for the network slice related requirements.

#### 6.3.3.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| serviceProfileId | M | T | F | T | T |
| sNSSAIList | M | T | T | F | T |
| pLMNIdList | M | T | T | F | T |
| maxNumberofUEs, see NOTE 1 | O | T | T | F | T |
| coverageArea, see NOTE 2 | O | T | T | F | T |
| latency | O | T | T | F | T |
| uEMobilityLevel, See NOTE 3 | O | T | T | F | T |
| resourceSharingLevel | O | T | T | F | T |
| sST | M | T | T | F | T |
| Availability, See NOTE 3 | O | T | T | F | T |
| delayTolerance, See NOTE 3 | O | T | T | F | T |
| deterministicComm, See NOTE 3 | O | T | T | F | T |
| dLThptPerSlice, See NOTE 3 | O | T | T | F | T |
| dLThptPerUE, See NOTE 3 | O | T | T | F | T |
| uLThptPerSlic, See NOTE 3 | O | T | T | F | T |
| uLThptPerUE, See NOTE 3 | O | T | T | F | T |
| maxPktSize | O | T | T | F | T |
| maxNumberofConns, See NOTE 3 | O | T | T | F | T |
| kPIMonitoring | O | T | T | F | T |
|  |  |  |  |  |  |
| userMgmtOpen, See NOTE 3 | O | T | T | F | T |
| v2XCommModels, See NOTE 3 | O | T | T | F | T |
| termDensity, See NOTE 3 | O | T | T | F | T |
| activityFactor, See NOTE 3 | O | T | T | F | T |
| uESpeed, See NOTE 3 | O | T | T | F | T |
| jitter | O | T | T | F | T |
| survivalTime | O | T | T | F | T |
|  |  |  |  |  |  |

NOTE 1: This attribute is not defined outside the scope of this document, the intention of this attribute is to provide input to the dimensioning of the NetworkSlice capacity

NOTE 2: This attribute is not defined outside the scope of this document, the intention of this attribute is to represent a coverageAreaTAList

NOTE 3: This attribute is defined in TS 22.261 [28] or TS 22.104 [5] or GST [50] and included in the ServiceProfile for information.

#### 6.3.3.3 Attribute constraints

None.

#### 6.3.3.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.4 SliceProfile <<dataType>>

#### 6.3.4.1 Definition

This data type represents the properties of network slice subnet related requirement that should be supported by the network slice subnet instance in a 5G network.

#### 6.3.4.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| sliceProfileId | M | T | F | T | T |
| sNSSAIList | M | T | T | F | T |
| pLMNIdList | M | T | T | F | T |
| perfReq | M | T | T | F | T |
| maxNumberofUEs | O | T | T | F | T |
| coverageAreaTAList | O | T | T | F | T |
| latency | O | T | T | F | T |
|  |  |  |  |  |  |
| resourceSharingLevel | O | T | T | F | T |

#### 6.3.4.3 Attribute constraints

None.

#### 6.3.4.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.5 NsInfo <<dataType>>

#### 6.3.5.1 Definition

This data type represents the properties of network service information (See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]) corresponding to the network slice subnet instance.

#### 6.3.5.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| nSInstanceId | M | T | F | F | T |
| nsName | O | T | F | F | T |
| description | O | T | F | F | T |

#### 6.3.5.3 Attribute constraints

None.

#### 6.3.5.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.6 ServAttrCom <<dataType>>

#### 6.3.x.1 Definition

This data type represents the common properties of service requirement related attributes (see GSMA NG.116 [50] corresponding to Attribute categories, tagging and exposure).

#### 6.3.6.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| category | M | T | F | F | T |
| tagging | CM | T | F | F | T |
| exposure | M | T | F | F | T |

#### 6.3.6.3 Attribute constraints

|  |  |
| --- | --- |
| Name | Definition |
| tagging Support Qualifier | Condition: It shall be supported if the category is character. Otherwise this attribute shall be absent. |

#### 6.3.6.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.7 DelayTolerance<<dataType>>

#### 6.3.7.1 Definition

This data type represents the delay tolerance (See Clause 3.4.3 of GSMA NG.116 [50]).

#### 6.3.7.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| support | M | T | F | F | T |

#### 6.3.7.3 Attribute constraints

None.

#### 6.3.7.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.7 DeterminComm <<dataType>>

#### 6.3.7.1 Definition

This data type represents the properties of the deterministic communication for periodic user traffic. Periodic traffic refers to the type of traffic with periodic transmissions.

#### 6.3.7.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| availability | M | T | F | F | T |
| periodicityList | M | T | T | F | T |

#### 6.3.7.3 Attribute constraints

None.

#### 6.3.7.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.8 DLThpt<<dataType>>

#### 6.3.8.1 Definition

This data type represents the downlink throughput per slice or per UE (See Clause 3.4.5 and 3.4.6 of GSMA NG.116 [50]).

#### 6.3.8.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| guaThpt | M | T | F | F | T |
| maxThpt | C | T | F | F | T |

#### 6.3.8.3 Attribute constraints

None.

#### 6.3.8.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.9 ULThpt<<dataType>>

#### 6.3.9.1 Definition

This data type represents the uplink throughput per slice or per UE (See Clause 3.4.31 and 3.4.32 of GSMA NG.116 [50]).

#### 6.3.9.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| guaThpt | O | T | F | F | T |
| maxThpt | O | T | F | F | T |

#### 6.3.9.3 Attribute constraints

None.

#### 6.3.9.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.10 MaxPktSize <<dataType>>

#### 6.3.10.1 Definition

This data type represents the maximum packet size (See Clause 3.4.11 of GSMA NG.116 [50]).

#### 6.3.10.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| maxSize | M | T | F | F | T |

#### 6.3.10.3 Attribute constraints

None.

#### 6.3.10.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.11 MaxNumberofConns <<dataType>>

#### 6.3.11.1 Definition

This data type represents maximun number of connections (See Clause 3.4.15 of GSMA NG.116 [50]).

#### 6.3.11.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| nOofConn | M | T | F | F | T |

#### 6.3.11.3 Attribute constraints

None.

#### 6.3.11.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.



### 6.3.13 KPIMonitoring <<dataType>>

#### 6.3.13.1 Definition

This data type represents performance monitoring (See Clause 3.4.17 of GSMA NG.116 [50]).

#### 6.3.13.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| kPIList | M | T | F | F | T |

#### 6.3.13.3 Attribute constraints

None.

#### 6.3.13.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.14 UserMgmtOpen<<dataType>>

#### 6.3.14.1 Definition

This data type represents User management openness (See Clause 3.4.33 of GSMA NG.116 [50]).

#### 6.3.14.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| support | M | T | F | F | T |

#### 6.3.14.3 Attribute constraints

None.

#### 6.3.14.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.15 V2XCommMode<<dataType>>

#### 6.3.15.1 Definition

This data type represents V2X communication mode (See Clause 3.4.35 of GSMA NG.116 [50]).

#### 6.3.15.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| v2XMode | M | T | F | F | T |

#### 6.3.15.3 Attribute constraints

None.

#### 6.3.15.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 6.3.16 TermDensity<<dataType>>

#### 6.3.16.1 Definition

This data type represents Terminal density (See Clause 3.4.30 of GSMA NG.116 [50]).

#### 6.3.16.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| servAttrCom | M | T | F | F | T |
| density | M | T | F | F | T |

#### 6.3.16.3 Attribute constraints

None.

#### 6.3.16.4 Notifications

The subclause 6.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

## 6.4 Attribute definition

### 6.4.1 Attribute properties

| Attribute Name | Documentation and Allowed Values | Properties |
| --- | --- | --- |
| availability | This parameter specifies the communication service availability requirement, expressed as a percentage. The communication service availability is defined in clause 3.1 of TS 22.261 [28]. | type: Float  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: True |
| serviceProfileId | A unique identifier of property of network slice related requirement should be supported by the network slice instance. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| sliceProfileId | A unique identifier of the property of network slice subnet related requirement should be supported by the network slice subnet instance. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| operationalState | It indicates the operational state of the network slice instance or the network slice subnet instance. It describes whether or not the resource is physically installed and working.  allowedValues: "ENABLED", "DISABLED".  The meaning of these values is as defined in 3GPP TS 28.625 [17] and ITU-T X.731 [18]. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| administrativeState | It indicates the administrative state of the network slice instance or the network slice subnet instance. It describes the permission to use or prohibition against using the instance, imposed through the OAM services.  allowedValues: “LOCKED”, “UNLOCKED”, SHUTTINGDOWN”  The meaning of these values is as defined in 3GPP TS 28.625 [17] and ITU-T X.731 [18]. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| nsInfo | This attribute contains the NsInfo of the NS instance corresponding to the network slice subnet instance. The NsInfo is described in clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: NsInfo  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: No default value  isNullable: True |
| nSInstanceId | This attribute specifies the identifier of NS instance corresponding to the network slice subnet instance.  See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: No default value  isNullable: True |
| nsName | This attribute specifies the name of NS instance corresponding to the network slice subnet instance.  See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: No default value  isNullable: True |
| description | This attribute specifies the description of NS instance corresponding to the network slice subnet instance.  See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: No default value  isNullable: True |
| category | This attribute specifies the category of a service requirement/attribute of GST (see GSMA NG.116 [50]).  allowedValues: character, scalability | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| tagging | This attribute specifies the tagging of a service requirement/attribute of GST in character catogary (see GSMA NG.116 [50]).  allowedValues: performance, function, operation | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| exposure | This attribute specifies exposure mode of a service requirement/attribute of GST (see GSMA NG.116 [50]).  allowedValues: API, KPI | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| sNSSAIList | This parameter specifies the S-NSSAI list to be supported by the new NSI to be created or the existing NSI to be re-used.  sNSSAList is defined in subclause 4.4.1 |  |
| maxNumberofUEs | An attribute specifies the maximum number of UEs may simultaneously access the network slice instance. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| coverageAreaTAList | An attribute specifies a list of TrackingAreas where the NSI can be selected.  allowedValues:  Legacy TAC and Extended TAC are defined in clause 9.3.3.10 of TS 38.413 [5]. | type: Integer  multiplicity: 1..\*  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| latency | An attribute specifies the packet transmission latency (millisecond) through the RAN, CN, and TN part of 5G network and is used to evaluate utilization performance of the end-to-end network slice instance. See clause 6.3.1 of 28.554 [27]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| uEMobilityLevel | An attribute specifies the mobility level of UE accessing the network slice instance. See 6.2.1 of TS 22.261 [28].  allowedValues: stationary, nomadic, restricted mobility, fully mobility. | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: True |
| serviceProfile.resourceSharingLevel | An attribute specifies whether the resources to be allocated to the network slice instance may be shared with another network slice instance(s).  allowedValues: shared, non-shared. | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: Yes  isNullable: True |
| sliceProfile.resourceSharingLevel | An attribute specifies whether the resources to be allocated to the network slice subnet instance may be shared with another network slice subnet instance(s).  allowedValues: shared, non-shared. | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: Yes  isNullable: True |
| serviceProfileList | An attribute specifies a list of ServiceProfile (see clause 6.3.3) supported by the network slice instance | type: ServiceProfile  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| sliceProfileList | An attribute specifies a list of SliceProfile (see clause 6.3.4) supported by the network slice subnet instance | type: SliceProfile  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| sST | This parameter specifies the slice/service type for a ServiceProfile.  See clause 5.15.2 of 3GPP TS 23.501 [2]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| delayTolerance | An attribute specifies the properties of service delivery flexibility, especially for the vertical services that are not chasing a high system performance. See clause 4.3 of TS 22.104 [51]. | type: DelayTolerance  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| DelayTolerance.support | An attribute specifies whether or not the NSI supports service delivery flexibility, especially for the vertical services that are not chasing a high system performance.  allowedValues:  "NOT SUPPORTED", "SUPPORTED". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| deterministicComm | An attribute specifies the properties of the deterministic communication for periodic user traffic, see clause 4.3 of TS 22.104 [51]. | type: <<DeterminComm>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| DeterminComm.availability | An attribute specifies whether or not the NSI supports deterministic communication for period user traffic.  allowedValues:  "NOT SUPPORTED", "SUPPORTED". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| DeterminComm.periodicityList | An attribute specifies a list of periodicities supported by the NSI for deterministic communication. | type: Float  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| dLThptPerSlice | This attribute defines achievable data rate of the network slice in downlink that is available ubiquitously across the coverage area of the slice, refer NG.116 [50]. | type: DLThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| dLThptPerUE | This attribute defines data rate supported by the network slice per UE, refer NG.116 [50]. | type: DLThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| guaThpt | This attribute describes the guaranteed data rate. | type: Float  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| maxThpt | This attribute describes the maximum data rate. | type: Float  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| uLThptPerSlice | This attribute defines achievable data rate of the network slice in uplink that is available ubiquitously across the coverage area of the slice, refer NG.116 [50]. | type: ULThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| uLThptPerUE | This attribute defines data rate supported by the network slice per UE, refer NG.116 [50]. | type: ULThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| maxPktSize | This parameter specifies the maximum packet size supported by the network slice, refer NG.116 [50]. | type: MaxPktSize  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| MaxPktSize.maxsize | This parameter specifies the maximum packet size supported by the network slice, refer NG.116 [50]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| maxNumberofConns | This parameter defines the maximum number of concurrent sessions supported by the network slice, refer NG.116 [50]. | type: MaxNumberofConns  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| MaxNumberofConns.nOofConn | This parameter defines the maximum number of concurrent sessions supported by the network slice, refer NG.116 [50]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| kPIMonitoring | An attribute specifies the name list of KQIs and KPIs available for performance monitoring. | type: KPIMonitoring  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| KPIMonitoring. kPIList | An attribute specifies the name list of KQIs and KPIs available for performance monitoring. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
|  |  |  |
|  |  |  |
| userMgmtOpen | An attribute specifies whether or not the NSI supports the capability for the NSC to manage their users or groups of users’ network services and corresponding requirements. | type: UserMgmtOpen  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| UserMgmtOpen.support | An attribute specifies whether or not the NSI supports the capability for the NSC to manage their users or groups of users’ network services and corresponding requirements.  allowedValues:  "NOT SUPPORTED", "SUPPORTED". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| v2XCommModels | An attribute specifies whether or not the V2X communication mode is supported by the NSI. | type: V2XCommMode  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| V2XCommMode.v2XMode | An attribute specifies whether or not the V2X communication mode is supported by the NSI.  allowedValues:  "NOT SUPPORTED", "SUPPORTED BY NR". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| coverageArea | An attribute specifies the coverage area of the network slice, i.e. the geographic region where a 3GPP communication service is accessible, see Table 7.1-1 of TS 22.261 [28]) and NG.116 [50]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| termDensity | An attribute specifies the overall user density over the coverage area of the network slice. See Table 7.1-1 of TS 22.261 [28]). | type: TermDensity  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| TermDensity.density | An attribute specifies the overall user density over the coverage area of the network slice. See Table 7.1-1 of TS 22.261 [28]). | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| activityFactor | An attribute specfies the percentage value of the amount of simultaneous active UEs to the total number of UEs where active means the UEs are exchanging data with the network. See Table 7.1-1 of TS 22.261 [28]). | type: Float  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| uESpeed | An attribute specifies the maximum speed (in km/hour) supported by the network slice at which a defined QoS can be achieved. See Table 7.1-1 of TS 22.261 [28]). | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| jitter | An attribute specifies the deviation from the desired value to the actual value when assessing time parameters, see clause C.4.1 of TS 22.104 [51]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| survivalTime | An attribute specifies the time that an application consuming a communication service may continue without an anticipated message. See clause 5 of TS 22.104 [51]). | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
|  |  |  |
| NetworkSlice.networkSliceSubnetRef | This holds a DN of NetworkSliceSubnet relating to the NetworkSlice instance. | type: DN  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NetworkSliceSubnet.networkSliceSubnetRef | This holds a list of DN of constituent NetworkSliceSubnet supporting NetworkSliceSubnet instance | type: DN  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| managedFunctionRef | This holds a list of DN of ManagedFunction instances supporting the NetworkSliceSubnet instance. | type: DN  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |

***Second change.***

## I.4.3 XML schema "sliceNrm.xsd"

<?xml version="1.0" encoding="UTF-8"?>

<!--

3GPP TS 28.541 network slice Network Resource Model

XML schema definition

sliceNrm.xsd

-->

<schema xmlns="http://www.w3.org/2001/XMLSchema"

xmlns:xn="http://www.3gpp.org/ftp/specs/archive/28\_series/28.623#genericNrm"

xmlns:sl="http://www.3gpp.org/ftp/specs/archive/28\_series/28.541#sliceNrm"

xmlns:nn="http://www.3gpp.org/ftp/specs/archive/28\_series/28.541#nrNrm"

xmlns:ngc="http://www.3gpp.org/ftp/specs/archive/28\_series/28.541#ngcNrm"

xmlns:en="http://www.3gpp.org/ftp/specs/archive/28\_series/28.659#eutranNrm"

xmlns:sm="http://www.3gpp.org/ftp/specs/archive/28\_series/28.626#stateManagementIRP"

targetNamespace="http://www.3gpp.org/ftp/specs/archive/28\_series/28.541#sliceNrm" elementFormDefault="qualified">

<import namespace="http://www.3gpp.org/ftp/specs/archive/28\_series/28.623#genericNrm"/>

<import namespace="http://www.3gpp.org/ftp/specs/archive/28\_series/28.541#nrNrm"/>

<import namespace="http://www.3gpp.org/ftp/specs/archive/28\_series/28.541#ngcNrm"/>

<import namespace="http://www.3gpp.org/ftp/specs/archive/28\_series/28.659#eutranNrm"/>

<import namespace="http://www.3gpp.org/ftp/specs/archive/28\_series/28.626#stateManagementIRP"/>

<simpleType name="MobilityLevel">

<restriction base="string">

<enumeration value="STATIONARY"/>

<enumeration value="NOMADIC"/>

<enumeration value="RESTRICTED MOBILITY"/>

<enumeration value="FULLY MOBILITY"/>

</restriction>

</simpleType>

<simpleType name="SharingLevel">

<restriction base="string">

<enumeration value="SHARED"/>

<enumeration value="NON-SHARED"/>

</restriction>

</simpleType>

<simpleType name="Category">

<restriction base="string">

<enumeration value="character"/>

<enumeration value="scalability"/>

</restriction>

</simpleType>

<simpleType name="Tagging">

<restriction base="string">

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<enumeration value="function"/>

<enumeration value="operation"/>

</restriction>

</simpleType>

<simpleType name="Exposure">

<restriction base="string">

<enumeration value="API"/>

<enumeration value="KPI"/>

</restriction>

</simpleType>

<complexType name="ServAttrCom">

<sequence>

<element name="category" type="Category"/>

<element name="tagging" type="Tagging" minOccurs="0"/>

<element name="exposure" type="Exposure" minOccurs="0"/>

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</complexType >

<simpleType name="DelayToleranceSupport">

<restriction base="string">

<enumeration value="NOT SUPPORTED"/>

<enumeration value="SUPPORTED"/>

</restriction>

</simpleType>

<simpleType name="DeterminCommAvailability">

<restriction base="string">

<enumeration value="NOT SUPPORTED"/>

<enumeration value="SUPPORTED"/>

</restriction>

</simpleType>

<simpleType name="UserMgmtOpenSupport">

<restriction base="string">

<enumeration value="NOT SUPPORTED"/>

<enumeration value="SUPPORTED"/>

</restriction>

</simpleType>

<simpleType name="V2XCommModelsV2XMode">

<restriction base="string">

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<enumeration value="SUPPORTED BY NR"/>

</restriction>

</simpleType>

<complexType name="DelayTolerance">

<sequence>

<element name="servAttrCom" type="sl:ServAttrCom"/>

<element name="support" type="sl:DelayToleranceSupport"/>

</sequence>

</complexType>

<complexType name="DeterminComm">

<sequence>

<element name="servAttrCom" type="sl:ServAttrCom"/>

<element name="availability" type="sl:DeterminCommAvailability"/>

<element name="periodicityList" type="string"/>

</sequence>

</complexType>

<complexType name="DLThpt">

<sequence>

<element name="servAttrCom" type="sl:ServAttrCom"/>

<element name="guaThpt" type="float"/>

<element name="maxThpt" type="float"/>

</sequence>

</complexType>

<complexType name="ULThpt">

<sequence>

<element name="servAttrCom" type="sl:ServAttrCom"/>

<element name="guaThpt" type="float" minOccurs="0"/>

<element name="maxThpt" type="float" minOccurs="0"/>

</sequence>

</complexType>

<complexType name="MaxPktSize">

<sequence>

<element name="servAttrCom" type="sl:ServAttrCom"/>

<element name="maxsize" type="integer"/>

</sequence>

</complexType>

<complexType name="KPIMonitoring">

<sequence>

<element name="servAttrCom" type="sl:ServAttrCom"/>

<element name="kPIList" type="string"/>

</sequence>

</complexType>

<complexType name="UserMgmtOpen">

<sequence>

<element name="servAttrCom" type="sl:ServAttrCom"/>

<element name="support" type="sl:UserMgmtOpenSupport"/>

</sequence>

</complexType>

<complexType name="V2XCommMode">

<sequence>

<element name="servAttrCom" type="sl:ServAttrCom"/>

<element name="v2XMode" type="sl:V2XCommModelsV2XMode"/>

</sequence>

</complexType>

<complexType name="TermDensity">

<sequence>

<choice minOccurs="1" maxOccurs="1">

<element name="servAttrCom" type="sl:ServAttrCom"/>

<element name="density" type="integer"/>

</choice>

</sequence>

</complexType>

<complexType name="ServiceProfile">

<sequence>

<element name="serviceProfileId" type="string"/>

<element name="sNSSAIList" type="ngc:SnssaiList"/>

<element name="pLMNIdList" type="en:PLMNIdList"/>

<element name="maxNumberofUEs" type="long" minOccurs="0"/>

<element name="latency" type="integer" minOccurs="0"/>

<element name="uEMobilityLevel" type="integer" minOccurs="0"/> <element name="resourceSharingLevel" type="integer" minOccurs="0"/>

<element name="sst" type="ngc:Sst"/>

<element name="availability" type="float" minOccurs="0"/>

<element name="delayTolerance" type="DelayTolerance" minOccurs="0"/>

<element name="deterministicComm" type="DeterminComm" minOccurs="0"/>

<element name="dLThptPerSlice" type="DLThpt" minOccurs="0"/>

<element name="dLThptPerUE" type="DLThpt" minOccurs="0"/>

<element name="uLThptPerSlic" type="ULThpt" minOccurs="0"/>

<element name="uLThptPerUE" type="ULThpt" minOccurs="0"/>

<element name="maxPktSize" type="MaxPktSize" minOccurs="0"/>

<element name="maxNumberofConns" type="MaxNumberofConns" minOccurs="0"/>

<element name="kPIMonitoring" type="KPIMonitoring" minOccurs="0"/>

<element name="userMgmtOpen" type="UserMgmtOpen" minOccurs="0"/>

<element name="v2XCommModels" type="V2XCommMode" minOccurs="0"/>

<element name="coverageArea" type="string" minOccurs="0"/>

<element name="termDensity" type="TermDensity" minOccurs="0"/>

<element name="activityFactor" type="float" minOccurs="0"/>

<element name="uESpeed" type="integer" minOccurs="0"/>

<element name="jitter" type="integer" minOccurs="0"/>

<element name="survivalTime" type="string" minOccurs="0"/>

</sequence>

</complexType>

<complexType name="ServiceProfileList">

<sequence>

<element name="serviceProfile" type="sl:ServiceProfile"/>

</sequence>

</complexType>

<complexType name="SliceProfile">

<sequence>

<element name="sliceProfileId" type="string"/>

<element name="sNSSAIList" type=" ngc:SnssaiList"/>

<element name="pLMNIdList" type="en:PLMNIdList"/>

<element name="perfReq" type="sl:PerfReq"/>

<element name="maxNumberofUEs" type="long" minOccurs="0"/>

<element name="coverageAreaTAList" type="ngc:NrTACList" minOccurs="0"/>

<element name="latency" type="integer" minOccurs="0"/>

<element name="resourceSharingLevel" type="integer" minOccurs="0"/>

</sequence>

</complexType>

<complexType name="SliceProfileList">

<sequence>

<element name="sliceProfile" type="sl:SliceProfile"/>

</sequence>

</complexType>

<complexType name="NsInfo">

<!-- Refer to definitions in subclause 8.3.3.2.2 of ETSI NFV IFA013 -->

<sequence>

<element name="nsInstanceId" type="string"/>

<element name="nsName" type="string"/>

<element name="description" type="string"/>

</sequence>

</complexType>

<element name="NetworkSlice" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">

<complexType>

<complexContent>

<extension base="xn:NrmClass">

<sequence>

<element name="attributes">

<complexType>

<all>

<!-- Inherited attributes from SubNetwork -->

<element name="dnPrefix" type="string" minOccurs="0"/>

<element name="userLabel" type="string"/>

<element name="userDefinedNetworkType" type="string"/>

<element name="setOfMcc" type="string" minOccurs="0"/>

<element name="measurements" type="xn:MeasurementTypesAndGPsList" minOccurs="0"/>

<!-- End of inherited attributes from SubNetwork -->

<element name="operationalState" type="sm:operationalStateType"/>

<element name="administrativeState" type="sm:administrativeStateType"/>

<element name="serviceProfileList" type="sl:ServiceProfileList"/> <element *name*="networkSliceSubnetRef" *type*="xn:dn"/>

</all>

</complexType>

</element>

<choice minOccurs="0" maxOccurs="unbounded">

<element ref="xn:MeasurementControl"/>

</choice>

</sequence>

</extension>

</complexContent>

</complexType>

</element>

<element name="NetworkSliceSubnet" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">

<complexType>

<complexContent>

<extension base="xn:NrmClass">

<sequence>

<element name="attributes">

<complexType>

<all>

<!-- Inherited attributes from SubNetwork -->

<element name="dnPrefix" type="string" minOccurs="0"/>

<element name="userLabel" type="string"/>

<element name="userDefinedNetworkType" type="string"/>

<element name="setOfMcc" type="string" minOccurs="0"/>

<element name="measurements" type="xn:MeasurementTypesAndGPsList" minOccurs="0"/>

<!-- End of inherited attributes from SubNetwork -->

<element name="operationalState" type="sm:operationalStateType"/>

<element name="administrativeState" type="sm:administrativeStateType"/>

<element name="nsInfo" type="sl:NsInfo" minOccurs="0"/>

<element name="sliceProfileList" type="sl:SliceProfileList"/>

<element *name*="managedFunctionRef" *type*="xn:dnlist"/>

<element *name*="networkSliceSubnetRef" *type*="xn:dnlist"/>

</all>

</complexType>

</element>

<choice minOccurs="0" maxOccurs="unbounded">

<element ref="xn:MeasurementControl"/>

</choice>

</sequence>

</extension>

</complexContent>

</complexType>

</element>

</schema>

***Fourth change.***

## J.4.3 OpenAPI document "sliceNrm.yaml"

openapi: 3.0.1

info:

title: Slice NRM

version: 16.4.0

description: >-

OAS 3.0.1 specification of the Slice NRM

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externalDocs:

description: 3GPP TS 28.541 V16.4.0; 5G NRM, Slice NRM

url: http://www.3gpp.org/ftp/Specs/archive/28\_series/28.541/

paths: {}

components:

schemas:

#------------ Type definitions ---------------------------------------------------

Float:

type: number

format: float

MobilityLevel:

type: string

enum:

- STATIONARY

- NOMADIC

- RESTRICTED MOBILITY

- FULLY MOBILITY

SharingLevel:

type: string

enum:

- SHARED

- NON-SHARED

Category:

type: string

enum:

- CHARACTER

- SCALABILITY

Tagging:

type: string

enum:

- PERFORMANCE

- FUNCTION

- OPERATION

Exposure:

type: string

enum:

- API

- KPI

ServAttrCom:

type: object

properties:

category:

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

tagging:

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

exposure:

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

Support:

type: string

enum:

- NOT SUPPORTED

- SUPPORTED

DelayTolerance:

type: object

properties:

servAttrCom:

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

support:

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

DeterministicComm:

type: object

properties:

servAttrCom:

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

availability:

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

periodicityList:

type: string

DLThptPerSlice:

type: object

properties:

servAttrCom:

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

guaThpt:

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

maxThpt:

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

DLThptPerUE:

type: object

properties:

servAttrCom:

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

guaThpt:

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

maxThpt:

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

ULThptPerSlice:

type: object

properties:

servAttrCom:

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

guaThpt:

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

maxThpt:

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

ULThptPerUE:

type: object

properties:

servAttrCom:

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

guaThpt:

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

maxThpt:

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

MaxPktSize:

type: object

properties:

servAttrCom:

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

maxsize:

type: integer

MaxNumberofConns:

type: object

properties:

servAttrCom:

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

nOofConn:

type: integer

KPIMonitoring:

type: object

properties:

servAttrCom:

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

kPIList:

type: string

UserMgmtOpen:

type: object

properties:

servAttrCom:

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

support:

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

V2XCommModels:

type: object

properties:

servAttrCom:

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

v2XMode:

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

TermDensity:

type: object

properties:

servAttrCom:

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

density:

type: integer

NsInfo:

type: object

properties:

nsInstanceId:

type: string

nsName:

type: string

ServiceProfileList:

type: object

additionalProperties:

type: object

properties:

snssaiList:

$ref: 'nrNrm.yaml#/components/schemas/SnssaiList'

plmnIdList:

$ref: 'nrNrm.yaml#/components/schemas/PlmnIdList'

maxNumberofUEs:

type: number

latency:

type: number

uEMobilityLevel:

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

sst:

$ref: 'nrNrm.yaml#/components/schemas/Sst'

resourceSharingLevel:

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

availability:

type: number

delayTolerance:

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

deterministicComm:

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

dLThptPerSlice:

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

dLThptPerUE:

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

uLThptPerSlice:

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

uLThptPerUE:

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

maxPktSize:

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

maxNumberofConns:

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

kPIMonitoring:

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

userMgmtOpen:

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

v2XModels:

$ref: '#/components/schemas/V2XCommModels'

coverageArea:

type: string

termDensity:

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

activityFactor:

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

uESpeed:

type: integer

jitter:

type: integer

survivalTime:

type: string

SliceProfileList:

type: object

additionalProperties:

type: object

properties:

snssaiList:

$ref: 'nrNrm.yaml#/components/schemas/SnssaiList'

plmnIdList:

$ref: 'nrNrm.yaml#/components/schemas/PlmnIdList'

maxNumberofUEs:

type: number

coverageAreaTAList:

$ref: '5gcNrm.yaml#/components/schemas/TACList'

latency:

type: number

resourceSharingLevel:

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

#------------ Definition of concrete IOCs ----------------------------------------

NetworkSlice:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/Top-Attr'

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/SubNetwork-Attr'

- type: object

properties:

networkSliceSubnetRef:

$ref: 'genericNrm.yaml#/components/schemas/Dn'

operationalState:

$ref: 'genericNrm.yaml#/components/schemas/OperationalState'

administrativeState:

$ref: 'genericNrm.yaml#/components/schemas/AdministrativeState'

serviceProfileList:

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

NetworkSliceSubnet:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/Top-Attr'

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/SubNetwork-Attr'

- type: object

properties:

managedFunctionRefList:

$ref: 'genericNrm.yaml#/components/schemas/DnList'

networkSliceSubnetRefList:

$ref: 'genericNrm.yaml#/components/schemas/DnList'

operationalState:

$ref: 'genericNrm.yaml#/components/schemas/OperationalState'

administrativeState:

$ref: 'genericNrm.yaml#/components/schemas/AdministrativeState'

nsInfo:

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

sliceProfileList:

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

#------------ Definitions in TS 28.541 for TS 28.532 -----------------------------

resources-sliceNrm:

oneOf:

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

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

***End of changes***