**3GPP TSG-SA5 Meeting #131eS5-203256**

**e-meeting, 25 May – 3 June 2020**

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| *CR-Form-v11.4* |
| **CHANGE REQUEST** |
|  |
|  | **28.541** | **CR** | **0308** | **rev** | **-** | **Current version:** | **16.4.1** |  |
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| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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|  |
| ***Title:***  | update slice NRM to align with refined slice definitions |
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| ***Source to WG:*** | Nokia, Nokia Shanghai Bell, Intel |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | TEI16 |  | ***Date:*** | 2020-05-08 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)Rel-12 (Release 12)Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | Slice definitions was corrected to reflect network slice and network slice subnet concept and usage in SA5. Network Resource Model (NRM) of network slice and network slice subnet should be fixed to align with new slice definitions. |
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| ***Summary of change:*** | 1. Change cardinality between NetworkSlice and ServiceProfile to 1:1 because NetworkSlice is used to model SA5::Network Slice which represents a service view to satisfy requirements of the service defined in a ServiceProfile
2. Assign a single S-NSSAI to a NetworkSlice MOI as SA2::Network Slice is identified by S-NSSAI and NetworkSlice is used to model SA5::Network Slice which can represent SA2::Network Slice.
3. Remove S-NSSAI from ServiceProfile as S-NSSAI is assigned by the Network Slice Producer to identify SA2::Network Slice, which is returned from NSP to NSC after a Network Slice being deployed. PLMNInfo is used to include both PLMNId and S-NSSAI
4. Assign a single S-NSSAI to a SliceProfile instance because SliceProfile reflects resource requirements on NetworkSliceSubnet for a Network Slice (identified by S-NSSAI). PLMNInfo is used to include both PLMNId and S-NSSAI
5. Change pLMNIdList in ServiceProfile to optional as generally consumer don’t need to input pLMNIdList. However there could be scenario that the consumer may require resource assigned to specific PLMN especially in RAN sharing case..
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| ***Consequences if not approved:*** | Network Slice feature cannot be implemented if NRM is not aligned with correct slice definitions |
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| ***Clauses affected:*** | 2, 6.2.1, 6.2.2, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.1 |
|  |  |
|  | **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:*** |  |

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| **Start of 1st modification** |

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[x] 3GPP TS 28.530: "Management and orchestration; Concepts, use cases and requirements".

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| **End of 1st modification** |

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| **Start of 2nd modification** |

## 6.2 Class diagram

### 6.2.1 Relationships



Figure 6.2.1-1: network slice NRM fragment relationship

NOTE 1: The <<OpenModelClass>> NetworkService and <<OpenModelClass>> VNF are defined in [40].

NOTE 2: The target Network Service (NS) instance represents a group of VNFs and PNFs that are supporting the source network slice subnet instance.

NOTE 3: The instance tree of this NRM fragment would not contain the instances of NetworkService and VNF. However, the NetworkSliceSubNet instances would have an attribute holding the identifiers of NetworkService instances and the ManagedFunction instance would have an attribute holding identifiers of VNF instances.

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| **End of 2nd modification** |

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| **Start of 3rd modification** |

## 6.3 Class definitions

### 6.3.1 NetworkSlice

#### 6.3.1.1 Definition

This IOC represents the properties of a network slice in a 5G network and management system. For more information about the network slice, see 3GPP TS 28.530 [x].

#### 6.3.1.2 Attributes

The NetworkSlice IOC includes attributes inherited from SubNetwork IOC (defined in TS 28.622[30]) and the following attributes:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| operationalState | M | T | F | F | T |
| administrativeState | M | T | T | F | T |
| serviceProfile | M | T | T | F | T |
| pLMNInfo | M | T | F | T | T |
| **Attribute related to role** |  |  |  |  |  |
| networkSliceSubnetRef | M | T | F | F | T |

#### 6.3.1.3 Attribute constraints

None.

#### 6.3.1.4 Notifications

The common notifications defined in subclause 6.5 are valid for this IOC, without exceptions or additions.

### 6.3.2 NetworkSliceSubnet

#### 6.3.2.1 Definition

This IOC represents the properties of a network slice subnet in a 5G network management system. For more information about the network slice subnet , see 3GPP TS 28.530 [x].

#### 6.3.2.2 Attributes

The NetworkSliceSubnet IOC includes attributes inherited from SubNetwork IOC (defined in TS 28.622[30]) and the following attributes:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| operationalState | M | T | F | F | T |
| administrativeState | M | T | T | F | T |
| nsInfo | CM | T | F | F | T |
| sliceProfileList | M | T | T | F | T |
| **Attribute related to role** |  |  |  |  |  |
| managedFunctionRef | M | T | F | F | T |
| networkSliceSubnetRef | M | T | F | F | T |

#### 6.3.2.3 Attribute constraints

|  |  |
| --- | --- |
| Name | Definition |
| nsInfo Support Qualifier | Condition: It shall be supported if the NSS instance is realized in the virtualized environment. Otherwise this attribute shall be absent. |

#### 6.3.2.4 Notifications

The common notifications defined in subclause 6.5 are valid for this IOC, without exceptions or additions.

### 6.3.3 ServiceProfile <<dataType>>

#### 6.3.3.1 Definition

This data type represents the properties of network slice related requirements that should be supported by the network slice. 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 |
|  |  |  |  |  |  |
| pLMNIdList | O | T | T | F | T |
| maxNumberofUEs | O | T | T | F | T |
| coverageArea | O | T | T | F | T |
| latency | O | T | T | F | T |
| uEMobilityLevel | O | T | T | F | T |
| resourceSharingLevel | O | T | T | F | T |
| sST | M | T | T | F | T |
| availability | O | T | T | F | T |
| delayTolerance | O | T | T | F | T |
| deterministicComm | O | T | T | F | T |
| dLThptPerSlice | O | T | T | F | T |
| dLThptPerUE | O | T | T | F | T |
| uLThptPerSlic | O | T | T | F | T |
| uLThptPerUE | O | T | T | F | T |
| maxPktSize | O | T | T | F | T |
| maxNumberofConns | O | T | T | F | T |
| kPIMonitoring | O | T | T | F | T |
| supportedAccessTech | O | T | T | F | T |
| userMgmtOpen | O | T | T | F | T |
| v2XCommModels | O | T | T | F | T |
| termDensity | O | T | T | F | T |
| activityFactor | O | T | T | F | T |
| uESpeed | O | T | T | F | T |
| jitter | O | T | T | F | T |
| survivalTime | O | T | T | F | T |
| reliability | O | T | T | F | T |

#### 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 in a 5G network management system.

#### 6.3.4.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| sliceProfileId | M | T | F | T | T |
| pLMNInfo | 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 |
| uEMobilityLevel | 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.

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| **End of 3rd modification** |

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| **Start of 4th modification** |

### 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: Floatmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: True |
| serviceProfileId | A unique identifier of property of network slice related requirement should be supported by the network slice instance. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| sliceProfileId | A unique identifier of the property of network slice subnet related requirement should be supported by the network slice subnet instance. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| operationalState | It indicates the operational state of the NetworkSlice instance or the NetworkSliceSubnet 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: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| administrativeState | It indicates the administrative state of the NetworkSlice instance or the NetworkSliceSubnet 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: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/A isNullable: False |
| nsInfo | This attribute contains the NsInfo of the NS instance corresponding to the NetworkSliceSubnet instance. The NsInfo is described in clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: NsInfomultiplicity: 1isOrdered: N/AisUnique: TruedefaultValue: No default valueisNullable: True |
| nSInstanceId | This attribute specifies the identifier of NS instance corresponding to the NetworkSliceSubnet instance.See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: TruedefaultValue: No default valueisNullable: True |
| nsName | This attribute specifies the name of NS instance corresponding to the NetworkSliceSubnet instance.See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: TruedefaultValue: No default valueisNullable: True |
| description | This attribute specifies the description of NS instance corresponding to the NetworkSliceSubnet instance.See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: TruedefaultValue: No default valueisNullable: True |
| category | This attribute specifies the category of a service requirement/attribute of GST (see GSMA NG.116 [50]).allowedValues: character, scalability | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: 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: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: 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: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/A isNullable: False |
|  |  |  |
| pLMNInfo | This parameter specifies S-NSSAI assigned by a PLMN. It is returned from the Network Slice Provider (NSP) to Network Slice Customer (NSC) after the NSP created a network slice for the NSC.  | type: PLMNInfomultiplicity: 1..\*isOrdered: N/AisUnique: TruedefaultValue: NoneisNullable: False |
| pLMNIdList | This parameter specifies identifier list of PLMNs. | type: PLMNIdmultiplicity: 1..\*isOrdered: N/AisUnique: TruedefaultValue: NoneallowedValues: N/AisNullable: False |
| maxNumberofUEs | An attribute specifies the maximum number of UEs may simultaneously access the NetworkSlice instance. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: 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: Integermultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: 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 NetworkSlice instance. See clause 6.3.1 of 28.554 [27]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| uEMobilityLevel | An attribute specifies the mobility level of UE accessing the NetworkSlice instance. See 6.2.1 of TS 22.261 [28].allowedValues: stationary, nomadic, restricted mobility, fully mobility. | type: Enummultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: True |
| serviceProfile.resourceSharingLevel | An attribute specifies whether the resources to be allocated to the NetworkSlice instance may be shared with another NetworkSlice instance(s).allowedValues: shared, non-shared. | type: Enummultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: YesisNullable: True |
| sliceProfile.resourceSharingLevel | An attribute specifies whether the resources to be allocated to the NetworkSliceSubnet instance may be shared with another NetworkSliceSubnet instance(s).allowedValues: shared, non-shared. | type: Enummultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: YesisNullable: True |
| serviceProfile | An attribute specifies a ServiceProfile (see clause 6.3.3) supported by the NetworkSlice instance | type: ServiceProfilemultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| sliceProfileList | An attribute specifies a list of SliceProfile (see clause 6.3.4) supported by the NetworkSliceSubnet instance | type: SliceProfilemultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| sST | This parameter specifies the slice/service type for a ServiceProfile.See clause 5.15.2 of 3GPP TS 23.501 [2]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: 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: DelayTolerancemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: False |
| DeterminComm.periodicityList | An attribute specifies a list of periodicities supported by the NSI for deterministic communication. | type: Floatmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: DLThptmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| dLThptPerUE | This attribute defines data rate supported by the network slice per UE, refer NG.116 [50].  | type: DLThptmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| guaThpt | This attribute describes the guaranteed data rate. | type: Floatmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: True |
| maxThpt | This attribute describes the maximum data rate. | type: Floatmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: ULThptmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| uLThptPerUE | This attribute defines data rate supported by the network slice per UE, refer NG.116 [50].  | type: ULThptmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| maxPktSize | This parameter specifies the maximum packet size supported by the network slice, refer NG.116 [50].  | type: MaxPktSizemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| MaxPktSize.maxsize | This parameter specifies the maximum packet size supported by the network slice, refer NG.116 [50].  | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| maxNumberofConns | This parameter defines the maximum number of concurrent sessions supported by the network slice, refer NG.116 [50].  | type: MaxNumberofConnsmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| MaxNumberofConns.nOofConn | This parameter defines the maximum number of concurrent sessions supported by the network slice, refer NG.116 [50].  | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| kPIMonitoring | An attribute specifies the name list of KQIs and KPIs available for performance monitoring. | type: KPIMonitoringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: True |
| KPIMonitoring. kPIList | An attribute specifies the name list of KQIs and KPIs available for performance monitoring. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: True |
| supportedAccessTech | An attribute specifies which access technologies are supported by the NSI. | type: SupportedAccessTechmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: True |
| SupportedAccessTech.accTechList | An attribute specifies which access technologies are supported by the NSI.allowedValues:1: NR2: NB-IoT3: WI-Fi4: Fixed access (e.g. DSL, Fibre) | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: UserMgmtOpenmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: False |
| v2XCommModels | An attribute specifies whether or not the V2X communication mode is supported by the NSI. | type: V2XCommModemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: TermDensitymultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: Floatmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: 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: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: True |
| reliability | An attribute specifies in the context of network layer packet transmissions, percentage value of the amount of sent network layer packets successfully delivered to a given system entity within the time constraint required by the targeted service, divided by the total number of sent network layer packets, see TS 22.261 [28] and TS 22.104 [51]. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: True |
| NetworkSlice.networkSliceSubnetRef | This holds a DN of NetworkSliceSubnet relating to the NetworkSlice instance. | type: DNmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| NetworkSliceSubnet.networkSliceSubnetRef | This holds a list of DN of constituent NetworkSliceSubnet supporting NetworkSliceSubnet instance  | type: DNmultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| managedFunctionRef | This holds a list of DN of ManagedFunction instances supporting the NetworkSliceSubnet instance. | type: DNmultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |

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| **End of 4th modification** |