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**3GPP TSG- Meeting # *d1***

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **28.541** | **CR** | **0658** | **rev** | **-** | **Current version:** | **17.5.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

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|  |
| ***Title:***  | NRM enhacements for SMFFunction |
|  |  |
| ***Source to WG:*** | Nokia Germany |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | adNRM |  | ***Date:*** | 2022-01-07 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | Currently NRM cannot support fully the configuration of 5G Core SMF according to TS 29.510, since certain features are missing. Below is the reasoning for introducing these features in this contribution: 1. pLMNInfoList and cNSIIdList are corrections to update and align these feature names with ones used in other NFs.
2. sNssaiSmfInfoList indictes which parameters are supported by SMF per slice. This feature needs to be configured by the operator because it a choice of service per differnet slice.
3. taiList and taiRangeList similarly to AMF each SMF can optionally be configured to support certain TAIs
4. pgwFqdn, pgwIpAddrList and pgwFqdnList are optinal features when SMF is combined with PGW and these depend on the operator deployment decision.
5. accessType provides the condition of access type of the UE based on TS 29.512.
6. priority is an optional frature that once configured by the operator it can overrun the respective priority in the NFManagedProfile in order to differentiate. This feature need to be configured by the operator .
7. vsmfSupportInd is an optinal feature to indicate the support of V-SMF capability and its preference to be selected as V-SMF. This feature is a preference option that needs to be decided and controlled by the operator.
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|  |  |
| ***Summary of change:*** | Added missing attributes on SMF based on TS 29.510 |
|  |  |
| ***Consequences if not approved:*** | Lack of support for configuring SMF. |
|  |  |
| ***Clauses affected:*** | 2, 5.3, 5.3.2, 5.4 |
|  |  |
|  | **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:*** |  |

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| **1st Modified Section** |

# 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".

[70] 3GPP TS 28.530: "Management and orchestration; Concepts, use cases and requirements".

[71] 3GPP TS 28.310: "Management and orchestration; Energy efficiency of 5G".

[72] 3GPP TS 28.705: "Telecommunication management; IP Multimedia Subsystem (IMS) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[73] 3GPP TS 23.304: " Proximity based Services (ProSe) in the 5G System".

[74] IETF RFC 8436: " Update to IANA Registration Procedures for Pool 3 Values in the Differentiated Services Field Codepoints (DSCP) Registry".

[75] ECMA-262: "ECMAScript® Language Specification", <https://www.ecma-international.org/ecma-262/5.1/>.

[76] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[77] IANA: "SMI Network Management Private Enterprise Codes", <http://www.iana.org/assignments/enterprise-numbers>.

[78] 3GPP TS 23.548:" 5G System Enhancements for Edge Computing; Stage 2".

[79] 3GPP TS 28.538: "Edge Computing Management".

[80] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".

[n] IETF RFC 5952: "A recommendation for IPv6 address text representation".

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| **2nd Modified Section** |

### 5.3.2 SMFFunction

#### 5.3.2.1 Definition

This IOC represents the SMF function in 5GC. For more information about the SMF, see 3GPP TS 23.501 [2].

#### 5.3.2.2 Attributes

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | S | isReadable | isWritable | isInvariant | isNotifyable |
|  pLMNInfoList | M | T | T | F | T |
| nRTAClist | M | T | T | F | T |
| sBIFQDN | M | T | T | F | T |
| sNssaiSmfInfoList | M | T | T | F | T |
| taiList | O | T | T | F | T |
| taiRangeList | O | T | T | F | T |
| pgwFqdn | O | T | T | F | T |
| pgwIpAddrList | O | T | T | F | T |
| accessType | O | T | T | F | T |
| priority | O | T | T | F | T |
|  |  |  |  |  |  |
| cNSIIdList | CM | T | F | F | T |
| vsmfSupportInd | O | T | T | F | T |
| pgwFqdnList | CM | T | T | F | T |
| managedNFProfile | M | T | T | F | T |
| commModelList | M | T | T | F | T |
| **Attribute related to role** |  |  |  |  |  |
| configurable5QISetRef | O | T | T | F | T |
| dynamic5QISetRef | O | T | F | F | T |

#### 5.3.2.3 Attribute constraints

|  |  |
| --- | --- |
| Name | Definition |
|  |  |
| cNSIIdList S | Condition: Network slicing feature is supported. |
| pgwFqdnList S | Condition: Present if pgwFqdn attribute is present. |

#### 5.3.2.4 Notifications

The common notifications defined in subclause 5.5 are valid for this IOC, without exceptions or additions.

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| **3rd Modified Section** |

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### 5.3.y SnssaiSmfInfoItem <<dataType>>

#### 5.3.y.1 Definition

This <<dataType>> represents the set of parameters supported by SMF for a given S-NSSAI.

#### 5.3.y.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | S | isReadable | isWritable | isInvariant | isNotifyable |
| sNSSAI | M | T | T | F | T |
| dnnSmfInfoList | M | T | T | F | T |

#### 5.3.y.3 Notifications

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

### 5.3.z DnnSmfInfoItem <<dataType>>

#### 5.3.z.1 Definition

This <<dataType>> represents the set of parameters supported by SMF for a given DNN.

#### 5.3.z.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | S | isReadable | isWritable | isInvariant | isNotifyable |
| dnn | M | T | T | F | T |
| dnaiList | O | T | T | F | T |

#### 5.3.z.3 Notifications

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

### 5.3.x IpAddr <<dataType>>

#### 5.3.x.1 Definition

This <<dataType>> represents the IP address that can be expressed using IPv4 address or IPv6 address or the IPv6 address prefix. This <<dataType>> shall include one of the aforementioned IP address expressions.

#### 5.3.x.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | S | isReadable | isWritable | isInvariant | isNotifyable |
| ipv4Addr | O | T | T | F | T |
| ipv6Addr | O | T | T | F | T |
| ipv6Prefix | O | T | T | F | T |

#### 5.3.x.3 Notifications

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

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| **4th Modified Section** |

### 5.4 Attribute definitions

### 5.4.1 Attribute properties

The following table defines the attributes that are present in several Information Object Classes (IOCs) of the present document.

| Attribute Name | Documentation and Allowed Values | Properties |
| --- | --- | --- |
| aMFIdentifier | The AMFI is constructed from an AMF Region ID, an AMF Set ID and an AMF Pointer. The AMF Region ID identifies the region, the AMF Set ID uniquely identifies the AMF Set within the AMF Region, and the AMF Pointer uniquely identifies the AMF within the AMF Set. (Ref. 3GPP TS 23.003 [13]) | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| aMFSetId | It represents the AMF Set ID, which is uniquely identifies the AMF Set within the AMF Region.allowedValues: defined in subclause 2.10.1 of 3GPP TS 23.003 [13]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| aMFSetMemberList | It is the list of DNs of AMFFunction instances of the AMFSet. allowedValues: N/A | type: DNmultiplicity: \*isOrdered: N/AisUnique: TruedefaultValue: NoneisNullable: False |
| aMFRegionId | It represents the AMF Region ID, which identifies the region.allowedValues: defined in subclause 2.10.1 of 3GPP TS 23.003 [13]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| gUAMIdList | List of supported Globally Unique AMF Ids (GUAMIs). | type: GUAMInfomultiplicity: 1.. \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| backupInfoAmfFailure | List of GUAMIs for which the AMF acts as a backup for AMF failure. | type: GUAMInfomultiplicity: 1.. \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| backupInfoAmfRemoval | List of GUAMIs for which the AMF acts as a backup for planned AMF removal. | type: GUAMInfomultiplicity: 1.. \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| localAddress  | This parameter specifies the localAddress including IP address and VLAN ID used for initialization of the underlying transport.First string is IP address, IP address can be an IPv4 address (See RFC 791 [37]) or an IPv6 address (See RFC 2373 [38]).Second string is VLAN Id (See IEEE 802.1Q [39]). | type: Stringmultiplicity: 2isOrdered: TrueisUnique: N/AdefaultValue: NoneisNullable: False |
| remoteAddress | Remote address including IP address used for initialization of the underlying transport.IP address can be an IPv4 address (See RFC 791 [37]) or an IPv6 address (See RFC 2373 [38]). | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| nfProfileList | It is a set of NFProfile(s) to be registered in the NRF instance. NFProfile is defined in 3GPP TS 29.510 [23]. | type: <<dataType>>multiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| cNSIIdList | It is a set of NSI ID. NSI ID is an identifier for identifying the Core Network part of a Network Slice instance when multiple Network Slice instances of the same Network Slice are deployed, and there is a need to differentiate between them in the 5GC. See NSI ID definition in clause 3.1 of TS 23.501 [2] and subclause 6.1.6.2.7 of 3GPP TS 29.531 [24].  | type: Stringmultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| sNSSAIList | See subclause 4.4.1. |  |
| pLMNInfoList | It defines the PLMN(s) of a Network Function.  | type: PLMNInfomultiplicity: 1.. \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| sBIFQDN | It is used to indicate the FQDN of the registered NF instance in service-based interface, for example, NF instance FQDN structure is:nftype<nfnum>.slicetype<sliceid>.mnc<MNC>.mcc<MCC>.3gppnetwork.org | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| interPlmnFQDN | If the NF needs to be discoverable by other NFs in a different PLMN, then an FQDN that is used for inter-PLMN routing as specified in 3GPP TS 23.003 [13] shall be registered with the NRF. | type: Stringmultiplicity: 0..1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| sBIServiceList | It is used to indicate the all supported NF services registered on service-based interface. | type: Stringmultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| nRTACList | It is the list of Tracking Area Codes (either legacy TAC or extended TAC). 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 |
| taiList | The list of TAIs.  | type: TAImultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| taiRangeList | The range of TAIs. | type: TAIRangemultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| sNssaiSmfInfoList | List of parameters supported by the SMF per S-NSSAI | type: SnssaiSmfInfoItemmultiplicity: 0..1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| dnnSmfInfoList | List of parameters supported by the SMF per DNN | type: DnnSmfInfoItemmultiplicity: 1..NisOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| dnn | String representing a Data Network as defined in clause 9A of 3GPP TS 23.003 [13]; it shall contain either a DNN Network Identifier, or a full DNN with both the Network Identifier and Operator Identifier, as specified in 3GPP TS 23.003 [13] clause 9.1.1 and 9.1.2. It shall be coded as string in which the labels are separated by dots (e.g. "Label1.Label2.Label3"). Whether the dnn data type contains just the DNN Network Identifier, or the Network Identifier plus the Operator Identifier, shall be documented in each API where this data type is used. | type: stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| dnaiList | List of Data network access identifiers supported by the EASDF for this DNN. The absence of this attribute indicates that the EASDF can be selected for this DNN for any DNAI. | type: dnaimultiplicity: 1..NisOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| dnai | DNAI (Data network access identifier), see clause 5.6.7 of 3GPP TS 23.501 [2]. | type: stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| pgwFqdn | The FQDN of the PGW if the SMF is a combined SMF/PGW-C. | type: stringmultiplicity: 0..1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| pgwIpAddrList | The PGW IP addresses of the combined SMF/PGW-C.It allows the NF Service consumer to find the target combined SMF/PGW-C by PGW IP Address, e.g., when only PGW IP Address is available. | type: IpAddrmultiplicity: 0..1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| vsmfSupportInd | Used by an SMF to explicitly indicate the support of V-SMF capability and its preference to be selected as V-SMF.When present it indicate whether the V-SMF capability is supported by the SMF:- true: V-SMF capability supported by the SMF- false: V-SMF capability not supported by the SMF.When absence the V-SMF capability support of the SMF is not specified. | type: booleanmultiplicity: 0..1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| pgwFqdnList | When present, this attribute provides additional FQDNs to the FQDN indicated in the pgwFqdn attribute. The pgwFqdnList attribute may be present if the pgwFqdn attribute is present. | type: stringmultiplicity: 0..NisOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| nRTACRangeList | The range of TACs. | type: nrTACRangemultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| nRTACstart | First value identifying the start of a TAC range, to be used when the range of TAC's can be represented as a hexadecimal range (e.g., TAC ranges). 3-octet string identifying a tracking area code, each character in the string shall take a value of "0" to "9" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the TAC shall appear first in the string, and the character representing the 4 least significant bit of the TAC shall appear last in the string.Pattern: "^([A-Fa-f0-9]{4}|[A-Fa-f0-9]{6})$" | type: Stringmultiplicity: 0..1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| nRTACend | Last value identifying the end of a TAC range, to be used when the range of TAC's can be represented as a hexadecimal range (e.g. TAC ranges). 3-octet string identifying a tracking area code, each character in the string shall take a value of "0" to "9" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the TAC shall appear first in the string, and the character representing the 4 least significant bit of the TAC shall appear last in the string.Pattern: "^([A-Fa-f0-9]{4}|[A-Fa-f0-9]{6})$" | type: Stringmultiplicity: 0..1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| nRTACpattern | Pattern (regular expression according to the ECMA-262 dialect [x0]) representing the set of TAC's belonging to this range. A TAC value is considered part of the range if and only if the TAC string fully matches the regular expression. | type: Stringmultiplicity: 0..1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| supportedBMOList | It is used to indicate the list of supported BMOs (Bridge Managed Objects) required for integration with TSN system. | type: Stringmultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| managedNFProfile | This parameter defines profile for managed NF (See TS 23.501 [2]). allowedValues: N/A | type: ManagedNFProfilemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| nfInstanceID | This parameter defines unique identity of the NF Instance. The format of the NF Instance ID shall be a Universally Unique Identifier (UUID) version 4, as described in IETF RFC 4122 [44]allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| nfType | This parameter defines type of Network FunctionallowedValues: See TS 23.501[2] for NF types | type: ENUMmultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| heartBeatTimer | Time between two consecutive heart-beat messages from an NF Instance to the NRF defined in seconds.  | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: 0isNullable: False |
| fqdn | This parameter defines FQDN of the Network Function (See TS 23.003 [13])allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| ipAddress | This parameter defines IP Address of the Network Function. It can be IPv4 address (See RFC 791 [37]) or IPv6 address (See RFC 2373 [38]).allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| authzInfo | This parameter defines NF Specific Service authorization information. It shall include the NF type (s) and NF realms/origins allowed to consume NF Service(s) of NF Service Producer (See TS 23.501[2]). allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: True |
| allowedPLMNs | PLMNs allowed to access the NF instance.If not provided, any PLMN is allowed to access the NF. | type: PLMNIdmultiplicity: 1..\*isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: True |
| allowedSNPNs  | SNPNs allowed to access the NF instance.The absence of this attribute in the NF profile indicates that no SNPN, other than the SNPN(s) registered in the snpnList attribute of the NF Profile, is allowed to access the service instance. | type: SNPNInfomultiplicity: 1..\*isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: True |
| mCC | This is the Mobile Country Code (MCC) of the PLMN identifier. See TS 23.003 [3] subclause 2.2 and 12.1.allowedValues: a bounded string of 3 characters representing 3 digits. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| mNC | This is the Mobile Network Code (MNC) of the PLMN identifier. See TS 23.003 [3] subclause 2.2 and 12.1.allowedValues: A bounded string of 2 or 3 characters representing 2 or 3 digits. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| nId | Network Identity; Shall be present if PlmnIdNid identifies an SNPN (see clauses 5.30.2.3, 5.30.2.9, 6.3.4, and 6.3.8 in 3GPP TS 23.501 [2]).  | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| allowedNfTypes | Type of the NFs allowed to access the NF instance.If not provided, any NF type is allowed to access the NF.allowedValues: See TS 23.501[2] for NF types | type: ENUMmultiplicity: 1..\*isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: True |
| allowedNfDomains | Pattern (regular expression according to the ECMA-262 dialect [72]) representing the NF domain names within the PLMN of the NRF allowed to access the NF instance.If not provided, any NF domain is allowed to access the NF. | type: Stringmultiplicity: 1..\*isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: True |
| allowedNSSAIs | S-NSSAI of the allowed slices to access the NF instance.If not provided, any slice is allowed to access the NF. | type: S-NSSAImultiplicity: 1..\*isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: True |
| locality | The parameter defines information about the location of the NF instance (e.g. geographic location, data center) defined by operator (See TS 29.510[23]).allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: True |
| capacity | This parameter defines static capacity information in the range of 0-65535, expressed as a weight relative to other NF instances of the same type; if capacity is also present in the nfServiceList parameters, those will have precedence over this value (See TS 29.510[23])allowedValues: 0-65535 | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| recoveryTime | Timestamp when the NF was (re)started. The NRF shall notify NFs subscribed to receiving notifications of changes of the NF profile, if the NF recoveryTime is changed. | type: DateTimemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: True |
| nfServicePersistence | This parameter indicates whether the different service instances of a same NF Service in the NF instance, supporting a same API version, are capable to persist their resource state in shared storage and therefore these resources are available after a new NF service instance supporting the same API version is selected by a NF Service Consumer (see TS 29.510 [23]). | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: True  |
| nfSetIdList | A NF Set Identifier is a globally unique identifier of a set of equivalent and interchangeable CP NFs from a given network that provide distribution, redundancy and scalability (see clause 5.21.3 of 3GPP TS 23.501 [2]).An NF Set Identifier shall be constructed from the MCC, MNC, NID (for SNPN), NF type and a Set ID. A NF Set Identifier shall be formatted as the following string:set<Set ID>.<nftype>set.5gc.mnc<MNC>.mcc<MCC> for a NF Set in a PLMN, orset<Set ID>.<nftype>set.5gc.nid<NID>.mnc<MNC>.mcc<MCC> for a NF Set in a SNPN.At most one NF Set ID shall be indicated per PLMN-ID or SNPN of the NF. | type: Stringmultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| nfProfileChangesSupportInd | This parameter indicates if the NF Service Consumer supports or does not support receiving NF Profile Changes. It may be present in the NFRegister or NFUpdate (NF Profile Complete Replacement) request and shall be absent in the response (see Annex B 3GPP TS 29.510 [23]).  | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: True |
| defaultNotificationSubscriptions | Notification endpoints for different notification types.This attribute may contain multiple default subscriptions for a same notification type; in that case, those default subscriptions are used as alternative notification endpoints. | type: DefaultNotificationSubscriptionmultiplicity: 1..\*isOrdered: N/AisUnique: TruedefaultValue: NoneallowedValues: N/AisNullable: False |
| notificationType | This parameter indicates the types of notifications used in Default Notification URIs in the NF Profile of an NF Instance.allowedValues: "N1\_MESSAGES", "N2\_INFORMATION", "LOCATION\_NOTIFICATION",”DATA\_REMOVAL\_NOTIFICATION”,"DATA\_CHANGE\_NOTIFICATION","LOCATION\_UPDATE\_NOTIFICATION","NSSAA\_REAUTH\_NOTIFICATION","NSSAA\_REVOC\_NOTIFICATION" | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| callbackURI | This attribute contains a default notification endpoint to be used by a NF Service Producer towards an NF Service Consumer that has not registered explicitly a callback URI in the NF Service Producer (e.g. as a result of an implicit subscription). | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| n1MessageClass | This attribute (if it is present) identifies that class of N1 messages shall be notified as per TS 29.518 [80].  | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: True |
| n2InformationClass | This attribute (if it is present) identifies that class of N2 messages shall be notified as per TS 29.518 [80].  | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: True |
| versions | This attribute identifies the API versions (e.g. "v1") supported for the default notification type.  | type: Stringmultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| binding | This attribute shall contain the value of the Binding Indication for the default subscription notification (i.e. the value part of "3gpp-Sbi-Binding" header), as specified in clause 6.12.4 of 3GPP TS 29.500 [76].  | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| servingScope | This parameter indicates the served geographical areas of a NF instance. | type: Stringmultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| nfSetRecoveryTimeList | This parameter contains the recovery time of NF Set(s) indicated by the NfSetId, where the NF instance belongs. | type: DateTimemultiplicity: 1.. \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| serviceSetRecoveryTimeList | This parameter contains the recovery time of NF Service Set(s) configured in the NF instance, which are indicated by the NfServiceSetId. | type: DateTimemultiplicity: 1.. \*isOrdered: N/AisUnique: TruedefaultValue: NoneallowedValues: N/AisNullable: False |
| scpDomains | This parameter shall carry the list of SCP domains the SCP belongs to, or the SCP domain the NF (other than SCP) or the SEPP belongs to.  | type: Stringmultiplicity: 1.. \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| vendorId | Vendor ID of the NF instance, according to the IANA-assigned "SMI Network Management Private Enterprise Codes" [77].allowedValues: 6 decimal digits; if the SMI code has less than 6 digits, it shall be padded with leading digits "0" to complete a 6-digit string value. | type: Stringmultiplicity: 0..1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| nFInfo | This parameter includes NF specific data in Managed NF profileallowedValues: N/A | type: NFInfomultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| hostAddr | This parameter defines host address of a NFallowedValues: N/A | type: HostAddrmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| priority | This parameter defines Priority (relative to other NFs of the same type) in the range of 0-65535, to be used for NF selection; lower values indicate a higher priority. If priority is also present in the nfServiceList parameters, those will have precedence over this value (See TS 29.510[23]).allowedValues: 0-65535 | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| supportedDataSetIds | This parameter defines list of supported data sets in the UDR instance (See TS 29.510[23]).allowedValues: "SUBSCRIPTION", "POLICY", EXPOSURE", "APPLICATION" | type: ENUMmultiplicity: 1..\*isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| nFSrvGroupId | This parameter defines identity of the group that is served by the NF instance (See TS 29.510[23]).allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| smfServingAreas | This parameter defines the SMF service area(s) the UPF can serve (See TS 29.510[23]).allowedValues: N/A | type: Stringmultiplicity: 1..\*isOrdered: FisUnique: TruedefaultValue: NoneisNullable: False |
| isESCoveredBy | This indicates whether the adjacentCell provides no, partial or full coverage for the cell which name-contains the NRCellRelation instance. Adjacent cells with this attribute equal to "FULL" are recommended to be considered as candidate cells to take over the coverage when the original cell state is about to be changed to energySaving.All adjacent cells with this attribute value equal to "PARTIAL" are recommended to be considered as entirety of candidate cells to take over the coverage when the original cell state is about to be changed to energySaving.allowedValues: NO, PARTIAL, FULL | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| commModelList | The attribute specifies a list of commModel which is defined as a datatype (see clause 5.3.69). It can be used by NF and NF services to interact with each other in 5G Core network (see TS 23.501 [2]).allowedValues: Not applicable | type: commModelmultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| groupId | This parameter identiies a list of target NF services on which the same communication model is applied to. allowedValues: N/A | type: Integermultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| commModelType | This parameter defines communication model used by a NF to interact with NF service(s) (See TS 23.501 [2]). allowedValues:”DIRECT\_COMMUNICATION\_WO\_NRF”, “DIRECT\_COMMUNICATION\_WITH\_NRF”, “INDIRECT\_COMMUNICATION\_WO\_DEDICATED\_DISCOVERY”, “INDIRECT\_COMMUNICATION\_WITH\_DEDICATED\_DISCOVERY” | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| targetNFServiceList | This parameter lists target NF services sharing same communication model and configuration.allowedValues: N/A | type: DNmultiplicity: 1..\*isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| commModelConfiguration | This parameter defines configuration parameters for specific communication model for a group of NF Services.allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| supportedFuncList | This parameter lists functionalities supported by a SCP. Refer to TS 23.501 [2]. | type: SupportedFunctionmultiplicity: 1..\*isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| address | This parameter defines address of a SCP instance, it can be IP address (either IPv4 address (See RFC 791 [37]) or IPv6 address (See RFC 2373 [38])) or FQDN (See TS 23.003 [13]).  | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| function | This parameter defines name of a functionality supported by a SCP. | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| policy | This parameter defines configuration policies of a functionality supported by a SCP. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| capabilityList | This parameter lists capabilities supported by a NEF. Refer to TS 23.501 [2].allowedValues: N/A | type: Stringmultiplicity: 1..\*isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| isCAPIFSup | This parameter defines if the NEF support Common API Framework.allowedValues: TRUE, FALSE | type: Booleanmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| sEPPType | This parameter defines the type of a SEPP entity. Refer to TS 33.501 [52].allowedValues: “CSEPP”, “PSEPP” | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| sEPPId | This parameter is identifier of a SEPP, it is unique inside a PLMN. allowedValues: N/A | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| remotePlmnId | This parameter defines PLMNId of the remote SEPP.allowedValues: N/A | Type: PLMNId multiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| remoteSeppAddress | This parameter defines address of the remote SEPP. It can be IP address (either IPv4 address (See RFC 791 [37]) or IPv6 address (See RFC 2373 [38])) or FQDN(See TS 23.003 [13]).allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| remoteSeppId | This parameter defines identifier of the remote SEPP. it is unique inside a PLMN.allowedValues: N/A | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| n32cParas | This attribute is used to configure parameters to establish security link between two SEPPs. allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| n32fPolicy | This attribute is used to configure policies to protect the messages exchanged between SEPPs.allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: FisUnique: N/AdefaultValue: NoneisNullable: False |
| withIPX | This attribute defines if there’s an IPX interconnected between two SEPPs.allowedValues: TRUE, FALSE | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| FiveQiDscpMappingList | It provides the list of mapping between 5QIs and DSCP.allowedValues: N/A | type: FiveQiDscpMappingmultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| fiveQIValues | It indicates a list of 5QI value.allowedValues: 0 - 255 | type: Integermultiplicity: \*isOrdered: N/AisUnique: YesdefaultValue: NoneisNullable: False |
| dscp | It indicates a DSCP.allowedValues: 0 – 255 | type: Integermultiplicity: 1isOrdered: N/AisUnique: YesdefaultValue: NoneisNullable: False |
| configurable5QISetRef | This is the DN of Configurable5QISet. allowedValues: DN of the Configurable5QISet MOI. | type: Stringmultiplicity: 0..1isOrdered: FalseisUnique: TruedefaultValue: NoneisNullable: True |
| dynamic5QISetRef | This is the DN of Dynamic5QISet MOI. allowedValues: DN of the Dynamic5QISet MOI. | type: Stringmultiplicity: 0..1isOrdered: FalseisUnique: TruedefaultValue: NoneisNullable: True |
| fiveQIValue | It identifies the 5QI value.allowedValues: 0 – 255 | type: Integermultiplicity: 1isOrdered: N/AisUnique: YesdefaultValue: NoneisNullable: False |
| resourceType | It indicates the Resource Type of a 5QI, as specified in TS 23.501 [2].allowedValues: "GBR", Non-GBR" | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| priorityLevel | It indicates the Priority Level of a 5QI, as specified in TS 23.501 [2].allowedValues: 0 - 127 | type: Integermultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| packetDelayBudget | It indicates the Packet Delay Budget (in unit of 0.5ms) of a 5QI, as specified in TS 23.501 [2].allowedValues: 0 - 1023 | type: Integermultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| packetErrorRate | It indicates the Packet Error Rate of a 5QI, as specified in TS 23.501 [2].allowedValues: N/A | type: PacketErrorRatemultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| averagingWindow | It indicates the Averaging Window (in unit of ms) of a 5QI, as specified in TS 23.501 [2].allowedValues: 0 - 4095 | type: Integermultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| maximumDataBurstVolume | It indicates the Maximum Data Burst Volume (in unit of Byte) of a 5QI, as specified in TS 23.501 [2].allowedValues: 0 - 4095 | type: Integermultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| scalar | The Packet Error Rate of a 5QI expressed as *Scalar* x 10-k where k is the *Exponent*.This attriutes indicates the *Scalar* of this expression.allowedValues: 0 - 9 | type: Integermultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| exponent | The Packet Error Rate of a 5QI expressed as *Scalar* x 10-k where k is the *Exponent*.This attriutes indicates the *Exponent* of this expression.allowedValues: 0 - 9 | type: Integermultiplicity: 1isOrdered: N/AisUnique: FalsedefaultValue: NoneisNullable: False |
| gtpUPathQoSMonitoringState | It indicates the state of GTP-U path QoS monitoring for URLLC service.allowedValues: "Enabled", "Disabled". | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: EnabledisNullable: False |
| gtpUPathMonitoredSNSSAIs | It specifies the S-NSSAIs for which the GTP-U path QoS monitoring is to be performed. allowedValues: See 3GPP TS 23.003 [13] | type: S-NSSAImultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| monitoredDSCPs | It specifies the DSCPs for which the GTP-U path QoS monitoring is to be performed. allowedValues: See 3GPP TS 29.244 [56] | type: Integermultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| isEventTriggeredGtpUPathMonitoringSupported | It indicates whether the event triggered GTP-U path QoS monitoring reporting based on thresholds is supported, see 3GPP TS 29.244 [56].allowedValues: “Yes”, “No”. | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: YesisNullable: False |
| isPeriodicGtpUMonitoringSupported | It indicates whether the periodic GTP-U path QoS monitoring reporting is supported, see 3GPP TS 29.244 [56].allowedValues: “Yes”, “No”. | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: YesisNullable: False |
| isImmediateGtpUMonitoringSupported | It indicates whether the immediate GTP-U path QoS monitoring reporting is supported, see 3GPP TS 29.244 [56].allowedValues: “Yes”, “No”. | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: YesisNullable: False |
| gtpUPathDelayThresholds | It specifies the thresholds for reporting the packet delay for the GTO-U path QoS monitoring, if the isEventTriggeredGtpUPathMonitoringSupported attribute of the same MOI is set to “yes”.The packet delay will be reported to SMF when it exceeds the threshold (in milliseconds).allowedValues: N/A. | type: GtpUPathDelayThresholdsTypemultiplicity: 1isOrdered: YisUnique: N/AdefaultValue: NoneisNullable: False |
| gtpUPathMinimumWaitTime | It specifies the minimum waiting time (in seconds) between two consecutive reports for event triggered GTP-U path QoS monitoring reporting, if the isEventTriggeredGtpUPathMonitoringSupported attribute of the same MOI is set to “yes”.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| gtpUPathMeasurementPeriod | It specifies the period (in seconds) for reporting the packet delay for GTP-U path QoS monitoring, if the isPeriodicGtpUMonitoringSupported attribute of the same MOI is set to “yes”.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| n3AveragePacketDelayThreshold | It specifies the threshold for reporting the average packet delay of a GTP-U path on N3 interface.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| n3MinPacketDelayThreshold | It specifies the threshold for reporting the minimum packet delay of a GTP-U path on N3 interface.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| n3MaxPacketDelayThreshold | It specifies the threshold for reporting the maxinum packet delay of a GTP-U path on N3 interface.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| n9AveragePacketDelayThreshold | It specifies the threshold for reporting the average packet delay of a GTP-U path on N9 interface.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| n9MinPacketDelayThreshold | It specifies the threshold for reporting the minimum packet delay of a GTP-U path on N9 interface.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| n9MaxPacketDelayThreshold | It specifies the threshold for reporting the maxinum packet delay of a GTP-U path on N9 interface.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| qFQoSMonitoringState | It indicates the state of QoS monitoring per QoS flow per UE for URLLC service.allowedValues: "Enabled", "Disabled". | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: EnabledisNullable: False |
| qFMonitoredSNSSAIs | It specifies the S-NSSAIs for which the QoS monitoring per QoS flow per UE is to be performed. allowedValues: See 3GPP TS 23.003 [13] | type: S-NSSAImultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| qFMonitored5QIs | It specifies the 5QIs for which the QoS monitoring per QoS flow per UE is to be performed. allowedValues: See 3GPP TS 23.501[2] | type: Integermultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| isEventTriggeredQFMonitoringSupported | It indicates whether the event based QoS monitoring reporting per QoS flow per UE is supported, see 3GPP TS 29.244 [56].allowedValues: “Yes”, “No”. | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: YesisNullable: False |
| isPeriodicQFMonitoringSupported | It indicates whether the periodic QoS monitoring reporting per QoS flow per UE is supported, see 3GPP TS 29.244 [56].allowedValues: “Yes”, “No”. | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: YesisNullable: False |
| isSessionReleasedQFMonitoringSupported | It indicates whether the session release based QoS monitoring reporting per QoS flow per UE is supported, see 3GPP TS 29.244 [56].allowedValues: “Yes”, “No”. | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: YesisNullable: False |
| qFPacketDelayThresholds | It specifies the thresholds for reporting the packet delay between PSA and UE for QoS monitoring per QoS flow per UE, if the isEventTriggeredQFMonitoringSupported attribute of the same MOI is set to “yes”.”.The packet delay will be reported by PSA UPF to SMF when it exceeds the threshold (in milliseconds).allowedValues: see 3GPP TS 29.244 [56]. | type: QFPacketDelayThresholdsTypemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| qFMinimumWaitTime | It specifies the minimum waiting time (in seconds) between two consecutive reports for event triggered QoS monitoring reporting per QoS flow per UE, if the isEventTriggeredQFMonitoringSupported attribute of the same MOI is set to “yes”.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| qFMeasurementPeriod | It specifies the period (in seconds) for reporting the packet delay for QoS monitoring per QoS flow per UE, if the isPeriodicQFMonitoringSupported attribute of the same MOI is set to “yes”.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| thresholdDl | It specifies the threshold for reporting the DL packet delay between PSA UPF and UE.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| thresholdUl | It specifies the threshold for reporting the UL packet delay between PSA UPF and UE.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| thresholdRtt | It specifies the threshold for reporting the round-trip packet delay between PSA UPF and UE.allowedValues: see 3GPP TS 29.244 [56]. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| predefinedPccRules | It specifies the predefined PCC Rules, see TS 25.503 [59].allowedValues: N/A | type: PccRulemultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False  |
| pccRuleId | It identifies the PCC rule.allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| flowInfoList | It is a list of IP flow packet filter information.allowedValues: N/A | type: FlowInformationmultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| applicationId | A reference to the application detection filter configured at the UPF.allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| appDescriptor | It is the ATSSS rule application descriptor.allowedValues: see TS 29.571 [61]. | type: BitStringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| contentVersion | Indicates the content version of the PCC rule.allowedValues: N/A | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| precedence | It indicates the order in which this PCC rule is applied relative to other PCC rules within the same PDU session.allowedValues: 0..255. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| afSigProtocol | Indicates the protocol used for signalling between the UE and the AF. The default value is "NO\_INFORMATION".allowedValues: “NO\_INFORMATION”, “SIP”. | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “NO\_INFORMATION”isNullable: False |
| isAppRelocatable | It indicates the application relocation possibility. The default value is "FALSE.allowedValues: “TRUE”, “FALSE”.  | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| isUeAddrPreserved | It Indicates whether UE IP address should be preserved.The default value is "FALSE".allowedValues: “TRUE”, “FALSE”. | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “FALSE”isNullable: False |
| qosData | It contains the QoS control policy data for a PCC rule.allowedValues: N/A | type: QoSDatamultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| altQosParams | It contains the QoS control policy data for the Alternative QoS parameter sets of the service data flow. Only the "qosId" attribute, "5qi" attribute, "maxbrUl" attribute, "maxbrDl" attribute, "gbrUl" attribute and "gbrDl" attribute are applicable within the QosData data type. This data type represents an ordered list, where the lower the index of the array for a given entry, the higher the priority.allowedValues: N/A | type: QoSDatamultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| trafficControlData | It contains the traffic control policy data for a PCC rule.allowedValues: N/A | type: TrafficControlDatamultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| conditionData | It contains the condition data for a PCC rule.allowedValues: N/A | type: ConditionDatamultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| tscaiInputUl | It contains transports TSCAI input parameters for TSC traffic at the ingress interface of the DS-TT/UE (uplink flow direction).allowedValues: N/A | type: TscaiInputContainer multiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| tscaiInputDl | It contains transports TSCAI input parameters for TSC traffic at the ingress of the NW-TT (downlink flow direction).allowedValues: N/A | type: TscaiInputContainer multiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| flowDescription | It defines a packet filter for an IP flow.allowedValues: see TS 29.214 [62]. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| ethFlowDescription | It defines a packet filter for an Ethernet flow.allowedValues: see TS 29.514 [62]. | type: EthFlowDescriptionmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| destMacAddr | It specifies the destination MAC address formatted in the hexadecimal notation according to clause 1.1 and clause 2.1 of IETF RFC 7042 [63].Pattern: '^([0-9a-fA-F]{2})((-[0-9a-fA-F]{2}){5})$'.allowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| ethType | A two-octet string that represents the Ethertype, as described in IEEE 802.3 [64] and IETF RFC 7042 [63] in hexadecimal representation.Each character in the string shall take a value of "0" to "9" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the ethType shall appear first in the string, and the character representing the 4 least significant bits of the ethType shall appear last in the string.allowedValues: see IEEE 802.3 [64] and IETF RFC 7042 [63]. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| fDesc | It contains the flow description for the Uplink or Downlink IP flow. It shall be present when the ethtype is IP.allowedValues: see flowDescription in TS 29.214 [62]. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| fDir | It indicates the packet filter direction. allowedValues: "DOWNLINK", "UPLINK".  | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| sourceMacAddr | It specifies the source MAC address formatted in the hexadecimal notation according to clause 1.1 and clause 2.1 of IETF RFC 7042 [63].Pattern: '^([0-9a-fA-F]{2})((-[0-9a-fA-F]{2}){5})$'.allowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| vlanTags | It specifies the Customer-VLAN and/or Service-VLAN tags containing the VID, PCP/DEI fields as defined in IEEE 802.1Q [65] and IETF RFC 7042 [63]. The first/lower instance in the array stands for the Customer-VLAN tag and the second/higher instance in the array stands for the Service-VLAN tag.Each field is encoded as a two-octet string in hexadecimal representation. Each character in the string shall take a value of "0" to "9" or "A" to "F" and shall represent 4 bits. The most significant character representing the PCP/DEI field shall appear first in the string, followed by character representing the 4 most significant bits of the VID field, and the character representing the 4 least significant bits of the VID field shall appear last in the string.If only Service-VLAN tag is provided, empty string for Customer-VLAN tag shall be provided.allowedValues: see IEEE 802.1Q [65] and IETF RFC 7042 [63]. | type: Stringmultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| srcMacAddrEnd | It specifies the source MAC address end. If this attribute is present, the sourceMacAddr attribute specifies the source MAC address start. E.g. srcMacAddrEnd with value 00-10-A4-23-3E-FE and sourceMacAddr with value 00-10-A4-23-3E-02 means all MAC addresses from 00-10-A4-23-3E-02 up to and including 00-10-A4-23-3E-FE.allowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| destMacAddrEnd | It specifies the destination MAC address end. If this attribute is present, the destMacAddr attribute specifies the destination MAC address start.allowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| packFiltId | It is the identifier of the packet filter.allowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| packetFilterUsage | It indicates if the packet shall be sent to the UE. The default value is "FALSE".allowedValues: TRUE, FALSE | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “FALSE”isNullable: False |
| tosTrafficClass | It contains the Ipv4 Type-of-Service and mask field or the Ipv6 Traffic-Class field and mask field.allowedValues: N/A | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| spi | It is the security parameter index of the IPSec packet, see IETF RFC 4301 [66].allowedValues: see IETF RFC 4301 [66]. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| flowLabel | It specifies the Ipv6 flow label header field.AllowedValues: N/A | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| flowDirection | It indicates the direction/directions that a filter is applicable.AllowedValues: “DOWNLINK”, “UPLINK”, “BIDIRECTIONAL”, “UNSPECIFIED”. | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| qosId | It identifies the QoS control policy data for a PCC rule.AllowedValues: N/A | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| maxbrUl | It represents the maximum uplink bandwidth formatted as follows:Pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$', see TS 29.512 [60].Examples:"125 Mbps", "0.125 Gbps", "125000 Kbps"AllowedValues: N/A | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| maxbrDl | It represents the maximum downlink bandwidth formatted as follows:Pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$', see TS 29.512 [60].Examples:"125 Mbps", "0.125 Gbps", "125000 Kbps".AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| gbrUl | It represents the guaranteed uplink bandwidth formatted as follows:Pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$', see TS 29.512 [60].Examples:"125 Mbps", "0.125 Gbps", "125000 Kbps".AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| gbrDl | It represents the guaranteed downlink bandwidth formatted as follows:Pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$', see TS 29.512 [60].Examples:"125 Mbps", "0.125 Gbps", "125000 Kbps".AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| extMaxDataBurstVol | It denotes the largest amount of data that is required to be transferred within a period of 5G-AN PDB, see TS 29.512 [60].AllowedValues: 4096..2000000. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| arp | It indicates the allocation and retention priority.AllowedValues: N/A. | type: ARPmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| ARP.priorityLevel | It defines the relative importance of a resource request. AllowedValues: 1..15. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| preemptCap | It defines whether a service data flow may get resources that were already assigned to another service data flow with a lower priority level. AllowedValues: "NOT\_PREEMPT", "MAY\_PREEMPT". | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| preemptVuln | It defines whether a service data flow may lose the resources assigned to it in order to admit a service data flow with higher priority level.AllowedValues: "NOT\_PREEMPTABLE", "PREEMPTABLE". | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| qosNotificationControl | It indicates whether notifications are requested from 3GPP NG-RAN when the GFBR can no longer (or again) be guaranteed for a QoS Flow during the lifetime of the QoS Flow. The default value is "FALSE".AllowedValues: "TRUE", "FALSE". | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “FALSE”isNullable: False |
| reflectiveQos | Indicates whether the QoS information is reflective for the corresponding non-GBR service data flow. The default value is "FALSE".AllowedValues: "TRUE", "FALSE". | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “FALSE”isNullable: False |
| sharingKeyDl | It indicates, by containing the same value, what PCC rules may share resource in downlink direction.AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| sharingKeyUl | It indicates, by containing the same value, what PCC rules may share resource in uplink direction.AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| maxPacketLossRateDl | It indicates the downlink maximum rate for lost packets that can be tolerated for the service data flow.AllowedValues: 0..1000. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| maxPacketLossRateUl | It indicates the uplink maximum rate for lost packets that can be tolerated for the service data flow.AllowedValues: 0..1000. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| tcId | It univocally identifies the traffic control policy data within a PDU session.AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| flowStatus | It represents whether the service data flow(s) are enabled or disabled. The default value is "ENABLED". See TS 29.514 [67].AllowedValues: “ENABLED-UPLINK”, “ENABLED-DOWNLINK”, “ENABLED”, “DISABLED”, “REMOVED”.  | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “ENABLED”isNullable: False |
| redirectInfo | It indicates whether the detected application traffic should be redirected to another controlled address.AllowedValues: N/A. | type: RedirectInformationmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “ENABLED”isNullable: False |
| addRedirectInfo | It contains the additional redirect information indicating whether the detected application traffic should be redirected to another controlled address.AllowedValues: N/A. | type: RedirectInformationmultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: “ENABLED”isNullable: False |
| redirectEnabled | It indicates whether the redirect instruction is enabled.AllowedValues: "TRUE", "FALSE". | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| redirectAddressType | It indicates the type of redirect address, see TS 29.512 [60].AllowedValues: " IPV4\_ADDR", "IPV6\_ADDR", “URL”, “SIP\_URI”. | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| redirectServerAddress | It indicates the address of the redirect server.AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| muteNotif | It indicates whether applicat'on's start or stop notification is to be muted. The default value is "FALSE".AllowedValues: "TRUE", "FALSE". | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “FALSE”isNullable: False |
| trafficSteeringPolIdDl | It references to a pre-configured traffic steering policy for downlink traffic at the SMF, see TS 29.512 [60].AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| trafficSteeringPolIdUl | It references to a pre-configured traffic steering policy for uplink traffic at the SMF, see TS 29.512 [60].AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| routeToLocs | It provides a list of location which the traffic shall be routed to for the AF request.AllowedValues: N/A. | type: RouteToLocationmultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| traffCorreInd | It indicates the traffic correlation.AllowedValues: "TRUE", "FALSE". | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “FALSE”isNullable: False |
| dnai | It represents the DNAI (Data network access identifier), see 3GPP TS 23.501 [2].AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| routeInfo | It provides the traffic routing information.AllowedValues: N/A. | type: RouteInformationmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| ipv4Addr | It defines the Ipv4 address of the tunnel end point in the data network, formatted in the "dotted decimal" notation.Pattern: '^(([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])\.){3}([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])$'.AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| ipv6Addr | It defines the Ipv6 address of the tunnel end point in the data network.Pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))$'andPattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))$'.AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| ipv6AddrPrefix | String identifying an IPv6 address prefix formatted according to clause 4 of IETF RFC 5952 [n]. IPv6Prefix data type may contain an individual /128 IPv6 address.Pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))(\/(([0-9])|([0-9]{2})|(1[0-1][0-9])|(12[0-8])))$'andPattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))(\/.+)$' | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| portNumber | It defines the UDP port number of the tunnel end point in the data network, see TS 29.571 [61].AllowedValues: N/A. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| routeProfId | It identifies the routing profile.AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| upPathChgEvent | It contains the information about the AF subscriptions of the UP path change.AllowedValues: N/A. | type: UpPathChgEventmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| notificationUri | It provides notification address (Uri) of AF receiving the event notification.AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| notifCorreId | It is used to set the value of Notification Correlation ID in the notification sent by the SMF, see TS 29.512 [60]. AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| dnaiChgType | It indicates the type of DNAI change, see TS 29.512 [60].AllowedValues: “EARLY”, “EARLY\_LATE”, “LATE”. | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| afAckInd | It identifies whether the AF acknowledgement of UP path event notification is expected.The default value is "FALSE".AllowedValues: “TRUE”, “FALSE”. | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: “FALSE”isNullable: False |
| steerFun | It indicates the applicable traffic steering functionality, see TS 29.512 [60].AllowedValues: “MPTCP”, “ATSSS\_LL”. | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| steerModeDl | It provides the traffic distribution rule across 3GPP and Non-3GPP accesses to apply for downlink traffic.AllowedValues: N/A. | type: SteeringModemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| steerModeUl | It provides the traffic distribution rule across 3GPP and Non-3GPP accesses to apply for uplink traffic.AllowedValues: N/A. | type: SteeringModemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| mulAccCtrl | It indicates whether the service data flow, corresponding to the service data flow template, is allowed or not allowed. The default value is "NOT\_ALLOWED".AllowedValues: "ALLOWED", "NOT\_ALLOWED". | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: "NOT\_ALLOWED"isNullable: False |
| steerModeValue | It indicates the value of the steering mode, see TS 29.512 [60].AllowedValues: “ACTIVE\_STANDBY”, “LOAD\_BALANCING”, “SMALLEST\_DELAY”, “PRIORITY\_BASED”. | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| active | It indicates the active access, see TS 29.571 [61].AllowedValues: "3GPP\_ACCESS", "NON\_3GPP\_ACCESS". | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| standby | It indicates the Standby access, see TS 29.571 [61].AllowedValues: "3GPP\_ACCESS", "NON\_3GPP\_ACCESS". | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| threeGLoad | It indicates the traffic load to steer to the 3GPP Access expressed in one percent. AllowedValues: 0..100. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| prioAcc | It indicates the high priority access, see TS 29.571 [61].AllowedValues: "3GPP\_ACCESS", "NON\_3GPP\_ACCESS". | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| condId | It uniquely identifies the condition data.AllowedValues: N/A. | type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| activationTime | It indicates the time (in date-time format) when the decision data shall be activated, see TS 29.512 [60] and TS 29.571 [61].AllowedValues: N/A. | type: DateTimemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| deactivationTime | It indicates the time (in date-time format) when the decision data shall be deactivated, see TS 29.512 [60] and TS 29.571 [61].AllowedValues: N/A. | type: DateTimemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| accessType | It provides the condition of access type of the UE when the session AMBR shall be enforced, see TS 29.512 [60].AllowedValues: "3GPP\_ACCESS", "NON\_3GPP\_ACCESS". | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| ratType | It provides the condition of RAT type of the UE when the session AMBR shall be enforced, see TS 29.512 [60] and TS 29.571 [61].AllowedValues: "NR", "EUTRA", “WLAN”, “VIRTUAL”, “NBIOT”, “WIRELINE”, “WIRELINE\_CABLE”, “WIRELINE\_BBF”, “LTE-M”, “NR\_U”, “EUTRA\_U”, “TRUSTED\_N3GA”, “TRUSTED\_WLAN”, “UTRA”, “GERA”. | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| periodicity | It identifies the time period between the start of two bursts in reference to the TSN GM.AllowedValues: see TS 29.571 [61]. | type: integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| burstArrivalTime | Indicates the arrival time (in date-time format) of the data burst in reference to the TSN GM. AllowedValues: see TS 29.571 [61]. | type: DateTimemultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| nsacfInfoSnssaiList | It represents a list of NSACF information per S-NSSAI.AllowedValues: N/A | type: NsacfInfoSnssaimultiplicity: \*isOrdered: N/AisUnique: YesdefaultValue: NoneisNullable: True |
| snssaiInfo | It defines generic information for a S-NSSAI. The information includes global unique identifier of a Network Slice (see [2] for definition of Network Slice) and adminstrativeState of the Network SliceAllowedValues: N/A. | type: SnssaiInfomultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| isSubjectToNsac | It defines if the Network Slice subjects to network slice admission control. The value is set to False if the maxNumberofUEs attribute in corresponding SliceProfile is absent.AllowedValues: True, False | type: Booleanmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: FalseisNullable: False |
| NsacfInfoSnssai.maxNumberofUEs | It defines the maximum number of UEs which are allowed to be served by the Network Slice that is subject to network slice admission control. This number could be derived from maxNumberofUEs defined in corresponding SliceProfile.AllowedValues: 0 - 65535 | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: 0isNullable: False |
| eACMode | It represents if early admission control (EAC) mode is activated.AllowedValues: Active, Inactive | type: ENUMmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: InactiveisNullable: False |
| activeEacThreshhold | It defines threshold in percentage value of the number of the UEs registered with the network slice to the maximum number of UEs allowed to register with the network slice. The eACMode is set to active when the number of the UEs registered with the network slice is above this threshold.AllowedValues: 0 - 100 | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: 0isNullable: False |
| deactiveEacThreshhold | It defines threshold in percentage value of the number of the UEs registered with the network slice to the maximum number of UEs allowed to register with the network slice. The eACMode is set to inactive when the number of the UEs registered with the network slice is below this threshold.AllowedValues: 0 - 100Note: If this attribute is absent, activeEacThreshhold is used to trigger deactivation of eACMode. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: 100isNullable: True |
| numberofUEs | It represents the number of the UEs registered with the network slice. This attribute is updated by NSACF.AllowedValues: 0 - 65535 | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| uEIdList | It represents the UEs registered with the network slice. This attribute is updated by NSACF.AllowedValues: N/A | type: Stringmultiplicity: \*isOrdered: N/AisUnique: YesdefaultValue: NoneisNullable: True |
| networkSliceInfoList | The attribute specifies a list of NetworkSliceInfo which is defined as a datatype (see clause 5.3.95). It can be used by the NWDAF to facilitate the data collection from OAM.allowedValues: N/A | type: NetworkSliceInfomultiplicity: 1..\*isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| networkSliceRef | This holds a DN of the NetworkSlice managed object relating to the NetworkSlice instance differentiated by sNSSAI and optional cNSIId. | type: DNmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| sNSSAI | It represents the S-NSSAI the NetworkSlice managed object is supporting. The S-NSSAI is defined in TS 23.003 [13].allowedValues: See TS 23.003 [13] | type: S-NSSAImultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| cNSIId | It represents NSI ID which is an identifier for identifying the Core Network part of a Network Slice instance when multiple Network Slice instances of the same Network Slice are deployed, and there is a need to differentiate between them in the 5GC. See NSI ID definition in clause 3.1 of TS 23.501 [2] and subclause 6.1.6.2.7 of TS 29.531 [24].  | type: Stringmultiplicity: \*isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| eCSAddrConfigInfo | It represents one or more FQDN(s) and/or IP address(es) of Edge Configuration Server(s), and of an ECS Provider ID. | type: Stringmultiplicity: 1..\*isOrdered: N/AisUnique: TrueN/AdefaultValue: NoneallowedValues: N/AisNullable: False |
| aMFSet.aMFRegionRef | This is the DN of AMFRegion instance of the AMFSet. This holds a DN of AMFRegion instance for which the AMFSet instance belongs to.allowedValues: N/A | type: DNmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| aMFSetRef | This is the DN of AMFSet. allowedValues: N/A | type: DNmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: True |
| aMFRegion.aMFSetListRef | This holds a list of DN of AMFSet instances in the same AMFRegion instance. allowedValues: N/A | type: DNmultiplicity: \*isOrdered: N/AisUnique: TruedefaultValue: NoneisNullable: True |
| ServerAddr | This attribute indicates the DNS server address for the PDU Session (see clause 6.2.2.2 in TS 23.548 [78])allowedValues: Not applicable. | Type: Stringmultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneisNullable: False |
| NsacfInfoSnssai.maxNumberofPDUSessions | It defines the maximum number of concurrent PDU sessions supported by the network slic. This number could be derived from maxNumberofPDUSessions defined in corresponding SliceProfile. | type: Integermultiplicity: 1isOrdered: N/AisUnique: N/AdefaultValue: NoneallowedValues:N/AisNullable: False |

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| **End of Modified Sections** |