**3GPP TSG-SA5 Meeting #133eS5-205257**

**e-meeting, 12 – 21 October 2020**

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| *CR-Form-v11.4* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **28.541** | **CR** | **0399** | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Fix description related to service profile | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EMA5SLA | | | | |  | ***Date:*** | | | 2020-09-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories 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:*** | | Service profile related description is not fully correct | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Fix NetworkSlice and NetworkSliceSubnet definition  Fix ServiceProfile and SliceProfile related definitions and descriptions | | | | | | | | |
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| ***Consequences if not approved:*** | | Incorrect description of the service profile could lead wrong implementation | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.1, Annex L2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System Architecture for the 5G System".

[3] 3GPP TS 38.300: "NR; Overall description; Stage-2".

[4] 3GPP TS 38.401: "NG-RAN; Architecture description".

[5] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".

[6] 3GPP TS 38.420: "NG-RAN; Xn general aspects and principles".

[7] 3GPP TS 38.470: "NG-RAN; F1 general aspects and principles".

[8] 3GPP TS 38.473: "NG-RAN; F1 application protocol (F1AP)".

[9] 3GPP TS 37.340: "NR; Multi-connectivity; Overall description; Stage 2".

[10] 3GPP TS 28.540: "Management and orchestration; 5G Network Resource Model (NRM);Stage 1".

[11] 3GPP TS 28.662: "Telecommunication management; Generic Radio Access Network (RAN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS) ".

[12] 3GPP TS 38.104: "NR; Base Station (BS) radio transmission and reception".

[13] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[14] 3GPP TS 36.410: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); S1 general aspects and principles".

[15] 3GPP TS 36.423: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); X2 application protocol".

[16] 3GPP TS 36.425: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); X2 interface user plane protocol".

[17] 3GPP TS 28.625: "State Management Data Definition Integration Reference Point (IRP); Information Service (IS)".

[18] ITU-T Recommendation X.731: "Information technology - Open Systems Interconnection - Systems Management: State management function".

[19] 3GPP TS 28.658: "Telecommunications management; Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

[20] 3GPP TS 28.702: "Core Network (CN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[21] 3GPP TS 28.708: "Telecommunication management; Evolved Packet Core (EPC) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

[22] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

[23] 3GPP TS 29.510: "5G system; Network Function Repository Services; Stage 3".

[24] 3GPP TS 29.531: "5G System; Network Slice Selection Services Stage 3".

[25] Void.

[26] 3GPP TS 28.531: "Management and orchestration; Provisioning".

[27] 3GPP TS 28.554: "Management and orchestration; 5G End to end Key Performance Indicators (KPI)".

[28] 3GPP TS 22.261: "Service requirements for next generation new services and markets".

[29] ETSI GS NFV-IFA 013 V2.4.1 (2018-02) "Network Function Virtualisation (NFV); Management and Orchestration; Os-Ma-nfvo Reference Point - Interface and Information Model Specification".

[30] 3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[31] Void.

[32] 3GPP TS 38.211: "NR; Physical channels and modulation".

[33] 3GPP TS 32.616: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP); Solution Set (SS) definitions".

[34] 3GPP TS 28.623: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definitions".

[35] 3GPP TS 28.532: "Management and orchestration; Management services".

[36] Void.

[37] IETF RFC 791: "Internet Protocol".

[38] IETF RFC 2373: "IP Version 6 Addressing Architecture".

[39] IEEE 802.1Q: "Media Access Control Bridges and Virtual Bridged Local Area Networks".

[40] ETSI GR NFV-IFA 015 (V2.4.1): "Network Function Virtualisation (NFV) Release 2; Management and Orchestration; Report on NFV Information Model".

[41] 3GPP TS 38.213: "NR; Physical layer procedures for control".

[42] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".

[43] 3GPP TS 32.156: "Telecommunication management; Fixed Mobile Convergence (FMC) model repertoire".

[44] IETF RFC 4122: "A Universally Unique IDentifier (UUID) URN Namespace".

[45] IETF RFC 8528: "YANG Schema Mount".

[46] Void

[47] 3GPP TS 32.160: "Management and orchestration; Management Service Template".

[48] 3GPP TS 38.463: "NG-RAN; E1 application protocol (E1AP)".

[49] 3GPP TS 38.304: "NR; User Equipment (UE) procedures in Idle mode and RRC Inactive state".

[50] GSMA NG.116 - Generic Network Slice Template Version 3.0 (2020-05-22).

[51] 3GPP TS 22.104: "Service requirements for cyber-physical control applications in vertical domains; Stage 1".

[52] 3GPP TS 33.501: " Security architecture and procedures for the 5G System".

[53] 3GPP TS 38.901: "Study on channel model for frequencies from 0.5 to 100 GHz ".

[54] 3GPP TS 38.331: "NR; Radio Resource Control (RRC) protocol specification".

[55] 3GPP TS 38.215: "NR; Physical layer measurements".

[56] 3GPP TS 29.244: "Technical Specification Group Core Network and Terminals; Interface between the Control Plane and the User Plane Nodes; Stage 3".

[57] 3GPP TS 28.313: "Self-Organizing Networks (SON) for 5G networks".

[58] 3GPP TS 38.423: "NR; Xn application protocol (XnAP)".

[59] 3GPP TS 23.503: "Policy and Charging Control Framework for the 5G System; Stage 2".

[60] 3GPP TS 29.512: "5G System; Session Management Policy Control Service; Stage 3".

[61] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".

[62] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".

[63] IETF RFC 7042: "IANA Considerations and IETF Protocol and Documentation Usage for IEEE 802 Parameters".

[64] IEEE 802.3-2015: "IEEE Standard for Ethernet".

[65] IEEE 802.1Q-2014: "Bridges and Bridged Networks".

[66] IETF RFC 4301: "Security Architecture for the Internet Protocol".

[67] 3GPP TS 29.514: "5G System; Policy Authorization Service; Stage 3".

[68] 3GPP TS 32.422: "Telecommunication management; Subscriber and equipment trace; Trace control and configuration management".

[69] 3GPP TS 28.552: " Management and orchestration; 5G performance measurements".

[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** |

### 6.3.1 NetworkSlice

#### 6.3.1.1 Definition

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

### 6.3.2 NetworkSliceSubnet

#### 6.3.2.1 Definition

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

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| **End of 2nd modification** |

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| **Start of 3rd modification** |

### 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 NetworkSlice 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]. An NSP may add additional requirements not directly derived from SLA’s, associated to the NSP 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.

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| **End of 3rd modification** |

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| **Start of 4th modification** |

### 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 NetworkSliceSubnet instance in a 5G network.

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| **End of 4th modification** |

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| **Start of 5th modification** |

## 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: Real  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. | 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. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| operationalState | It indicates the operational state of the network slice or the network slice subnet. 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 or the network slice subnet. It describes the permission to use or prohibition against using the managed object 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 network slice to be created or the existing network slice to be re-used.  sNSSAList is defined in subclause 4.4.1 |  |
| perfReq | This parameter specifies the requirements to the network slice subnet in terms of the scenarios defined in the TS 22.261 [28] and TS 22.104 [51], i.e. the "performance requirements for high data rate and traffic density scenarios" in TS 22.261 [28], "periodic deterministic communication, aperiodic deterministic communication, non-deterministic communication, and mixed traffic" in TS 22.104 [51].  It is a structure containing the following elements:  - list of perfReq  Depending on the sST value, the list of perfReq will be  - list of eMBBPerfReq  or  - list of uRLLCPerfReq  or  - list of mIoTPerfReq  NOTE 1: the list of mIoTPerfReq is not addressed in the present document.  allowedValues:  - list of eMBBPerfReq is a list of entries where an entry identifies the performance requirements to the network slice subnet in terms of the scenarios defined in the Table 7.1-1 of TS 22.261 [28]. An entry has the following attributes: expDataRateDL (Integer), expDataRateUL (Integer), areaTrafficCapDL (Integer), areaTrafficCapUL (Integer), overallUserDensity (Integer), activityFactor (Integer), (see table 7.1-1 of TS 22.261 [28]).  - list of uRLLCPerfReq is a list of entries where an entry identifies the performance requirements to the network slice subnet in terms of the scenarios defined in clauses 5.2 through 5.5 of TS 22.104 [51]. An entry has the following attributes: cSAvailabilityTarget (Float), cSReliabilityMeanTime (String), , expDataRate (Integer), msgSizeByte (String), transferIntervalTarget (String), survivalTime (String), , , (see table 5.2-1, table 5.3-1, table 5.4-1 and table 5.5-1 of TS 22.104 [51]).  NOTE 2: Limitation on attribute values in SliceProfile is not addressed in the present document.  NOTE 3: The attributes inside perfReq here need further breaking down to define requirements for each subnetwork under different SST values. | type: PerfReq  multiplicity: \*1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| maxNumberofUEs | An attribute specifies the maximum number of UEs may simultaneously access the network slice. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| coverageAreaTAList | An attribute specifies a list of Tracking Areas for the network slice .  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. 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. 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 may be shared with another network slice(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 may be shared with another network slice subnet(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 | 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 | type: SliceProfile  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| sST | This parameter specifies the slice/service type in a ServiceProfile to be supported by a network slice.  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 network slice 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 network slice 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 network slice for deterministic communication. | type: Real  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: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| maxThpt | This attribute describes the maximum data rate. | type: Real  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 |
| maxNumberofPDUSessions | This parameter defines the maximum number of concurrent PDU sessions supported by the network slice, refer NG.116 [50]. | type: MaxNumberofPDUSessions  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| MaxNumberofPDUSessions.nOofPDUSessions | This parameter defines the maximum number of concurrent PDU 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 |
| nBIoT | An attribute specifies whether NB-IoT is supported in the RAN in the network slice, see NG.116 [50]. | type: NBIoT  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| NBIoT.support | An attribute specifies whether NB-IoT is supported in the RAN in the network slice, see NG.116 [50].  allowedValues:  "NOT SUPPORTED", "SUPPORTED". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| userMgmtOpen | An attribute specifies whether or not the network slice 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 network slice 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 network slice. | 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 network slice.  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 specifies 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: Real  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 |
| 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: 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 |
| ipAddress | This parameter specifies the IP address assigned to a logical transport interface/endpoint.  It can be an IPv4 address (See RFC 791 [37]) or an IPv6 address (See RFC 2373 [38]).  See note 1 | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| logicInterfaceId | This parameter specifies the identify of a logical transport interface. It could be VLAN ID (See IEEE 802.1Q [39]), MPLS Tag or Segment ID. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nextHopInfoList | This parameter is used to identify ingress transport node. Each node can be identified by any of combination of IP address of next-hop router of transport network, system name, port name, IP management address of transport nodes. | type: String  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| qosProfileRefList | This parameter specifies reference to QoS Profile for a logical transport interface. A QoS profile includes a set of parameters which are locally provisioned on both sides of a logical transport interface. | type: String  multiplicity: \*  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: True |
| maxDLDataVolume | An attribute specifies the maximum DL PDCP data volume supported by the network slice instance (performance measurement definition see in TS 28.552[69]). The unit is MByte/day. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| maxULDataVolume | An attribute specifies the maximum UL PDCP data volume supported by the network slice instance (performance measurement definition see in TS 28.552[69]). The unit is MByte/day. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| epApplicationRef | This parameter specifies a list of application level EPs associated with the logical transport interface.  See note 2. | type: DN  multiplicity: 1..\*  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| epTransportRef | This parameter specifies a list of transport level EPs associated with the application level EP | type: DN  multiplicity: \*  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: True |
| NOTE 1: There is no direct relationship between localAddress/remoteAddress in EP\_RP and ipAddress in EP\_transport. While the localAddress/remoteAddress in EP\_RP could be exchanged as part of signalling between GTP-u tunnel end points, ipAddress in EP\_transport is used for transport routing.  NOTE 2: Application level EP represents EP\_RP defined in TS 28.622 (see [30]). e.g. including EP\_NgC, EP\_N3, etc... | | |

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| **End of 5th modification** |

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| **Start of 6th modification** |

# L.2 GSMA GST, ServiceProfile and sliceProfile

The GSMA GST is used as the SLA information for the communication between the NSC (e.g. vertical industry) and the NSP). The SLA requirements can be fulfilled from management aspect and control aspect in a coordinated way. The SLS includes ServiceProfile information model.

As shown in figure L.2.1, the GST [50] is translated and used as input to NRM ServiceProfile, the ServiceProfile can be translated to corresponding requirements for dedicated domains. For example, 5GC SliceProfile is used to carry 5GC domain requirements, NG-RAN SliceProfile is used to carry NG-RAN domain requirements, and TN requirements are translated and provide to TN domain. Some of the information in 5GC SliceProfile and NG-RAN SliceProfile translated to configurable parameters of network function for the control plane SLA support purpose.

NOTE: how to do the translation is out of the scope of this document.

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| **End of 6h modification** |