**3GPP TSG-SA5 Meeting #162 *S5-253980***

**Stor-Göteborg, Sweden, 25th Aug 2025 - 29th Aug 2025**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **28.541** | **CR** | **1600** | **rev** |  | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** | Rel-19 CR TS 28.541 Add NRM enhancements to support management of Ambient IoT | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung R&D Institute UK | | | | | | | | | |
| ***Source to TSG:*** | SA5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | AdNRM\_Ph3 | | | | |  | ***Date:*** | | | 2025-08-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Clause 5.3.1 of TS 23.369 says –  *“The NEF determines AIOTF instances(s) by providing the NRF Target Area information and the NRF returning AIOTF instance(s) that match the Target Area information, or by using local configuration.*  *A service operation request received by the NEF from an AF may include External Target Area information and the NEF uses it to determine the Target Area information that is provided to the NRF, if used. The External Target Area information is a pre-configured External Area Identifier or geographic area (e.g., a civic address or shapes). The Target Area information is a list of AIoT Areas.”*  To enable AIoT services such as inventory service and command service, as defined in the 3GPP SA2 specification 23.369, it is required to correctly identify the appropriate AIOTF, NG-RAN nodes and readers to correctly trigger the AIoT service operations towards the AIoT Device(s). This requires an effective mapping between the expected external target area (provided by the Application Function) and the internal target areas served by the 5G Core (5GC) and RAN nodes. The lack of this dynamic mapping information poses a challenge to the proper functioning of AIoT services within the network if not provided properly by OAM confugurations. Hence all such configurations are critically needed to be provided by OAM. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add NRMs in 5GC for AIoT related areas mapping information for correct identification of AIOTF | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The proper management AIoT network and correct functioning of AIoT services within the network will not be achieved. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.3.10, 5.3.65, 5.3.a (new), 5.3.b (new), stage 3 in Forge. | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Forge MR link: <https://forge.3gpp.org/rep/sa5/MnS/-/merge_requests/1872>  <https://forge.3gpp.org/rep/sa5/MnS/-/tree/Rel_20_CR_TS_28_541_Add_NRM_enhancements_to_support_management_of_Ambient_IoT?ref_type=heads> | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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| **1st Change** |

### 5.3.10 NRFFunction

#### 5.3.10.1 Definition

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

#### 5.3.10.2 Attributes

The NRFFunction 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 |
| sBIFQDN | M | | T | T | F | T |
| nFProfileList | CM | | T | T | F | T |
| cNSIIdList | CO | | T | T | F | T |
| nrfInfo | O | | T | T | F | T |
| managedNFProfile | M | | T | T | F | T |
| aIoTNRFMapping | | M | T | F | T | F |

#### 5.3.10.3 Attribute constraints

|  |  |
| --- | --- |
| Name | Definition |
| nFProfileList | Condition: NF profile is registered and deregistered by management system. |
| cNSIIdList | Condition: Network slicing feature is supported and the NSI ID is configured 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. |

#### 5.3.10.4 Notifications

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

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| **Next Change** |

### 5.3.a AIoTNRFMapping <<dataType>>

#### 5.3.a.1 Definition

This <<dataType>> represents mapping information between (internal) target area which is provided by NEF and AIOTF DN.

#### 5.3.a.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | S | isReadable | isWritable | isInvariant | isNotifyable |
| aIOTFdN | M | T | T | F | T |
| internalTargetArea | M | T | T | F | T |

#### 5.3.a.3 Attribute constraints

None.

#### 5.3.a.4 Notifications

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

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| **Next Change** |

### 5.3.65 NEFFunction

#### 5.3.65.1 Definition

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

#### 5.3.65.2 Attributes

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | S | isReadable | isWritable | isInvariant | isNotifyable |
| sBIFQDN | M | T | T | F | T |
| sNSSAIList | CM | T | T | F | T |
| managedNFProfile | M | T | T | F | T |
| capabilityList | M | T | T | F | T |
| isCAPIFSup | M | T | F | T | F |
| nefInfo | O | T | T | F | T |
| AIoTNEFMapping | M | T | F | T | F |

#### 5.3.65.3 Attribute constraints

|  |  |
| --- | --- |
| Name | Definition |
| sNSSAIList | Condition: Network slicing feature is supported. |

#### 5.3.65.4 Notifications

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

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| **Next Change** |

### 5.3.b AIoTNEFMapping <<dataType>>

#### 5.3.b.1 Definition

This <<dataType>> represents mapping information between external target area (provided by AF) and internal target area that needs to be provided to NRF.

#### 5.3.b.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | S | isReadable | isWritable | isInvariant | isNotifyable |
| targetAreaAF | M | T | T | F | T |
| internalTargetArea | M | T | T | F | T |

#### 5.3.b.3 Attribute constraints

None.

#### 5.3.b.4 Notifications

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

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| **Next Change** |

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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 allowedValues** | **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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| aMFSetMemberList | It is the list of DNs of AMFFunction instances of the AMFSet.  allowedValues: N/A | type: DN  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| gUAMIdList | List of supported Globally Unique AMF Ids (GUAMIs). | type: GUAMInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| backupInfoAmfFailure | List of GUAMIs for which the AMF acts as a backup for AMF failure. | type: GUAMInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| backupInfoAmfRemoval | List of GUAMIs for which the AMF acts as a backup for planned AMF removal. | type: GUAMInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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 4291 [113]).  Second string is VLAN Id (See IEEE 802.1Q [39]). | type: String  multiplicity: 2  isOrdered: True  isUnique: True  defaultValue: None  isNullable: 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 4291 [113]). | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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].  allowedValues: N/A | type: ManagedNFProfile  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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 TS 29.531 [24]. | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| energySavingControl | This attribute allows management system to initiate energy saving activation or deactivation for the edge UPF.  allowedValues:  TO\_BE\_ENERGYSAVING, TO\_BE\_NOT\_ENERGYSAVING. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| energySavingState | This attribute specifies the status regarding the energy saving in the edge UPF.  If the value of energySavingControl is TO\_BE\_ENERGYSAVING, then it shall be tried to achieve the value IS\_ENERGYSAVING for the energySavingState.  If the value of energySavingControl is TO\_BE\_NOT\_ENERGYSAVING, then it shall be tried to achieve the value IS\_NOT\_ENERGYSAVING for the energySavingState.  allowedValues:  IS\_NOT\_ENERGYSAVING, IS\_ENERGYSAVING. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| sNSSAIList | See subclause 4.4.1. |  |
| pLMNInfoList | It defines the PLMN(s) of a Network Function. | type: PLMNInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| hniList | Identifications of Credentials Holder or Default Credentials Server. It is an array of FQDN. | type: String  multiplicity: 1\*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| sBIServiceList | It is used to indicate the all supported NF services registered on service-based interface. | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| taiList | The list of TAIs. | type: TAI  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| taiRangeList | The range of TAIs. | type: TAIRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| sNssaiSmfInfoList | List of parameters supported by the SMF per S-NSSAI | type: SnssaiSmfInfoItem  multiplicity: \*  isOrdered: False  isUnique: Ture  defaultValue: None  isNullable: False |
| dnnSmfInfoList | List of parameters supported by the SMF per DNN | type: DnnSmfInfoItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| dnaiList | List of Data network access identifiers supported for this DNN.  allowedValues:  DNAI (Data network access identifier), see clause 5.6.7 of 3GPP TS 23.501 [2]. | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| pgwFqdn | The FQDN of the PGW if the SMF is a combined SMF/PGW-C. | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: IpAddr  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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 absent the V-SMF capability support of the SMF is not specified. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| nRTACRangeList | The range of TACs. | type: NRTACRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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})$" | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nRTACend | Last value identifying the end of a TAC range, to be used when the range of TAC's can be represented as a hexadecimal range (e.g. TAC ranges). 3-octet string identifying a tracking area code, each character in the string shall take a value of "0" to "9" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the TAC shall appear first in the string, and the character representing the 4 least significant bit of the TAC shall appear last in the string.  Pattern: "^([A-Fa-f0-9]{4}|[A-Fa-f0-9]{6})$" | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nRTACpattern | Pattern (regular expression according to the ECMA-262 dialect [75]) 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: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| supportedBMOList | It is used to indicate the list of supported BMOs (Bridge Managed Objects) required for integration with TSN system. | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| managedNFProfile | This parameter defines profile for managed NF (See TS 23.501 [2]).  allowedValues: N/A | type: ManagedNFProfile  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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 9562 [114]  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nfType | This parameter defines type of Network Function  allowedValues: See TS 23.501 [2] for NF types | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| heartBeatTimer | Time between two consecutive heart-beat messages from an NF Instance to the NRF defined in seconds. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: 0  isNullable: False |
| fqdn | This parameter defines FQDN of the Network Function (See TS 23.003 [13])  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| allowedPLMNs | PLMNs allowed to access the NF instance.  If not provided, any PLMN is allowed to access the NF. | type: PLMNId  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| sNPNList | SNPN(s) of the Network Function.  This attributeIE shall be present if the NF pertains to one or more SNPNs. (see clauses 6.1.6 in 3GPP TS 29.510 [23]). | type: SNPNInfoID  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| 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: SNPNId  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mCC | This is the Mobile Country Code (MCC) of the PLMN identifier. See TS 23.003 [13] subclause 2.2 and 12.1.  allowedValues: a bounded string of 3 characters representing 3 digits. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mNC | This is the Mobile Network Code (MNC) of the PLMN identifier. See TS 23.003 [13] subclause 2.2 and 12.1.  allowedValues: A bounded string of 2 or 3 characters representing 2 or 3 digits. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: ENUM  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| allowedNfDomains | Pattern (regular expression according to the ECMA-262 dialect [75]) 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: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| 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-NSSAI  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| 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: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: DateTime  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| 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: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| 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, or  set<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: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| 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.  allowedValues: N/A | type: DefaultNotificationSubscription  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| notificationType | This parameter indicates the types of notifications used in Default Notification URIs in the NF Profile of an NF Instance. (see clause 6.1.6.3.4 TS 29.510 [23]).  allowedValues:  "N1\_MESSAGES",  "N2\_INFORMATION",  "LOCATION\_NOTIFICATION",  "DATA\_REMOVAL\_NOTIFICATION",  "DATA\_CHANGE\_NOTIFICATION",  "LOCATION\_UPDATE\_NOTIFICATION",  "NSSAA\_REAUTH\_NOTIFICATION",  "NSSAA\_REVOC\_NOTIFICATION",  "MATCH\_INFO\_NOTIFICATION",  "DATA\_RESTORATION\_NOTIFICATION",  "TSCTS\_NOTIFICATION",  "LCS\_KEY\_DELIVERY\_NOTIFICATION",  "UUAA\_MM\_AUTH\_NOTIFICATION",  "DC\_SESSION\_EVENT\_NOTIFICATION" | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| notificationTypes | This attribute indicates a list of notification type values using the callback URI prefix of the callbackUriPrefix attribute. Each notification type value shall be encoded as defined in Annex B of 3GPP TS 29.500 [76].  When this attribute is set with an empty array, the callback URI prefix indicated in the callbackUriPefix shall be used for all notification types not present in any other CallbackUriPrefixIt | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| n1MessageClass | This attribute (if it is present) identifies that class of N1 messages shall be notified as per TS 29.518 [80]. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| n2InformationClass | This attribute (if it is present) identifies that class of N2 messages shall be notified as per TS 29.518 [80]. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| versions | This attribute identifies the API versions (e.g. "v1") supported for the default notification type. | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| servingScope | This parameter indicates the served geographical areas of a NF instance. | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| lcHSupportInd | This parameter indicates whether the NF supports or does not support Load Control based on LCI Header (see clause 6.3 of 3GPP TS 29.500 [76]). | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| olcHSupportInd | This parameter indicates whether the NF supports or does not support Overload Control based on OCI Header (see clause 6.4 of 3GPP TS 29.500 [76]). | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| nfSetRecoveryTimeList | This parameter contains the recovery time of NF Set(s) indicated by the NfSetId, where the NF instance belongs. | type: DateTime  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: DateTime  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| hostAddr | This parameter defines host address of a NF  allowedValues: N/A | type: Host  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| supportedDataSets | This parameter defines list of supported data sets in the UDR instance (See TS 29.510[23] clause 6.1.6.3.8).  allowedValues: "SUBSCRIPTION", "POLICY", EXPOSURE", "APPLICATION", "A\_PFD", "A\_AFTI", "A\_IPTV", "A\_BDT", "A\_SPD", "A\_EASD", "A\_AMI", "P\_UE", "P\_SCD", "P\_BDT", "P\_PLMNUE", "P\_NSSCD", "P\_PDTQ", "P\_MBSCD", "P\_GROUP". | type: ENUM  multiplicity: 1..\*  isOrdered: False  isUnique: False  defaultValue: None  isNullable: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| smfServingArea | This parameter defines the SMF service area(s) the UPF can serve (See TS 29.510[23]). If not provided, the UPF can serve any SMF service area.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| interfaceUpfInfoList | List of User Plane interfaces configured on the UPF. When this parameter is provided in the NF Discovery response, the NF Service Consumer (e.g., SMF) may use this information for UPF selection. | type: InterfaceUpfInfoItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| interfaceType | This parameter defines the type of User Plane (UP) interface. (See TS 29.510[23] clause 6.1.6.3.9).  allowedValues:  "N3", "N6", "N9", "DATA\_FORWARDING",  "N6MB", "N19MB", "N3MB", "NMB9",  "S1U", "S5U", "S8U", "S11U",  "S12", "S2AU", "S2BU", "N3TRUSTEDN3GPP",  "N3UNTRUSTEDN3GPP", "N9ROAMING",  "SGI", "N19", "SXAU", "SXBU", "N4U" | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ipv4EndpointAddresses | Available endpoint IPv4 address(es) of the User Plane interface. | type: Ipv4Addr  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ipv6EndpointAddresses | Available endpoint IPv6 address(es) of the User Plane interface. | type: Ipv6Addr  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| networkInstance | Network Instance (See TS 29.244 [56]) associated to the User Plane interface | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| iwkEpsInd | Indicates whether interworking with EPS is supported by the UPF.  allowedValues:  True: Supported False: Not Supported | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| pduSessionTypes | Indicates the type(s) of a PDU session.  allowedValues:  "IPV4" "IPV6" "IPV4V6" as per clause 5.8.2.2.1 TS 23.501 [2] "UNSTRUCTURED" "ETHERNET" | type: ENUM  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| atsssCapability | Indicate the ATSSS capability of the UPF. | type: AtsssCapability  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| atsssLL | Indicates the ATSSS-LL capability to support procedures related to Access Traffic Steering, Switching, Splitting (see clauses 4.2.10, 5.32 of TS 23.501 [2]).  allowedValues:  True: Supported False: Not Supported | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| mptcp | Indicates the MPTCP capability to support procedures related to Access Traffic Steering, Switching, Splitting (see clauses 4.2.10, 5.32 of TS 23.501 [2]).  allowedValues:  True: Supported False: Not Supported | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| rttWithoutPmf | Indicates whether the UPF supports RTT measurement without PMF (see clauses 5.32.2, 6.3.3.3 of TS 23.501 [2]).  allowedValues:  True: Supported  False: Not Supported. | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| ueIpAddrInd | Indicates whether the UPF supports allocating UE IP addresses/prefixes.  allowedValues:  True: supported False: not supported | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| wAgfInfo | Indicate that the UPF is collocated with W-AGF. If not present, the UPF is not collocated with Wireline Access Gateway Function (W-AGF). | type: IpInterface  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| tngfInfo | Indicate that the UPF is collocated with TNGF. If not present, the UPF is not collocated with Trusted Non-3GPP Gateway Function (TNGF). | type: IpInterface  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| twifInfo | Indicate that the UPF is collocated with TWIF. If not present, the UPF is not collocated with Trusted WLAN Interworking Function (TWIF). | type: IpInterface  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| redundantGtpu | Indicates whether the UPF supports redundant GTP-U path.  allowedValues:  True: supported False: not supported | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| ipups | Indicates whether the UPF is configured for Inter-PLMN User Plane Security (IPUPS). Any UPF can support the IPUPS functionality. In network deployments where specific UPFs are used to provide IPUPS, UPFs configured for providing IPUPS services shall be selected.  allowedValues:  True: The UPF is configured for IPUPS.  False: The UPF is not configured for IPUPS | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| dataForwarding | Indicates whether the UPF is configured for data forwarding.  Based on operator policies, if dedicated UPFs are preferred to be used for indirect data forwarding during handover scenarios, when setting up the indirect data forwarding tunnel, the SMF should preferably select a UPF configured for data forwarding and use the network instance indicated in the Network Instance ID associated to the DATA\_FORWARDING interface type in the interfaceUpfInfoList attribute.  allowedValues:  True: the UPF is configured for data forwarding  False: the UPF is not configured for data forwarding  If the UPF is configured for data forwarding, it shall support UP network interface with type "DATA\_FORWARDING". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| supportedPfcpFeatures | Supported *Packet Forwarding Control Protocol* (PFCP) Features.  A string used to indicate the PFCP features supported by the UPF, which encodes the "UP Function Features" as specified in Table 8.2.25-1 of TS 29.244 [56] (starting from Octet 5), in hexadecimal representation.  Each character in the string shall take a value of "0" to "9", "a" to "f" or "A" to "F" and each two characters shall represent one octet of "UP Function Features" (starting from Octet 5, to higher octets). For each two characters representing one octet, the first character representing the 4 most significant bits of the octet and the second character the 4 least significant bits of the octet.  The supported PFCP features shall be provisioned in addition and be consistent with the existing UPF features (atsssCapability, ueIpAddrInd, redundantGtpu and ipups), e.g., if the ueIpAddrInd is set to "true", then the UEIP flag shall also be set to "1" in the supported PFCP features. | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: CommModel  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| groupId | This parameter identiies a list of target NF services on which the same communication model is applied to.  allowedValues: N/A | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| targetNFServiceList | This parameter lists target NF services sharing same communication model and configuration.  allowedValues: N/A | type: DN  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| commModelConfiguration | This parameter defines configuration parameters for specific communication model for a group of NF Services.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| supportedFuncList | This parameter lists functionalities supported by a SCP. Refer to TS 23.501 [2]. | type: SupportedFunction  multiplicity: 1..\*  isOrdered: False  isUnique: False  defaultValue: None  isNullable: 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 4291 [113])) or FQDN (See TS 23.003 [13]). | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| function | This parameter defines name of a functionality supported by a SCP. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| policy | This parameter defines configuration policies of a functionality supported by a SCP. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| capabilityList | This parameter lists capabilities supported by a NEF. Refer to TS 23.501 [2].  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: False  defaultValue: None  isNullable: False |
| isCAPIFSup | This parameter defines if the NEF support Common API Framework.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| sEPPType | This parameter defines the type of a SEPP entity. Refer to TS 33.501 [52].  allowedValues: "CSEPP", "PSEPP" | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| sEPPId | This parameter is identifier of a SEPP, it is unique inside a PLMN.  allowedValues: N/A | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| remotePlmnId | This parameter defines PLMNId of the remote SEPP.  allowedValues: N/A | type: PLMNId  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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 4291 [113])) or FQDN(See TS 23.003 [13]).  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| remoteSeppId | This parameter defines identifier of the remote SEPP. it is unique inside a PLMN.  allowedValues: N/A | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| n32cParas | This attribute is used to configure parameters to establish security link between two SEPPs.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| n32fPolicy | This attribute is used to configure policies to protect the messages exchanged between SEPPs.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| withIPX | This attribute defines if there’s an IPX interconnected between two SEPPs.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| fiveQiDscpMappingList | It provides the list of mapping between 5QIs and DSCP.  allowedValues: N/A | type: FiveQiDscpMapping  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| fiveQIValues | It indicates a list of 5QI value.  allowedValues: 0 - 255 | type: Integer  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| dscp | It indicates a DSCP.  allowedValues: 0 – 255 | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| configurable5QISetRef | This is the DN of Configurable5QISet.  allowedValues: DN of the Configurable5QISet MOI. | type: DN  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| dynamic5QISetRef | This is the DN of Dynamic5QISet MOI.  allowedValues: DN of the Dynamic5QISet MOI. | type: DN  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| fiveQIValue | It identifies the 5QI value.  allowedValues: 0 – 255 | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| resourceType | It indicates the Resource Type of a 5QI, as specified in TS 23.501 [2].  allowedValues: "GBR", NON\_GBR", "DELAY\_CRITICAL\_GBR" | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| priorityLevel | It indicates the Priority Level of a 5QI, as specified in TS 23.501 [2].  allowedValues: 0 - 127 | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| packetErrorRate | It indicates the Packet Error Rate of a 5QI, as specified in TS 23.501 [2].  allowedValues: N/A | type: PacketErrorRate  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| gtpUPathQoSMonitoringState | It indicates the state of GTP-U path QoS monitoring for URLLC service.  allowedValues: "Enabled", "Disabled". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: Enabled  isNullable: 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-NSSAI  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: Integer  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: TRUE  isNullable: False |
| isPeriodicGtpUMonitoringSupported | It indicates whether the periodic GTP-U path QoS monitoring reporting is supported, see 3GPP TS 29.244 [56].  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: TRUE  isNullable: False |
| isImmediateGtpUMonitoringSupported | It indicates whether the immediate GTP-U path QoS monitoring reporting is supported, see 3GPP TS 29.244 [56].  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: Yes  isNullable: 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: GtpUPathDelayThresholdsType  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| qFQoSMonitoringState | It indicates the state of QoS monitoring per QoS flow per UE for URLLC service.  allowedValues: "Enabled", "Disabled". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: Enabled  isNullable: 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-NSSAI  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: Integer  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: TRUE  isNullable: False |
| isPeriodicQFMonitoringSupported | It indicates whether the periodic QoS monitoring reporting per QoS flow per UE is supported, see 3GPP TS 29.244 [56].  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: TRUE  isNullable: 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: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: TRUE  isNullable: 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: QFPacketDelayThresholdsType  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| predefinedPccRules | It specifies the predefined PCC Rules, see TS 25.503 [59].  allowedValues: N/A | type: PccRule  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| pccRuleId | It identifies the PCC rule.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| flowInfoList | It is a list of IP flow packet filter information.  allowedValues: N/A | type: FlowInformation  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| applicationId | A reference to the application detection filter configured at the UPF.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| appDescriptor | It is the ATSSS rule application descriptor.  allowedValues: see TS 29.571 [61]. | type: BitString  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| contentVersion | Indicates the content version of the PCC rule.  allowedValues: N/A | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| afSigProtocol | Indicates the protocol used for signalling between the UE and the AF.  allowedValues: "NO\_INFORMATION", "SIP". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: "NO\_INFORMATION"  isNullable: False |
| isAppRelocatable | It indicates the application relocation possibility.  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| isUeAddrPreserved | It Indicates whether UE IP address should be preserved.  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| qosData | It contains the QoS control policy data for a PCC rule.  allowedValues: N/A | type: QoSData  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: QoSData  multiplicity: \*  isOrdered: True  isUnique: True  defaultValue: None  isNullable: False |
| trafficControlData | It contains the traffic control policy data for a PCC rule.  allowedValues: N/A | type: TrafficControlData  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| conditionData | It contains the condition data for a PCC rule.  allowedValues: N/A | type: ConditionData  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| flowDescription | It defines a packet filter for an IP flow.  allowedValues: see TS 29.214 [62]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ethFlowDescription | It defines a packet filter for an Ethernet flow.  allowedValues: see TS 29.514 [62]. | type: EthFlowDescription  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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 9542 [115].  Pattern: '^([0-9a-fA-F]{2})((-[0-9a-fA-F]{2}){5})$'.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ethType | A two-octet string that represents the Ethertype, as described in IEEE 802.3 [64] and IETF RFC 9542 [115] in hexadecimal representation.  Each character in the string shall take a value of "0" to "9" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the ethType shall appear first in the string, and the character representing the 4 least significant bits of the ethType shall appear last in the string.  allowedValues: see IEEE 802.3 [64] and IETF RFC 9542 [115]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| fDesc | It contains the flow description for the Uplink or Downlink IP flow. It shall be present when the ethtype is IP.  allowedValues: see flowDescription in TS 29.214 [62]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| fDir | It indicates the packet filter direction.  allowedValues: "DOWNLINK", "UPLINK". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| sourceMacAddr | It specifies the source MAC address formatted in the hexadecimal notation according to clause 1.1 and clause 2.1 of IETF RFC 9542 [115].  Pattern: '^([0-9a-fA-F]{2})((-[0-9a-fA-F]{2}){5})$'.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| vlanTags | It specifies the Customer-VLAN and/or Service-VLAN tags containing the VID, PCP/DEI fields as defined in IEEE 802.1Q [39] and IETF RFC 9542 [115]. 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 [39] and IETF RFC 9542 [115]. | type: String  multiplicity: \*  isOrdered: True  isUnique: True  defaultValue: None  isNullable: 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: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| 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: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| packFiltId | It is the identifier of the packet filter.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| packetFilterUsage | It indicates if the packet shall be sent to the UE.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| spi | It is the security parameter index of the IPSec packet, see IETF RFC 4301 [66].  allowedValues: see IETF RFC 4301 [66]. | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| flowLabel | It specifies the Ipv6 flow label header field.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| flowDirection | It indicates the direction/directions that a filter is applicable.  allowedValues: "DOWNLINK", "UPLINK", "BIDIRECTIONAL", "UNSPECIFIED". | type: ENUM  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| qosId | It identifies the QoS control policy data for a PCC rule.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| maxbrUl | It represents the maximum uplink bandwidth formatted as follows:  Pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$', see TS 29.512 [60].  Examples:  "125 Mbps", "0.125 Gbps", "125000 Kbps"  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| maxbrDl | It represents the maximum downlink bandwidth formatted as follows:  Pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$', see TS 29.512 [60].  Examples:  "125 Mbps", "0.125 Gbps", "125000 Kbps".  allowedValues: N/A. | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| gbrUl | It represents the guaranteed uplink bandwidth formatted as follows:  Pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$', see TS 29.512 [60].  Examples:  "125 Mbps", "0.125 Gbps", "125000 Kbps".  allowedValues: N/A. | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| gbrDl | It represents the guaranteed downlink bandwidth formatted as follows:  Pattern: '^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$', see TS 29.512 [60].  Examples:  "125 Mbps", "0.125 Gbps", "125000 Kbps".  allowedValues: N/A. | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| 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: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| arp | It indicates the allocation and retention priority.  allowedValues: N/A. | type: ARP  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ARP.priorityLevel | It defines the relative importance of a resource request.  allowedValues: 1..15. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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.  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| reflectiveQos | Indicates whether the QoS information is reflective for the corresponding non-GBR service data flow.  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| sharingKeyDl | It indicates, by containing the same value, what PCC rules may share resource in downlink direction.  allowedValues: N/A. | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| sharingKeyUl | It indicates, by containing the same value, what PCC rules may share resource in uplink direction.  allowedValues: N/A. | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| maxPacketLossRateDl | It indicates the downlink maximum rate for lost packets that can be tolerated for the service data flow.  allowedValues: 0..1000. | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| maxPacketLossRateUl | It indicates the uplink maximum rate for lost packets that can be tolerated for the service data flow.  allowedValues: 0..1000. | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| tcId | It univocally identifies the traffic control policy data within a PDU session.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| flowStatus | It represents whether the service data flow(s) are enabled or disabled. See TS 29.514 [67].  allowedValues: "ENABLED-UPLINK", "ENABLED-DOWNLINK", "ENABLED", "DISABLED", "REMOVED". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: "ENABLED"  isNullable: False |
| redirectInfo | It indicates whether the detected application traffic should be redirected to another controlled address.  allowedValues: N/A. | type: RedirectInformation  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  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: RedirectInformation  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| redirectEnabled | It indicates whether the redirect instruction is enabled.  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| redirectAddressType | It indicates the type of redirect address, see TS 29.512 [60].  allowedValues: " IPV4\_ADDR", "IPV6\_ADDR", "URL", "SIP\_URI". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| redirectServerAddress | It indicates the address of the redirect server.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| muteNotif | It indicates whether applicat'on's start or stop notification is to be muted.  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| routeToLocs | It provides a list of location which the traffic shall be routed to for the AF request.  allowedValues: N/A. | type: RouteToLocation  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| traffCorreInd | It indicates the traffic correlation.  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| dnai | It represents the DNAI (Data network access identifier), see 3GPP TS 23.501 [2].  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| routeInfo | It provides the traffic routing information.  allowedValues: N/A. | type: RouteInformation  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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])$'.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ipv6Addr | It defines the Ipv6 address of the tunnel end point in the data network.  Pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))$'  and  Pattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))$'.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ipv6AddrPrefix | String identifying an IPv6 address prefix formatted according to clause 4 of IETF RFC 5952 [82]. IPv6Prefix data type may contain an individual /128 IPv6 address.  Pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))(\/(([0-9])|([0-9]{2})|(1[0-1][0-9])|(12[0-8])))$'  and  Pattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))(\/.+)$' | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| routeProfId | It identifies the routing profile.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| upPathChgEvent | It contains the information about the AF subscriptions of the UP path change.  allowedValues: N/A. | type: UpPathChgEvent  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| notificationUri | It provides notification address (Uri) of AF receiving the event notification.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| dnaiChgType | It indicates the type of DNAI change, see TS 29.512 [60].  allowedValues: "EARLY", "EARLY\_LATE", "LATE". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| afAckInd | It identifies whether the AF acknowledgement of UP path event notification is expected.  allowedValues: "TRUE", "FALSE". | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| steerFun | It indicates the applicable traffic steering functionality, see TS 29.512 [60].  allowedValues: "MPTCP", "ATSSS\_LL". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| steerModeDl | It provides the traffic distribution rule across 3GPP and Non-3GPP accesses to apply for downlink traffic.  allowedValues: N/A. | type: SteeringMode  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| steerModeUl | It provides the traffic distribution rule across 3GPP and Non-3GPP accesses to apply for uplink traffic.  allowedValues: N/A. | type: SteeringMode  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mulAccCtrl | It indicates whether the service data flow, corresponding to the service data flow template, is allowed or not allowed.  allowedValues: "ALLOWED", "NOT\_ALLOWED". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: "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: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| active | It indicates the active access, see TS 29.571 [61].  allowedValues: "3GPP\_ACCESS", "NON\_3GPP\_ACCESS". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| standby | It indicates the Standby access, see TS 29.571 [61].  allowedValues: "3GPP\_ACCESS", "NON\_3GPP\_ACCESS". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| threeGLoad | It indicates the traffic load to steer to the 3GPP Access expressed in one percent.  allowedValues: 0..100. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| prioAcc | It indicates the high priority access, see TS 29.571 [61].  allowedValues: "3GPP\_ACCESS", "NON\_3GPP\_ACCESS". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| condId | It uniquely identifies the condition data.  allowedValues: N/A. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: DateTime  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: DateTime  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| accessType | It provides the condition of access type of the UE when the session AMBR shall be enforced, see TS 29.512 [60].  If this attribute is included in SmfInfo, it shall contain the access type (3GPP\_ACCESS and/or NON\_3GPP\_ACCESS) supported by the SMF.  If not included, it shall be assumed the both access types are supported.  allowedValues: "3GPP\_ACCESS", "NON\_3GPP\_ACCESS". | type: ENUM  multiplicity: 1..2  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: DateTime  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nsacfInfoSnssaiList | It represents a list of NSACF information per S-NSSAI.  allowedValues: N/A | type: NsacfInfoSnssai  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| 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 Slice  allowedValues: N/A. | type: SnssaiInfo  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: 0  isNullable: False |
| eACMode | It represents if early admission control (EAC) mode is activated.  allowedValues: ACTIVE, INACTIVE | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: INACTIVE  isNullable: False |
| activeEacThreshold | 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: 0  isNullable: False |
| deactiveEacThreshold | 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 - 100  Note: If this attribute is absent, activeEacThreshhold is used to trigger deactivation of eACMode. | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: 100  isNullable: False |
| numberofUEs | It represents the number of the UEs registered with the network slice. This attribute is updated by NSACF.  allowedValues: 0 - 65535 | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| uEIdList | It represents the UEs registered with the network slice. This attribute is updated by NSACF.  allowedValues: N/A | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| networkSliceInfoList | The attribute specifies a list of NetworkSliceInfo which is defined as a datatype (see clause 5.3.95). It is used by and authorized consumer, e.g. NWDAF, to facilitate the data collection from OAM.  allowedValues: N/A | type: NetworkSliceInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| networkSliceRef | This holds a DN of the NetworkSlice managed object relating to the NetworkSlice instance differentiated by sNSSAI and optional cNSIId. | type: DN  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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-NSSAI  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: 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: DN  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| aMFSetRef | This is the DN of AMFSet.  allowedValues: N/A | type: DN  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| aMFSetListRef | This holds a list of DN of AMFSet instances in the same AMFRegion instance.  allowedValues: N/A | type: DN  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| 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: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: 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: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| eASServiceArea | This parameter defines the EAS service area (see clause 7.3.3.6 in TS 23.558 [81]).  allowedValues: N/A | type: ServingLocation  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| eESServiceArea | This parameter defines the EES service area (see clause 7.3.3.5 in TS 23.558 [81]).  allowedValues: N/A | type: ServingLocation  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| eDNServiceArea | This parameter defines the EDN service area (see clause 7.3.3.4 in TS 23.558 [81]).  allowedValues: N/A | type: ServingLocation  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| 5GCNfConnEcmInfoList | The attribute specifies a list of 5GCNfConnInfo which is defined as a datatype (see clause 5.3.120). It is used to provide 5GC NFs, such as PCF, NEF, SCEF, that are connected EDN NFs, such as EAS, EES, and ECS.  allowedValues: N/A | type: 5GCNfConnEcmInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| 5GCNFType | It indicates the type of a NF instance.  allowedValues:"PCF", "NEF", "SCEF". | type: ENUM  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| 5GCNFIpAddress | This parameter defines address of a NF instance, It can be IP address (either IPv4 address (See RFC 791 [37]) or IPv6 address (See RFC 4291 [113])) or FQDN (See TS 23.003 [13]).  allowedValues: N/A | type: Host  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| 5GCNFRef | This attribute holds the DN of a NF instance.  allowedValues: N/A | type: DN  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ednIdentifier | The identifier of the edge data network (See TS 23.558 [81]).  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| eASIpAddress | This parameter defines address of an EAS instance. It can be IP address (either IPv4 address (See RFC 791 [37]) or IPv6 address (See RFC 4291 [113]).  allowedValues: N/A | type: IpAddr  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| eESIpAddress | This parameter defines address of an EES instance. It can be IP address (either IPv4 address (See RFC 791 [37]) or IPv6 address (See RFC 4291 [113])).  allowedValues: N/A | type: IpAddr  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| eCSIpAddress | This parameter defines address of an ECS instance. It can be IP address (either IPv4 address (See RFC 791 [37]) or IPv6 address (See RFC 4291 [113])).  allowedValues: N/A | type: IpAddr  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| uPFConnectionInfo | The attribute is defined as a datatype UPFConnInfo (see clause 5.3.121). It is used to provide the UPF IP address and UPF DN.  allowedValues: N/A | type: UPFConnInfo  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| uPFRef | This attribute holds the DN of an UPF instance.  allowedValues: N/A | type: DN  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| uPFIpAddress | This parameter defines address of an UPF instance, It can be IP address (either IPv4 address (See RFC 791 [37]) or IPv6 address (See RFC 4291 [113])) or FQDN (See TS 23.003 [13]).  allowedValues: N/A | type: Host  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ecmConnectionType | It indicates the type of ECM connection (i.e., user plane connection via UPF, control plane connection via PCF or NEF.  allowedValues: "USERPLANE", "CONTROLPLANE", "BOTH". | type: ENUM  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nwdafEvents | This attribute represents the Analytic functionalities (identified by nwdafEvent defined in TS 29.520 [85]) of the NWDAF instance. MnS consumer can configure this attribute to specify which Analytic functionalities (identified by nwdafEvent) can be performed the NWDAF instance. If the value of this attribute is not present, the NWDAF instance can perform any NWDAFEvents  allowedValues: the detailed ENUM value for NwdafEvent see the Table 5.1.6.3.4-1 in TS 29.520[85]. | type: NwdafEvent  multiplicity: \*  isOrdered: True  isUnique: True  defaultValue: None  isNullable: False |
| administrativeState | This attribute determines whether the NWDAF is enabled or disabled. MnS consumer can configure this attribute to activate or de-activate the analytic functionalities (identified by nwdafEvent defined in TS 29.520 [85]) of the NWDAF instance.  allowedValues: LOCKED, UNLOCKED. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| PCFFunction.groupId | It indicates the identity of the PCF group that is served by the PCF instance.  If not provided, the PCF instance does not pertain to any PCF group.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| dnnList | It represents the DNNs supported by the PCF. The DNN, as defined in clause 9A of TS 23.003 [13], shall contain the Network Identifier and it may additionally contain an Operator Identifier, as specified in TS 23.003 [13] clause 9.1.1 and 9.1.2. If the Operator Identifier is not included, the DNN is supported for all the PLMNs in the plmnList of the NF Profile.  If not provided, the PCF can serve any DNN.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| supiRanges | It represents list of ranges of SUPIs that can be served by the PCF instance.  allowedValues: N/A | type: SupiRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| PcfInfo.gpsiRanges | It represents list of ranges of GPSIs that can be served by the PCF instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| SupiRange.start | It indicates the first value identifying the start of a SUPI range, to be used when the range of SUPI's can be represented as a numeric range (e.g., IMSI ranges). This string shall consist only of digits.  Pattern: "^[0-9]+$"  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SupiRange.end | It indicates the last value identifying the end of a SUPI range, to be used when the range of SUPI's can be represented as a numeric range (e.g. IMSI ranges). This string shall consist only of digits.  Pattern: "^[0-9]+$"  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SupiRange.pattern | It indicates the pattern (regular expression according to the ECMA-262 dialect [75]) representing the set of SUPI's belonging to this range. A SUPI value is considered part of the range if and only if the SUPI string fully matches the regular expression.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| IdentityRange.start | It indicates the first value identifying the start of an identity range, to be used when the range of identities can be represented as a numeric range (e.g., MSISDN ranges). This string shall consist only of digits.  Pattern: "^[0-9]+$"  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| IdentityRange.end | It indicates the last value identifying the end of an identity range, to be used when the range of identities can be represented as a numeric range (e.g. MSISDN ranges). This string shall consist only of digits.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| IdentityRange.pattern | It indicates the pattern (regular expression according to the ECMA-262 dialect [75]) representing the set of identities belonging to this range. An identity value is considered part of the range if and only if the identity string fully matches the regular expression.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| rxDiamHost | It indicates the Diameter host of the Rx interface for the PCF. See TS 29.571 [61]. String contains a Diameter Identity (FQDN).  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| rxDiamRealm | It indicates the Diameter realm of the Rx interface for the PCF. See TS 29.571 [61]. String contains a Diameter Identity (FQDN).  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| v2xSupportInd | It indicates whether V2X Policy/Parameter provisioning is supported by the PCF.  TRUE: Supported  FALSE: Not Supported  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseSupportInd | It indicates whether ProSe capability is supported by the PCF.  TRUE: Supported FALSE: Not Supported | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseCapability | It indicates the supported ProSe Capability by the PCF. | type: ProSeCapability  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| v2xCapability | It indicates the supported V2X Capability by the PCF. | type: V2xCapability  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| proseDirectDiscovery | It indicates whether the PCF supports ProSe Direct Discovery:  - TRUE: ProSe Direct Discovery is supported by the PCF  - FALSE: ProSe Direct Discovery is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseDirectCommunication | It indicates whether the PCF supports ProSe Direct Communication:  - TRUE: ProSe Direct Communication is supported by the PCF  - FALSE: ProSe Direct Communication is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL2UetoNetworkRelay | It indicates whether the PCF supports ProSe Layer-2 UE-to-Network Relay:  - TRUE: ProSe Layer-2 UE-to-Network Relay is supported by the PCF  - FALSE: ProSe Layer-2 UE-to-Network Relay is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL3UetoNetworkRelay | It indicates whether the PCF supports ProSe Layer-3 UE-to-Network Relay:  - TRUE: ProSe Layer-3 UE-to-Network Relay is supported by the PCF  - FALSE: ProSe Layer-3 UE-to-Network Relay is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL2RemoteUe | It indicates whether the PCF supports ProSe Layer-2 Remote UE:  - TRUE: ProSe Layer-2 Remote UE is supported by the PCF  - FALSE: ProSe Layer-2 Remote UE is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL3RemoteUe | It indicates whether the PCF supports ProSe Layer-3 Remote UE:  - TRUE: ProSe Layer-3 Remote UE is supported by the PCF  - FALSE: ProSe Layer-3 Remote UE is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL2UetoUeRelay | It indicates whether the PCF supports ProSe Layer-2 UE to UE relay:  - TRUE: ProSe Layer-2 UE to UE relay is supported by the PCF  - FALSE: ProSe Layer-2 UE to UE relay is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL3UetoUeRelay | It indicates whether the PCF supports ProSe Layer-3 UE to UE relay:  - TRUE: ProSe Layer-3 UE to UE relay is supported by the PCF  - FALSE: ProSe Layer-3 UE to UE relay is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL2EndUe | It indicates whether the PCF supports ProSe Layer-2 End UE:  - TRUE: ProSe Layer-2 End UE is supported by the PCF  - FALSE: ProSe Layer-2 End UE is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL3EndUe | It indicates whether the PCF supports ProSe Layer-3 End UE:  - TRUE: ProSe Layer-3 End UE is supported by the PCF  - FALSE: ProSe Layer-3 End UE is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL3IntermRelay | It indicates whether the PCF supports ProSe Layer-3 Interm Relay:  - TRUE: ProSe Layer-3 Interm Relay is supported by the PCF  - FALSE: ProSe Layer-3 Interm Relay is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL3MultihopRemote | It indicates whether the PCF supports ProSe Layer-3 Multihop Remote:  - TRUE: ProSe Layer-3 Multihop Remote is supported by the PCF  - FALSE: ProSe Layer-3 Multihop Remote is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL3NetMultihopRelay | It indicates whether the PCF supports ProSe Layer-3 Net Multihop Relay:  - TRUE: ProSe Layer-3 Net Multihop Relay Remote is supported by the PCF  - FALSE: ProSe Layer-3 Net Multihop Relay Remote is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL3UeMultihopRelay | It indicates whether the PCF supports ProSe Layer-3 UE Multihop Relay:  - TRUE: ProSe Layer-3 UE Multihop Relay is supported by the PCF  - FALSE: ProSe Layer-3 UE Multihop Relay is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| proseL3EndUeMultihop | It indicates whether the PCF supports ProSe Layer-3 End UE Multihop Relay:  - TRUE: ProSe Layer-3 End UE Multihop Relay is supported by the PCF  - FALSE: ProSe Layer-3 End UE Multihop Relay is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| V2xCapability.lteV2x | It indicates whether the PCF supports LTE V2X capability:  - TRUE: LTE V2X capability is supported by the PCF  - FALSE: LTE V2X capability is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| V2xCapability.nrV2x | It indicates whether the PCF supports NR V2X capability:  - TRUE: NR V2X capability is supported by the PCF  - FALSE (default): NR V2X capability is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| UDMFunction.groupId | It indicates the identity of the UDM group that is served by the UDM instance.  If not provided, the UDM instance does not pertain to any UDM group.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| supiRanges | It represents list of ranges of SUPIs whose profile data is available in the UDM instance.  allowedValues: N/A | type: SupiRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| UdmInfo.gpsiRanges | It represents list of ranges of GPSIs whose profile data is available in the UDM instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| UdmInfo.externalGroupIdentifiersRanges | It represents list of ranges of external groups whose profile data is available in the UDM instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| routingIndicators | It represents list of Routing Indicator information that allows to route network signalling with SUCI (see TS 23.003 [13]) to the UDM instance.  If not provided, the UDM can serve any Routing Indicator.  Pattern: '^[0-9]{1,4}$'  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| UdmInfo.internalGroupIdentifiersRanges | It represents list of ranges of Internal Group Identifiers whose profile data is available in the UDM instance.  If not provided, it does not imply that the UDM supports all internal groups.  allowedValues: N/A | type: InternalGroupIdRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| InternalGroupIdRange.start | It indicates first value identifying the start of an identity range, to be used when the range of identities can be represented as a consecutive numeric range.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| InternalGroupIdRange.end | It indicates last value identifying the end of an identity range, to be used when the range of identities can be represented as a consecutive numeric range.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| InternalGroupIdRange.pattern | It indicates pattern (regular expression according to the ECMA-262 dialect [75]) representing the set of identities belonging to this range. An identity value is considered part of the range if and only if the identity string fully matches the regular expression.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| suciInfos | It represents list of SuciInfo. A SUCI that matches this information can be served by the UDM .  A SUCI that matches all attributes of at least one entry in this array shall be considered as a match of this information.  allowedValues: N/A | type: SuciInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| routingInds | It indicates served Routing Indicator (see TS 23.003 [13], clause 2.2B). If not provided, the AUSF/UDM can serve any Routing Indicator.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| hNwPubKeyIds | It indicating served Home Network Public Key (see TS 23.003 [13], clause 2.2B). If not provided, the AUSF/UDM can serve any public key.  allowedValues: N/A | type: Integer  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| UDRFunction.groupId | It indicates the identity of the UDR group that is served by the UDR instance.  If not provided, the UDR instance does not pertain to any UDR group.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| supiRanges | It represents list of ranges of SUPI's whose profile data is available in the UDR instance.  allowedValues: N/A | type: SupiRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| UdrInfo.gpsiRanges | It represents list of ranges of GPSIs whose profile data is available in the UDR instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| externalGroupIdentifiersRanges | It represents list of ranges of external groups whose profile data is available in the UDR instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| sharedDataIdRanges | It represents list of ranges of Shared Data IDs that identify shared data available in the UDR instance.  allowedValues: N/A | type: SharedDataIdRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| SharedDataIdRange.pattern | It indicates the pattern (regular expression according to the ECMA-262 dialect [75]) representing the set of SharedDataIds belonging to this range. A SharedDataId value is considered part of the range if and only if the SharedDataId string fully matches the regular expression.  EXAMPLE: sharedDataId range. "123456-sharedAmData{localID}" where "123456" is the HPLMN id (i.e. MCC followed by MNC) and "{localID}" can be any string.  JSON: { "pattern": "^123456-sharedAmData.+$" }  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| udsfInfo | This attribute represents information related to UDSF, as described in clause 6.1.6.2.63 of TS 29.510 [23].  allowedValues: N/A | type: UdsFInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| UdsfInfo.groupId | This attribute represents the identity of the UDSF group that is served by the UDSF instance.  If not provided, the UDSF instance does not pertain to any UDSF group.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| UdsfInfo.supiRanges | This attribute represents a list of ranges of SUPIs whose profile data is available in the UDSF instance  If not provided, then the UDSF can serve any SUPI range.  allowedValues: N/A | type: SupiRange  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| UdsfInfo.storageIdRanges | It represents a map (list of key-value pairs) where realmId serves as key and each value in the map is an array of IdentityRanges. Each IdentityRange is a range of storageIds. A UDSF complying with this version of the specification shall include this IE.  Absence indicates that the UDSF's supported realms and storages are determined by the UDSF's consumer by other means such as local provisioning.  allowedValues: N/A | type: IdentityRange  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| seppInfo | This attributes represents information of a SEPP Instance, as described in clause 6.1.6.2.72 of TS 29.510 [23].  allowedValues: N/A | type: SeppInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| seppPrefix | This attributes represents optional deployment specific string used to construct the apiRoot of the next hop SEPP, as described in clause 6.10 of TS 29.500 [76].  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| seppPorts | This attributes represents SEPP port number(s) for HTTP and/or HTTPS.  This attribute shall be present if the SEPP uses non-default HTTP and/or HTTPS ports. When present, it shall contain the HTTP and/or HTTPS ports.  The key of the map shall be "http" or "https".  The value shall indicate the port number for HTTP or HTTPS respectively.  Minimum: 0 Maximum: 65535  allowedValues: N/A | type: Integer  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| remotePlmnList | It represents a list of remote PLMNs reachable through the SEPP.  The absence of this attribute indicates that any PLMN is reachable through the SEPP.  allowedValues: N/A | type: PlmnId  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| remoteSnpnList | This attributes represents list of remote SNPNs reachable through the SEPP.  The absence of this attribute indicates that no SNPN is reachable through the SEPP.  allowedValues: N/A | type: PlmnIdNid  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| scpDomainInfoList | This attributes represents SCP domain specific information of the SCP that differs from the common information in NFProfile data type. The key of the map shall be the string identifying an SCP domain.  allowedValues: N/A | type: ScpDomainInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| scpPrefix | Optional deployment specific string used to construct the apiRoot of the next hop SCP, as described in clause 6.10 of TS 29.500 [76].  allowedValues: N/A | type: String  multiplicity: 0..1  Ordered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| scpPorts | This attributes represents SCP port number(s) for HTTP and/or HTTPS.  This attribute shall be present if the SCP uses non-default HTTP and/or HTTPS ports and if the SCP does not provision port information within ScpDomainInfo for each SCP domain it belongs to.  allowedValues: 0 - 65535 | type: Integer  multiplicity: 1..\*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| addressDomains | Pattern (regular expression according to the ECMA-262 dialect [75]) representing the address domain names reachable through the SCP.  Absence of this IE indicates the SCP can reach any address domain names in the SCP domain(s) it belongs to.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ScpInfo.ipv4Addresses | This attributes represents list of IPv4 addresses reachable through the SCP.  This IE may be present if IPv4 addresses are reachable via the SCP.  If IPv4 addresses are reachable via the SCP, absence of both this IE and ipv4AddrRanges IE indicates the SCP can reach any IPv4 addresses in the SCP domain(s) it belongs to. | type: Ipv4Addr  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ScpInfo.ipv6Prefixes | List of IPv6 prefixes reachable through the SCP.  This IE may be present if IPv6 addresses are reachable via the SCP.  If IPv6 addresses are reachable via the SCP, absence of both this IE and ipv6PrefixRanges IE indicates the SCP can reach any IPv6 prefixes in the SCP domain(s) it belongs to. | type: Ipv6Addr  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ScpInfo.ipv4AddrRanges | List of IPv4 addresses ranges reachable through the SCP.  This IE may be present if IPv4 addresses are reachable via the SCP.  If IPv4 addresses are reachable via the SCP, absence of both this IE and ipv4Addresses IE indicates the SCP can reach any IPv4 addresses in the SCP domain(s) it belongs to. | type: Ipv4AddressRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ScpInfo.ipv6PrefixRanges | List of IPv6 prefixes ranges reachable through the SCP.  This IE may be present if IPv6 addresses are reachable via the SCP.  If IPv6 addresses are reachable via the SCP, absence of both this IE and ipv6Prefixes IE indicates the SCP can reach any IPv6 prefixes in the SCP domain(s) it belongs to. | type: Ipv6PrefixRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedNfSetIdList | List of NF set ID of NFs served by the SCP.  Absence of this IE indicates the SCP can reach any NF set in the SCP domain(s) it belongs to.  NF Set Identifier (see clause 28.12 of TS 23.003 [13]), formatted as the following string:  "set<Set ID>.<nftype>set.5gc.mnc<MNC>.mcc<MCC>", or "set<SetID>.<NFType>set.5gc.nid<NID>.mnc<MNC>.mcc<MCC>" with  <MCC> encoded as defined in clause 5.4.2 ("Mcc" data type definition)  <MNC> encoding the Mobile Network Code part of the PLMN, comprising 3 digits. If there are only 2 significant digits in the MNC, one "0" digit shall be inserted at the left side to fill the 3 digits coding of MNC. Pattern: '^[0-9]{3}$'  <NFType> encoded as a value defined in Table 6.1.6.3.3-1 of 3GPP TS 29.510 [23] but with lower case characters <Set ID> encoded as a string of characters consisting of alphabetic characters (A-Z and a-z), digits (0-9) and/or the hyphen (-) and that shall end with either an alphabetic character or a digit.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| remotePlmnList | List of remote PLMNs reachable through the SCP.  Absence of this IE indicates that no remote PLMN is reachable through the SCP.  allowedValues: N/A | type: PlmnId  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| remoteSnpnList | This attribute represents the List of remote PLMNs reachable through the SCP.  Absence of this IE indicates that no remote PLMN is reachable through the SCP.  allowedValues: N/A | type: PlmnIdNid  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ipReachability | This attribute indicates the type(s) of IP addresses reachable via the SCP in the SCP domain(s) it belongs to.  Absence of this IE indicates that the SCP can be used to reach both IPv4 addresses and IPv6 addresses in the SCP domain(s) it belongs to.  allowedValues:  "IPV4": Only IPv4 addresses are reachable.  "IPV6": Only IPv6 addresses are reachable.  "IPV4V6": Both IPv4 addresses and IPv6 addresses are reachable. | type: ENUM  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| scpCapabilities | List of SCP capabilities supported by the SCP.  This IE shall be present if the SCP supports at least one SCP capability. It may be present otherwise, with an empty array, to indicate that the SCP does not support any capability of the ScpCapability data type. The absence of this attribute shall not be interpreted as an SCP that does not support any capability; this only means that the SCP (e.g. pre-Rel-17 SCP) did not register the capabilities it may support.  allowedValues: "INDIRECT\_COM\_WITH\_DELEG\_DISC", which indicating Indirect communication with delegated discovery supported | type: ENUM  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| PlmnIdNid.nid | This attribute represents 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 TS 23.501 [2]).  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nwdafInfo | It represents specific data for the NWDAF.  allowedValues: N/A | type: NwdafInfo  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| eventIds | It represents the EventId(s) supported by the Nnwdaf\_AnalyticsInfo service, if none are provided the NWDAF can serve any eventId. (see clause TS 29.520)  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| nwdafCapability | This attribute indicates the capability of the NWDAF.  If not present, the NWDAF shall be regarded with no capability.  allowedValues: N/A | type: NwdafCapability  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| analyticsDelay | It represents the supported Analytics Delay related to the eventIds and nwdafEvents.  It is an unsigned integer identifying a period of time in units of seconds.(see clause 5.2.2 TS 29.571 [61]).  allowedValues: N/A | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NwdafInfo.servingNfTypeList | It contains the list of NF type(s) from which the NWDAF NF can collect data. The absence of this attribute indicates that the NWDAF can collect data from any NF type.  allowedValues: N/A | type: NFType  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NwdafInfo.servingNfSetIdList | It contains the list of NF type(s) from which the NWDAF NF can collect data. The absence of this attribute indicates that the NWDAF can collect data from any NF type. (see clause 5.4.2 NfSetId in TS 29.571 [61])  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NwdafInfo.taiList | This attribute represents a List of TAIs the NWDAF can serve. It may contain one or more non-3GPP access TAIs. The absence of both this attribute and the taiRangeList attribute indicates that the NWDAF can be selected for any TAI in the serving network.  allowedValues: N/A | type: Tai  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NwdafInfo.taiRangeList | This attribute represents the range of TAIs the NWDAF can serve. It may contain one or more non-3GPP access TAI ranges. The absence of both this attribute and the taiList attribute indicates that the NWDAF can be selected for any TAI in the serving network.  allowedValues: N/A | type: TaiRange  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mlAnalyticsList | It represents ML Analytics Filter information supported by the Nnwdaf\_MLModelProvision service.  allowedValues: N/A | type: MlAnalyticsInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| analyticsAggregation | It indicates whether the NWDAF supports analytics aggregation:  - true: analytics aggregation capability is supported by the NWDAF  - false: analytics aggregation capability is not supported by the NWDAF. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: false  isNullable: False |
| analyticsMetadataProvisioning | It indicate whether the NWDAF supports analytics metadata provisioning:  - true: analytics metadata provisioning capability is supported by the NWDAF  - false: analytics metadata provisioning capability is not supported by the NWDAF. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: false  isNullable: False |
| mlAnalyticsIds | This attribute represents the Analytic functionalities (identified by nwdafEvent defined in TS 29.520 [85]) of the NWDAF instance. MnS consumer can configure this attribute to specify which Analytic functionalities (identified by nwdafEvent) can be performed the NWDAF instance. If the value of this attribute is not present, the NWDAF instance can perform any NWDAFEvents  Analytics Id(s) supported by the Nnwdaf\_MLModelProvision service, if none are provided the NWDAF can serve any mlAnalyticsId.  allowedValues: the detailed ENUM value for NwdafEvent see the Table 5.1.6.3.4-1 in TS 29.520 [85]. | type: NwdafEvent  multiplicity: \*  isOrdered: True  isUnique: True  defaultValue: None  isNullable: False |
| trackingAreaList | This attribute represents area of Interest of the ML model, if none are provided the ML model for the analytics can apply to any TAIs.  If present, it represents the list of TAIs, it may contain one or more non-3GPP access TAIs.  allowedValues: N/A | type: Tai  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| nsacfInfo | This attribute represents the information of an NSACF NF Instance. (see TS 29.510 [23]).  allowedValues: N/A | type: NsacfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nsacfCapability | It represents NSACF service capability.  allowedValues: N/A | type: NsacfCapability  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NSACFFunction.taiList | This attribute represents the list of TAIs the NSACF can serve. It may contain one or more non-3GPP access TAIs. The absence of this attribute and the taiRangeList attribute indicate that the NSACF can be selected for any TAI in the serving network.  allowedValues: N/A | type: Tai  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NSACFFunction.taiRangeList | This attribute represents the range of TAIs the NSACF can serve. It may contain non-3GPP access TAIs. The absence of this attribute and the taiList attribute indicate that the NSACF can be selected for any TAI in the serving network.  allowedValues: N/A | type: TaiRange  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| supportUeSAC | This attribute indicates the service capability of the NSACF to monitor and control the number of registered UEs per network slice for the network slice that is subject to NSAC.  allowedValues:  TRUE: Supported FALSE: Not Supported | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| supportPduSAC | This attribute indicates the service capability of the NSACF to monitor and control the number of established PDU sessions per network slice for the network slice that is subject to NSAC.  allowedValues:  TRUE: Supported FALSE: Not Supported | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| nefId | It represents the NEF ID. (see clause 6.1.6.3.2 of TS 29.510 [23])  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| appIds | It represents list of internal application identifiers of the managed PFDs.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| afIds | It represents list of application function identifiers of the managed PFDs.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| pfdData | It represents PFD data, containing the list of internal application identifiers and/or the list of application function identifiers for which the PFDs can be provided.  Absence of this attribute indicates that the PFDs for any internal application identifier and for any application function identifier can be provided.  allowedValues: N/A | type: PfdData  multiplicity: 0..1  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| AfEventExposureData.afEvents | It represents AF Event(s) exposed by the NEF after registration of the AF(s) at the NEF.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| afEeData | It represents the AF provided event exposure data. The NEF registers such information in the NRF on behalf of the AF.  allowedValues: N/A | type: AfEventExposureData  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| servedFqdnList | It represents pattern (regular expression according to the ECMA-262 dialect [75]) representing the Domain names served by the NEF.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| dnaiList | It represents list of Data network access identifiers supported by the NEF. The absence of this attribute indicates that the NEF can be selected for any DNAI.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| unTrustAfInfoList | It represents list of information corresponding to the AFs.  allowedValues: N/A | type: UnTrustAfInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| UnTrustAfInfo.afId | It represents associated AF id.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| UnTrustAfInfo. sNssaiInfoList | It represents S-NSSAIs and DNNs supported by the untrust AF.  allowedValues: N/A | type: SnssaiInfoItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| UnTrustAfInfo. mappingInd | When present, this attribute indicates whether the AF supports mapping between UE IP address (IPv4 address or IPv6 prefix) and UE ID (i.e. GPSI).  allowedValues: True, False  True: the AF supports mapping between UE IP address and UE ID;  False: the AF does not support mapping between UE IP address and UE ID. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| SnssaiInfoItem.sNssai | It represents supported S-NSSAI.  allowedValues: N/A | type: ExtSnssai  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SnssaiInfoItem.dnnInfoList | It represents list of parameters supported by the NF per DNN.  allowedValues: N/A | type: DnnInfoItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| snssaiExtension | It represents extensions to the Snssai.  allowedValues: N/A | type: SnssaiExtension  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| SnssaiExtension.sdRanges | It shall contain the range(s) of Slice Differentiator values supported for the Slice/Service Type value indicated in the sst attribute of the Snssai data type (see clause 5.4.4.2 in TS 29.571[61). | type: SdRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| SnssaiExtension.wildcardSd | It indicates that all SD values are supported for the Slice/Service Type value indicated in the sst attribute of the Snssai data type (see clause 5.4.4.2 in TS 29.571[61]).  allowedValues: True, False | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| SdRange.start | First value identifying the start of an SD range.  This string shall be formatted as specified for the sd attribute of the Snssai data type in clause 5.4.4.2 of TS 29.571 [61].  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SdRange.end | Last value identifying the end of an SD range.  This string shall be formatted as specified for the sd attribute of the Snssai data type in clause 5.4.4.2 in TS 29.571 [61].  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| DnnInfoItem.dnn | It represents supported DNN or Wildcard DNN if the NF supports all DNNs for the related S-NSSAI. The DNN shall contain the Network Identifier and it may additionally contain an Operator Identifier. If the Operator Identifier is not included, the DNN is supported for all the PLMNs in the plmnList of the NF Profile.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| uasNfFunctionalityInd | When present, this attribute shall indicate whether the NEF supports UAS NF functionality:  allowedValues: True, False  - True: UAS NF functionality is supported by the NEF.  - False: UAS NF functionality is not supported by the NEF. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| ausfInfo | It represents the information of an AUSF NF Instance (see TS 29.510 [23]).  allowedValues: N/A | type: AusfInfo  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| AUSFFunction.supiRanges | This attribute represents a list of ranges of SUPIs that can be served by the AUSF instance. (NOTE 1)  allowedValues: N/A | type: SupiRange  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| AUSFFunction.routingIndicators | This attribute represents a list of Routing Indicator information that allows to route network signalling with SUCI (see TS 23.003 [13]) to the AUSF instance.  If not provided, the AUSF can serve any Routing Indicator.  Pattern: '^[0-9]{1,4}$'  allowedValues: N/A | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| AUSFFunction.suciInfos | This attribute represents a list of SuciInfo. A SUCI that matches this information can be served by the AUSF. (NOTE 2, NOTE 3)  A SUCI that matches all attributes of at least one entry in this array shall be considered as a match of this information.  allowedValues: N/A | type: SuciInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| smsfInfo | This attribute represents specific data for a SMSF.  allowedValues: N/A | type: SmsfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| roamingUeInd | This attribute indicates whether the SMSF can serve roaming UE:  - TRUE: the SMSF can support roaming UEs.  - FALSE: the SMSF can not support roaming UEs.  Absence of this IE indicates whether the SMSF can serve roaming UEs is not specified.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| remotePlmnRangeList | This attribute indicates the list of ranges of remote PLMNs served by the SMSF, i.e. the SMSF can serve the roaming UEs which belong to the indicated remote PLMNs.  If the roamingUeInd attribute is present with the value "true", absence of remotePlmnRangeList indicates that the SMSF can serve roaming UEs from any remote PLMN.  allowedValues: N/A | type: PlmnRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| PlmnRange.start | This attribute indicates the first value identifying the start of a PLMN range.  The string shall be encoded as follows:  <MCC><MNC>  Pattern: '^[0-9]{3}[0-9]{2,3}$'  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| PlmnRange.end | This attribute indicates the last value identifying the end of a PLMN range.  The string shall be encoded as follows:  <MCC><MNC>  Pattern: '^[0-9]{3}[0-9]{2,3}$'  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| PlmnRange.pattern | This attribute indicates pattern (regular expression according to the ECMA-262 dialect [75]) representing the set of PLMNs belonging to this range. A PLMN value is considered part of the range if and only if the PLMN string (formatted as <MCC><MNC>) fully matches the regular expression.  To be noted, either the start and end attributes, or the pattern attribute, shall be present.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| udrInfo | This attribute represents the information of an UDR NF Instance (see TS 29.510 [23]).  allowedValues: N/A | type: UdrInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| udmInfo | This attribute represents the information of an UDM NF Instance (see TS 29.510 [23]).  allowedValues: N/A | type: UdmInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| lmfInfo | This attribute represents information of an LMF NF Instance  allowedValues: N/A | type: LmfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| servingClientTypes | This attribute represents a list of external client type(s), e.g. emergency client. The NRF should only include this LMF instance to NF discovery with "client-type" query parameter indicating one of the external client types in the list.  Absence of this attribute means the LMF is not dedicated to serve specific client types.  allowedValues: see clause 6.1.6.3.3 of TS 29.572 [86]  "EMERGENCY\_SERVICES": External client for emergency services  "VALUE\_ADDED\_SERVICES": External client for value added services  "PLMN\_OPERATOR\_SERVICES": External client for PLMN operator services  "LAWFUL\_INTERCEPT\_SERVICES": External client for Lawful Intercept services  "PLMN\_OPERATOR\_BROADCAST\_SERVICES": External client for PLMN Operator Broadcast services  "PLMN\_OPERATOR\_OM": External client for PLMN Operator O&M  "PLMN\_OPERATOR\_ANONYMOUS\_STATISTICS": External client for PLMN Operator anonymous statistics  "PLMN\_OPERATOR\_TARGET\_MS\_SERVICE\_SUPPORT": External client for PLMN Operator target MS service support | type: ENUM  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| lmfId | This attribute represents the LMF identification. See clause 6.1.6.3.6 TS 29.572 [86]  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| servingAccessTypes | This attribute contains the access type (3GPP\_ACCESS and/or NON\_3GPP\_ACCESS) supported by the SMF.  If not included, it shall be assumed the both access types are supported.  allowedValues: "3GPP\_ACCESS", "NON\_3GPP\_ACCESS". | type: ENUM  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servingAnNodeTypes | This attribute contains the AN node type (i.e. gNB or NG-eNB) supported by the LMF.  If not included, it shall be assumed that all AN node types are supported.  allowedValues: "GNB","NG\_ENB" | type: ENUM  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servingRatTypes | This attribute contains the RAT type (e.g. 5G NR, eLTE or any of the RAT Types specified for NR satellite access) supported by the LMF.  If not included, it shall be assumed that all RAT types are supported  allowedValues: see clause 5.4.3.2 of TS 29.571 [61]. | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| LmfInfo.taiList | This attribute contains TAI list that the LMF can serve. It may contain one or more non-3GPP access TAIs.  The absence of both this attribute and the taiRangeList attribute indicates that the LMF can be selected for any TAI in the serving network.  allowedValues: N/A | type: TAI  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| LmfInfo.taiRangeList | This attribute contains TAI range list that the LMF can serve. It may contain one or more non-3GPP access TAI ranges. The absence of both this attribute and the taiList attribute indicates that the LMF can be selected for any TAI in the serving network.  allowedValues: N/A | type: TAIRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  allowedValues: N/A  isNullable: False |
| supportedGADShapes | This attribute contains the GAD shapes supported by the LMF.  If not included, it doesn't indicate that the LMF doesn't support any GAD shapes.  The allowedValues are: see clause 6.1.6.3.4 of TS 29.572 [86]  "POINT" indicates Ellipsoid Point  "POINT\_UNCERTAINTY\_CIRCLE" indicates Ellipsoid point with uncertainty circle  "POINT\_UNCERTAINTY\_ELLIPSE" indicates Ellipsoid point with uncertainty ellipse  "POLYGON" indicates Polygon  "POINT\_ALTITUDE" indicates Ellipsoid point with altitude  "POINT\_ALTITUDE\_UNCERTAINTY" indicates Ellipsoid point with altitude and uncertainty ellipsoid  "ELLIPSOID\_ARC" indicates Ellipsoid Arc  "LOCAL\_2D\_POINT\_UNCERTAINTY\_ELLIPSE" indicates Local 2D point with uncertainty ellipse  "LOCAL\_3D\_POINT\_UNCERTAINTY\_ELLIPSOID" indicates Local 3D point with uncertainty ellipsoid | type: ENUM  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| SnssaiInfoItem | This attribute represents a list of S-NSSAIs and DNNs supported by the trusted AF.  allowedValues: N/A | type: SnssaiInfoItem  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| TrustAfInfo.afEvents | This attribute represents list of AF Event(s) supported by the trusted AF.  allowedValues: "SVC\_EXPERIENCE","UE\_MOBILITY", "UE\_COMM", "EXCEPTIONS", "USER\_DATA\_CONGESTION", "PERF\_DATA", "COLLECTIVE\_BEHAVIOUR", "DISPERSION", "MS\_QOE\_METRICS", "MS\_CONSUMPTION", "MS\_NET\_ASSIST\_INVOCATION", "MS\_DYN\_POLICY\_INVOCATION", "MS\_ACCESS\_ACTIVITY"  See clause 5.6.3.3 TS 29.517 [87]. | type: ENUM  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| TrustAfInfo.appIds | This attribute represents a list of Application ID(s) supported by the trusted AF. The absence of this attribute indicate that the AF can be selected for any Application.  allowedValues: N/A | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| internalGroupId | This attribute represents a list of Internal Group Identifiers supported by the trusted AF.  If not provided, it does not imply that the AF supports all internal groups.  String pattern: '^[A-Fa-f0-9]{8}-[0-9]{3}-[0-9]{2,3}-([A-Fa-f0-9][A-Fa-f0-9]){1,10}$'.  allowedValues: N/A | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mappingInd | This attribute indicates whether the trusted AF supports mapping between UE IP address (IPv4 address or IPv6 prefix) and UE ID (i.e. SUPI).  TRUE: the trusted AF supports mapping between UE IP address and UE ID;  FALSE: the trusted AF does not support mapping between UE IP address and UE ID.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| sNssaiEasdfInfoList | This attribute represents a list of parameters supported by the EASDF per S-NSSAI.  allowedValues: N/A | type: SnssaiEasdfInfoItem  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| easdfN6IpAddressList | This attribute represents N6 IP addresses of the EASDF.  allowedValues: N/A | type: IpAddr  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| upfN6IpAddressList | This attribute represents N6 IP addresses of PSA UPFs.  allowedValues: N/A | type: IpAddr  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| SnssaiEasdfInfoItem.sNssai | This attribute represents a S-NSSAI.  allowedValues: N/A | type: SnssaiExtension  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SnssaiEasdfInfoItem.dnnEasdfInfoList | This attribute represents a list of parameters supported by the EASDF per DNN.  allowedValues: N/A | type: DnnEasdfInfoItem  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnEasdfInfoItem.dnn | This attribute represents a supported DNN or Wildcard DNN if the EASDF supports all DNNs for the related S-NSSAI.  The DNN shall contain the Network Identifier and it may additionally contain an Operator Identifier. If the Operator Identifier is not included, the DNN is supported for all the PLMNs in the plmnList of the NF Profile.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NssafInfo.supiRanges | This attribute represents a List of ranges of SUPIs that can be served by the NSSAAF instance.  allowedValues: N/A | type: SupiRange  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NssafInfo.internalGroupIdentifiersRanges | This attribute represents a List of ranges of Internal Group Identifiers that can be served by the NSSAAF instance. If not provided, it does not imply that the NSSAAF supports all internal groups.  allowedValues: N/A | type: InternalGroupIdRange  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedUdrInfo | This attribute contains all the udrInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the udrInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedUdmInfo | This attribute contains all the udmInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the udmInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedAusfInfo | This attribute contains all the ausfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the ausfInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedNwdafInfo | This attribute contains all the nwdafInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the nwdafInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedLmfInfo | This attribute contains all the lmfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the lmfInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedUdsfInfo | This attribute contains all the udsfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedTrustAfInfo | This attribute contains the trustAfInfo attribute locally configured in the NRF or that the NRF received during AF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedNssaafInfo | This attribute contains all the nssaafInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the nssaafInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| chfInfo | It represents the information of an CHF NF Instance (see TS 29.510 [23]).  allowedValues: N/A | type: ChfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ChfInfo.supiRangeList | This attribute represents the list of ranges of SUPIs that can be served by the CHF instance.  allowedValues: N/A | type: SupiRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ChfInfo.gpsiRangeList | This attribute represents the list of ranges of GPSI that can be served by the CHF instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ChfInfo.plmnRangeList | This attribute represents the list of ranges of PLMNs (including the PLMN IDs of the CHF instance) that can be served by the CHF instance. If not provided, the CHF can serve any PLMN.  allowedValues: N/A | type: PlmnRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ChfInfo.groupId | This attribute represents the identity of the CHF group that is served by the CHF instance.  If not provided, the CHF instance does not pertain to any CHF group.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ChfInfo.primaryChfInstance | This attribute represents the NF Instance Id of the primary CHF instance.  This attribute shall be absent if the secondaryChfInstance is present.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ChfInfo.secondaryChfInstance | This attribute represents the NF Instance Id of the secondary CHF instance.  This attribute shall be absent if the primaryChfInstance is present.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mfafInfo | This attribute represents information of an MFAF NF Instance.  allowedValues: N/A | type: MfafInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| MfafInfo.servingNfTypeList | This attribute represents a List of NF type(s) served by MFAF NF. The absence of this attribute indicates that the MFAF can be selected for any NF type  allowedValues: N/A | type: NFType  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| MfafInfo.servingNfSetIdList | This attribute represents a List of NF Set Id(s) served by MFAF NF. The absence of this attribute indicates that the MFAF can be selected for any NF Set Id.  allowedValues: N/A | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| MfafInfo.taiList | This attribute represents a List of TAIs the MFAF can serve. It may contain one or more non-3GPP access TAIs. The absence of both this attribute and the taiRangeList attribute indicates that the MFAF can be selected for any TAI in the serving network.  allowedValues: N/A | type: Tai  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| MfafInfo.taiRangeList | This attribute represents the range of TAIs the MFAF can serve. It may contain one or more non-3GPP access TAI ranges. The absence of both this attribute and the taiList attribute indicates that the MFAF can be selected for any TAI in the serving network.  allowedValues: N/A | type: TaiRange  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| dccfInfo | This attribute represents information of an DCCF NF Instance  allowedValues: N/A | type: DccfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| DccfInfo.servingNfTypeList | This attribute represents the list of NF type(s) from which the DCCF NF can collect data. The absence of this attribute indicates that the DCCF can collect data from any NF type.  allowedValues: N/A | type: NFType  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DccfInfo.servingNfSetIdList | This attribute represents the list of NF Set Id(s) from which the DCCF NF can collect data. The absence of this attribute indicates that the DCCF can collect data from any NF Set.  allowedValues: N/A | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DccfInfo.taiList | This attribute represents the list of TAIs the DCCF can serve. It may contain one or more non-3GPP access TAIs. The absence of both this attribute and the taiRangeList attribute indicates that the DCCF can be selected for any TAI in the serving network.  allowedValues: N/A | type: TAI  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DccfInfo.taiRangeList | This attribute represents the range of TAIs the DCCF can serve. It may contain one or more non-3GPP access TAI ranges. The absence of both this attribute and the taiList attribute indicates that the DCCF can be selected for any TAI in the serving network.  allowedValues: N/A | type: TAIRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| amfInfo | This attribute represents information of an AMF NF Instance.  allowedValues: N/A | type: AmfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| smfInfo | This attribute represents information of an SMF NF Instance. Multiple smfInfo may be allowed when one SMF instance serves multiple combinations of slice instances and TAs.  allowedValues: N/A | type: SmfInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| upfInfo | This attribute represents information of an UPF NF Instance. Multiple upfInfo may be allowed to define different TAI list for each supported S-NSSAI.  allowedValues: N/A | type: UpfInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| pcfInfo | This attribute represents information of a PCF NF Instance. Multiple pcfInfo may be allowed to define different DNN list for each supiranges.  allowedValues: N/A | type: PcfInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| nefInfo | This attribute represents information of an NEF NF Instance.  allowedValues: N/A | type: NefInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| bsfInfo | This attribute represents information of a BSF NF Instance. Multiple bsfInfo may be allowed when BSF provides binding service for various combinations of IPv4 addresses and ipDomains.  allowedValues: N/A | type: BsfInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedUdrInfoList | This attribute contains list of UdrInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedUdmInfoList | This attribute contains list of UdmInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedAusfInfoList | This attribute contains list of AusfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedAmfInfo | This attribute contains all the amfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the amfInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedAmfInfoList | This attribute contains list of AmfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedSmfInfo | This attribute contains all the smfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the smfInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedSmfInfoList | This attribute contains list of SmfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedUpfInfo | This attribute contains all the upfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the upfInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedUpfInfoList | This attribute contains list of UpfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedPcfInfo | This attribute contains all the pcfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the pcfInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedPcfInfoList | This attribute contains list of PcfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedBsfInfo | This attribute contains all the bsfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the bsfInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedBsfInfoList | This attribute contains list of BsfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedChfInfo | This attribute contains all the chfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the chfInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedChfInfoList | This attribute contains list of ChfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedNefInfo | This attribute contains all the nefInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the nefInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedNwdafInfoList | This attribute contains list of nwdafInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedGmlcInfo | This attribute contains all the gmlcInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of which the nefInfo belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedUdsfInfoList | This attribute contains list of UdsfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedScpInfoList | This attribute contains list of ScpInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedSeppInfoList | This attribute contains list of SeppInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| AanfInfo.routingIndicators | This attribute represents the List of Routing Indicators supported by the AAnf instance. If not provided, the AAnf can serve any Routing Indicator.  Pattern: '^[0-9]{1,4}$'  allowedValues: N/A | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| aanfInfo | This attribute represents information of an AANF NF Instance  allowedValues: N/A | type: AanfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| tsctsfInfo | This attribute represents information of an TSCTSF NF Instance  allowedValues: N/A | type: TsctsfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| TsctsfInfo.sNssaiInfoList | This attribute represents the S-NSSAIs and DNNs supported by the TSCTSF. The key of the map shall be a (unique) valid JSON string per clause 7 of IETF RFC 8259 [92], with a maximum of 32 characters.  allowedValues: N/A | type: SnssaiTsctsfInfoItem  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| TsctsfInfo.externalGroupIdentifiersRanges | This attribute represents the ranges of External Group Identifiers that can be served by the TSCTSF.  The absence of this IE indicates that the TSCTSF can serve any external group managed by the PLMN (or SNPN) of the TSCTSF instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| TsctsfInfo.supiRanges | This attribute represents the ranges of SUPIs that can be served by the TSCTSF instance.  allowedValues: N/A | type: SupiRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| TsctsfInfo.gpsiRanges | This attribute represents the ranges of GPSIs that can be served by the TSCTSF instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| TsctsfInfo.internalGroupIdentifiersRanges | This attribute represents the ranges of Internal Group Identifiers that can be served by the TSCTSF instance.  The absence of this IE indicates that the TSCTSF can serve any internal group managed by the PLMN (or SNPN) of the TSCTSF instance.  allowedValues: N/A | type: InternalGroupIdRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servingClientTypes | This attribute shall be present if the GMLC is dedicated to serve the listed external client type(s), e.g. emergency client.  Absence of this attribute means the GMLC is not dedicated to serve specific client types.  See clause 6.1.6.3.3 TS 29.572 [86].  allowedValues:  "EMERGENCY\_SERVICES": External client for emergency services  "VALUE\_ADDED\_SERVICES": External client for value added services  "PLMN\_OPERATOR\_SERVICES": External client for PLMN operator services  "LAWFUL\_INTERCEPT\_SERVICES": External client for Lawful Intercept services  "PLMN\_OPERATOR\_BROADCAST\_SERVICES": External client for PLMN Operator Broadcast services  "PLMN\_OPERATOR\_OM": External client for PLMN Operator O&M  "PLMN\_OPERATOR\_ANONYMOUS\_STATISTICS": External client for PLMN Operator anonymous statistics  "PLMN\_OPERATOR\_TARGET\_MS\_SERVICE\_SUPPORT": External client for PLMN Operator target MS service support | type: <<enumeration>>  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| gmlcNumbers | This attribute represents each item of the array shall carry an OctetString indicating the ISDN number of the GMLC in international number format as described in ITU-T Rec. E.164 [94] and shall be encoded as a TBCD-string.  Pattern for string: "^[0-9]{5,15}$"  allowedValues: N/A | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| gmlcInfo | This attribute represents information of an GMLC NF Instance.  allowedValues: N/A | type: GmlcfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nTNPLMNRestrictionsList | This attribute defines the location restrictions per PLMN that relates to non-terrestrial network access. | type: NTNPLMNRestrictionsInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| blockedLocationInfoList | This defines the information related with the location for which the access restrictions are to be applied in case of NTN. | type: BlockedLocationInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| blockedLocation | This provides the geographical location at which the PLMN are not allowed in case of NTN. | type: PLMNId  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| blockedDurWindow | This provides the time durations for which the PLMN are not allowed at a given location in case of NTN | type: TimeWindow  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| blockedSlice | This provides the slice for which the access is not allowed at a given location in case of NTN. | type: S-NSSAI  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nwdafLogicalFuncSupported | It represents the logical functions supported by the NWDAF.  If not present, the NWDAF shall be regarded with no logical decomposition, in that case the NWDAF only supports the analytics services.  allowedValues:  "NWDAF\_WITH\_ANLF" indicates the NWDAF containing Analytics logical function (AnLF),  "NWDAF\_WITH\_MTLF" indicates the NWDAF containing Model Training logical function (MTLF),  "NWDAF\_WITH\_ANLF\_MTLF" indicates the NWDAF containing both Analytics logical function (AnLF) and Model Training logical function (MTLF). | type: ENUM  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| satelliteCoverageInfoList | This attribute defines the information related to NR Satellite RAT type and corresponding information of satellite coverage | type: SatelliteCoverageInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| nRSatelliteRATtype | This attribute defines the RAT Type for NR satellite access.  allowedValues:  "NRLEO"  "NRMEO"  "NRGEO"  "NROTHERSAT" | type: ENUM  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| locationInfo | This attribute defines the information about location and corresponding time windows for which the satellite coverage will be available or unavailable. | type: NtnLocationInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| location | This defines the Location (geographical area) under consideration to which the satellite coverage info belongs | type: GeoArea  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| availabilityWindows | This attribute defines the list of time windows at which the satellite coverage will be available for this location. Either availabilityWindows or nonAvailabilityWindows shall be present. | type: TimeWindow  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| nonAvailabilityWindows | This attribute defines the list of time windows at which the satellite coverage will not be available for this location. Either availabilityWindows or nonAvailabilityWindows shall be present. | type: TimeWindow  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| n2InterfaceAmfInfo | This attribute represents the N2 interface information of the AMF.  allowedValues: N/A | type: n2InterfaceAmfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| N2InterfaceAmfInfo.ipv4EndpointAddress | This attribute represents available AMF endpoint IPv4 address(es) for N2.  allowedValues: N/A | type: Ipv4Addr  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| N2InterfaceAmfInfo.ipv6EndpointAddress | This attribute represents available AMF endpoint IPv6 address(es) for N2.  allowedValues: N/A | type: Ipv6Addr  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| N2InterfaceAmfInfo.amfName | This attribute represents AMF Name FQDN as defined in clause 28.3.2.5 of TS 23.003 [13]  allowedValues: N/A | type: Fqdn  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| amfOnboardingCapability | This attribute indicates the AMF supports SNPN Onboarding capability. This is used for the case of Onboarding of UEs for SNPNs (see TS 23.501 [2], clause 5.30.2.10).  - FALSE: AMF does not support SNPN Onboarding;  - TRUE: AMF supports SNPN Onboarding.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| highLatencyCom | This attribute indicates whether the AMF supports High Latency communication (e.g. for NR RedCap UE). This is used for CP NF to discover AMF supporting High Latency communication (see TS 23.501 [2], clause 6.3.5).  - FALSE: AMF does not support High Latency communication e.g. for NR RedCap UE;  - TRUE: AMF supports High Latency communication e.g. for NR RedCap UE;  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ismfSupportInd | This attribute may be used by an SMF to explicitly indicate the support of I-SMF capability and its preference to be selected as I-SMF.  When present, this attribute shall indicate whether the I-SMF capability are supported by the SMF:  - TRUE: I-SMF capability supported by the SMF  - FALSE: I-SMF capability not supported by the SMF.  Absence of this attribute indicates the I-SMF capability support of the SMF is not specified.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| smfOnboardingCapability | This attribute indicates the SMF supports SNPN Onboarding capability and User Plane Remote Provisioning. This is used for the case of Onboarding of UEs for SNPNs (see TS 23.501 [2], clauses 5.30.2.10 and 6.2.6.2).  - FALSE: SMF does not support SNPN Onboarding;  - TRUE: SMF supports SNPN Onboarding.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| smfUPRPCapability | This attribute IE indicates the SMF supports User Plane Remote Provisioning (UPRP) capability. This is used for the case of Onboarding of UEs for SNPNs (see TS 23.501 [2], clauses 5.30.2.10 and 6.2.6.2).  - FALSE: SMF does not support UPRP;  - TRUE: SMF supports UPRP.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| sNssaiUpfInfoList | This attribute represents a list of parameters supported by the UPF per S-NSSAI.  allowedValues: N/A | type: SnssaiUpfInfoItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| sxaInd | This attribute indicates whether the UPF is configured to support Sxa interface.  TRUE: Supported  FALSE: Not Supported  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| a2xSupportInd | This attribute indicates whether A2X Policy/Parameter provisioning is supported by the PCF.  TRUE: Supported FALSE: Not Supported  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| a2xCapability | This attribute shall be present if the PCF supports A2X Capability.  When present, this attribute shall indicate the supported A2X Capability by the PCF.  allowedValues: N/A | type: A2xCapability  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| rangingSlPosSupportInd | Indicates whether ranging and sidelink positioning capability is supported by the PCF.  TRUE: Supported FALSE: Not Supported  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| A2xCapability.lteA2x | This attribute indicates whether the PCF supports LTE A2X capability:  - TRUE: LTE A2X capability is supported by the PCF  - FALSE: LTE A2X capability is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| A2xCapability.nrA2x | This attribute indicates whether the PCF supports NR A2X capability:  - TRUE: NR A2X capability is supported by the PCF  - FALSE: NR A2X capability is not supported by the PCF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| multiMemAfSessQosInd | This attribute indicates whether the NEF supports Multi-member AF session with required QoS functionality:  - TRUE: Multi-member AF session with required QoS functionality is supported by the NEF  - FALSE: Multi-member AF session with required QoS functionality is not supported by the NEF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| memberUESelAssistInd | This attribute indicates whether the NEF supports member UE selection assistance functionality:  - TRUE: member UE selection assistance functionality is supported by the NEF  - FALSE: member UE selection assistance functionality is not supported by the NEF.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| mbUpfInfo | This attribute represents information of an MB-UPF NF Instance.  allowedValues: N/A | type: MbUpfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mbUpfInfo.sNssaiMbUpfInfoList | This attribute represents the list of parameters supported by the MB-UPF per S-NSSAI.  allowedValues: N/A | type: SnssaiUpfInfoItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mbUpfInfo.mbSmfServingArea | This attribute represents the MB-SMF service area(s) the MB-UPF can serve.  If not provided, the MB-UPF can serve any MB-SMF service area.  allowedValues: N/A | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mbUpfInfo.interfaceMbUpfInfoList | This attribute represents the list of User Plane interfaces configured on the MB-UPF. When this IE is provided in the NF Discovery response, the NF Service Consumer (e.g. MB-SMF) may use this information for MB-UPF selection.  allowedValues: N/A | type: InterfaceUpfInfoItem  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mbUpfInfo.taiList | This attribute represents the list of TAIs the MB-UPF can serve.  The absence of this attribute and the taiRangeList attribute indicates that the MB-UPF can serve the whole MB-SMF service area defined by the MbSmfServingArea attribute.  allowedValues: N/A | type: Tai  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mbUpfInfo.taiRangeList | This attribute represents the range of TAIs the MB-UPF can serve.  The absence of this attribute and the taiList attribute indicates that the MB-UPF can serve the whole MB-SMF service area defined by the MbSmfServingArea attribute.  allowedValues: N/A | type: Tairange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mbUpfInfo.priority | This attribute represents priority (relative to other NFs of the same type) in the range of 0-65535, to be used for NF selection for a service request matching the attributes of the MbUpfInfo; lower values indicate a higher priority.  See the precedence rules in the description of the priority attribute in NFProfile, if Priority is also present in NFProfile.  The NRF may overwrite the received priority value when exposing an NFProfile with the Nnrf\_NFDiscovery service.  allowedValues: N/A | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SnssaiUpfInfoItem.sNssai | It represents supported S-NSSAI.  allowedValues: N/A | type: ExtSnssai  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SnssaiUpfInfoItem.dnnUpfInfoList | This attribute represents a list of parameters supported by the UPF per DNN.  allowedValues: N/A | type: DnnUpfInfoItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| SnssaiUpfInfoItem.redundantTransport | This attribute indicates whether the UPF supports redundant transport path on the transport layer in the corresponding network slice.  allowedValues:  TRUE: supported FALSE: not supported | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| DnnUpfInfoItem.dnaiList | This attribute represents a list of Data network access identifiers supported by the UPF for this DNN. The absence of this attribute indicates that the UPF can be selected for this DNN for any DNAI.  Each item in the list is the DNAI (Data network access identifier), see TS 23.501 [2].  allowedValues: N/A | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnUpfInfoItem.pduSessionTypes | This attribute represents a list of PDU session type(s) supported by the UPF for a specific DNN. The absence of this attribute indicates that the UPF can be selected for this DNN for any PDU session type supported by the UPF (see clause 6.1.6.2.13).  allowedValues:  "IPv4" "IPv6" "IPv4v6" as per clause 5.8.2.2.1 TS 23.501 [2] "UNSTRUCTURED" "ETHERNET" | type: <<enumeration>>  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnUpfInfoItem.ipv4AddressRanges | This attribute represents a list of ranges of IPv4 addresses handled by UPF.  allowedValues: N/A | type: Ipv4AddressRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnUpfInfoItem.ipv6PrefixRanges | This attribute represents a list of ranges of IPv6 prefixes handled by the UPF.  allowedValues: N/A | type: Ipv6PrefixRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnUpfInfoItem.natedIpv4AddressRanges | This attribute represents a list of ranges of NATed IPv4 addresses.  allowedValues: N/A | type: Ipv4AddressRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnUpfInfoItem.natedIpv6PrefixRanges | This attribute represents a list of ranges of NATed IPv6 prefixes.  allowedValues: N/A | type: Ipv6PrefixRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnUpfInfoItem.ipv4IndexList | This attribute represents a list of Ipv4 Index supported by the UPF.  This <<choice>> represents the IP Index to be sent from UDM to the SMF. (See clause 6.1.6.2.77 TS 29.503 [97])  It is a list of non-exclusive alternatives (Integer or String).  allowedValues: N/A | type: <<choice>>  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnUpfInfoItem.ipv6IndexList | This attribute represents a list of Ipv6 Index supported by the UPF.  This <<choice>> represents the IP Index to be sent from UDM to the SMF. (See clause 6.1.6.2.77 TS 29.503 [97])  It is a list of non-exclusive alternatives (Integer or String).  allowedValues: N/A | type: <<choice>>  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnUpfInfoItem.networkInstance | This attribute represents the N6 Network Instance (See TS 29.244 [56]) associated with the S-NSSAI and DNN.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| DnnUpfInfoItem.dnaiNwInstanceList | This attribute represents a map of a network instance per DNAI for the DNN, where the key of the map is the DNAI (Data network access identifier), see TS 23.501 [2].  When present, the value of each entry of the map shall contain a N6 network instance that is configured for the DNAI indicated by the key.  allowedValues: N/A | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mbSmfInfo | This attribute represents information of an MB-SMF NF Instance  allowedValues: N/A | type: MbSmfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| MbSmfInfo.sNssaiInfoList | This attribute represents the list of S-NSSAIs and DNNs supported by the MB-SMF.  The key of the map shall be a (unique) valid JSON string per clause 7 of IETF RFC 8259 [92], with a maximum of 32 characters.  allowedValues: N/A | type: NFType  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| MbSmfInfo.tmgiRangeList | This attribute represents the list of TMGI range(s) supported by the MB-SMF  The key of the map shall be a (unique) valid JSON string per clause 7 of IETF RFC 8259 [92], with a maximum of 32 characters.  allowedValues: N/A | type: TmgiRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| MbSmfInfo.taiList | This attribute represents the list of TAIs the MB-SMF can serve.  The absence of this attribute and the taiRangeList attribute indicates that the MB-SMF can be selected for any TAI in the serving network.  allowedValues: N/A | type: TAI  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| MbSmfInfo.taiRangeList | This attribute represents the range of TAIs the MB-SMF can serve.  The absence of this attribute and the taiList attribute indicates that the MB-SMF can be selected for any TAI in the serving network.  allowedValues: N/A | type: TAIRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| MbSmfInfo.mbsSessionList | This attribute represents the list of MBS sessions currently served by the MB-SMF  The key of the map shall be a (unique) valid JSON string per clause 7 of IETF RFC 8259 [92], with a maximum of 32 characters.  allowedValues: N/A | type: MbsSession  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mbsServiceIdStart | This attribute represents the first MBS Service ID value identifying the start of a TMGI range.  The value shall be coded as defined for the mbsServiceId attribute of the Tmgi data type defined in 3GPP TS 29.571 [61].  Pattern: '^[A-Fa-f0-9]{6}$'s.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mbsServiceIdEnd | This attribute represents the last MBS Service ID value identifying the end of a TMGI range.  The value shall be coded as defined for the mbsServiceId attribute of the Tmgi data type defined in 3GPP TS 29.571 [61].  Pattern: '^[A-Fa-f0-9]{6}$  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mbsServiceId | This attribute represents MBS Service ID consisting of a 6-digit fixed-length hexadecimal number between 000000 and FFFFFF.  Each character in the string shall take a value of "0" to "9", "a" to "f" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the MBS Service ID shall appear first in the string, and the character representing the 4 least significant bit of the MBS Service ID shall appear last in the string.  Pattern: '^[A-Fa-f0-9]{6}$'  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| Ssm.sourceIpAddr | This attribute represents IP unicast address used as source address in IP packets for identifying the source of the multicast service (e.g. AF/AS).  allowedValues: N/A | type: IpAddr  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| Ssm.destIpAddr | This attribute represents IP multicast address used as destination address in related IP packets for identifying the multicast service associated with the source.  allowedValues: N/A | type: IpAddr  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| MbsSession.mbsSessionId | This attribute represents the MBS Session Identifier.  allowedValues: N/A | type: MbsSessionId  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| MbsSession.mbsAreaSessions | This attribute represents map of Area Session Id and related MBS Service Area information used for MBS session with location dependent content. The Area Session ID together with the mbsSessionId (TMGI) uniquely identifies the MBS session in a specific MBS service area.  For an MBS session with location dependent content, one map entry shall be registered for each MBS Service Area served by the MBS session.  The key of the map shall be the areaSessionId. | type: MbsServiceAreaInfo  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| MbsServiceAreaInfo.areaSessionId | This attribute represents Area Session Identifier used for MBS session with location dependent content.  allowedValues: 0..65535 | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| MbsServiceAreaInfo.mbsServiceArea | This attribute represents MBS Service Area for MBS session with location dependent content.  allowedValues: N/A | type: MbsServiceArea  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| MbsServiceArea.ncgiList | This attribute represents a list of NR cell ids with their pertaining TAIs.  allowedValues: N/A | type: Ncgi  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| pLMNId | This attribute represents a PLMN Identity.  allowedValues: N/A | type: PLMNId  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nrCellId | This attribute represents NR Cell Identity.  It's a 36-bit string identifying an NR Cell Id as specified in clause 9.3.1.7 of TS 38.413 [5], in hexadecimal representation. Each character in the string shall take a value of "0" to "9", "a" to "f" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the Cell Id shall appear first in the string, and the character representing the 4 least significant bit of the Cell Id shall appear last in the string.  Pattern: '^[A-Fa-f0-9]{9}$'  Example:  An NR Cell Id 0x225BD6007 shall be encoded as "225BD6007".  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| HssInfo.groupId | This attribute defines the identity of the HSS group that is served by the HSS instance.  If not provided, the HSS instance does not pertain to any HSS group.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| HssInfo.imsiRanges | This attribute defines the list of ranges of IMSIs whose profile data is available in the HSS instance.  allowedValues: N/A | type: ImsiRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| HssInfo.imsPrivateIdentityRanges | This attribute defines the list of ranges of IMS Private Identities whose profile data is available in the HSS instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| HssInfo.imsPublicIdentityRanges | This attribute defines the list of ranges of IMS Public Identities whose profile data is available in the HSS instance (NOTE 1)  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| HssInfo.msisdnRanges | This attribute defines the list of ranges of MSISDNs whose profile data is available in the HSS instance.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| HssInfo.externalGroupIdentifiersRanges | This attribute defines the list of ranges of external group IDs that can be served by this HSS instance.  If not provided, the HSS instance does not serve any external groups.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| HssInfo.hssDiameterAddress | This attribute defines the Diameter Address of the HSS  allowedValues: N/A | type: NetworkNodeDiameterAddress  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| HssInfo.additionalDiamAddresses | This attribute defines the Additional Diameter Addresses of the HSS;  may be present if hssDiameterAddress is present  allowedValues: N/A | type: NetworkNodeDiameterAddress  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NetworkNodeDiameterAddress.name | This attribute indicates the Diameter name of the network node diameter address. See TS 29.571 [61]. String contains a Diameter Identity (FQDN).  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NetworkNodeDiameterAddress.realm | This attribute indicates the Diameter realm of the network node diameter addres. See TS 29.571 [61]. String contains a Diameter Identity (FQDN).  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ImsiRange.start | This attribute indicates the first value identifying the start of a IMSI range.  Pattern: "^[0-9]+$"  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ImsiRange.end | This attribute indicates the last value identifying the end of a IMSI range.  Pattern: "^[0-9]+$"  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ImsiRange.pattern | This attribute indicates pattern (regular expression according to the ECMA-262 dialect [75]) representing the set of IMSIs belonging to this range. An IMSI value is considered part of the range if and only if the IMSI string fully matches the regular expression.  Either the start and end attributes, or the pattern attribute, shall be present.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mnpfInfo | This attribute represents information of an MNPF NF Instance  allowedValues: N/A | type: MnpfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| MnpfInfo.msisdnRanges | This attribute represents the list of ranges of MSISDNs whose portability status is available in the MNPF.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| activationStatus | It describes the activation status.  allowedValues: ACTIVATED, DEACTIVATED. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mLModelRefList | This attribute holds a DN list of MLModel (See TS 28.105 [105]) . | type: DN  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| aIMLInferenceFunctionRefList | This attribute holds a DN list of AIMLInferenceFunction (See TS 28.105 [105]) . | type: DN  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| TrustAfInfo.sNssaiInfoList | It represents S-NSSAIs and DNNs supported by the trust AF.  allowedValues: N/A | type: SnssaiInfoItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| SnssaiTsctsfInfoItem.dnnInfoList | It represents list of parameters supported by the TSCTSF per DNN.  allowedValues: N/A | type: DnnTsctsfInfoItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnnTsctsfInfoItem.dnn | It represents supported DNN or Wildcard DNN if the TSCTSF supports all DNNs for the related S-NSSAI. The DNN shall contain the Network Identifier and it may additionally contain an Operator Identifier. If the Operator Identifier is not included, the DNN is supported for all the PLMNs in the plmnList of the NF Profile.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mlModelInterInfo | This attribute defines the list of NWDAF vendors that are allowed to retrieve ML models from the NWDAF containing MTLF. The absence of this attribute indicates that none of the NWDAF vendors can retrieve the ML models.  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: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| flCapabilityType | This attribute defines the federated learning capability type supported by NWDAF containing MTLF.  allowedValues:  "FL\_SERVER" indicates NWDAF containing MTLF as Federated Learning Server,  "FL\_CLIENT" indicates NWDAF containing MTLF as Federated Learning Client,  "FL\_SERVER\_AND\_CLIENT" indicates NWDAF containing MTLF as Federated Learning Server and Client. | type: ENUM  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| flTimeInterval | This attribute defines the time window at which the indicated flCapabilityType supported by NWDAF MTLF is available. This attribute shall be present only if flCapabilityType attribute is present.  allowedValues: N/A | type: TimeWindow  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| qFMonitoredSatelliteBackhaulCategories | It specifies the satellite backhaul categories for which the QoS monitoring per QoS flow per UE is to be performed.  allowedValues:  "DYNAMIC\_GEO"  "DYNAMIC\_MEO"  "DYNAMIC\_LEO"  "DYNAMIC\_OTHER\_SAT" | type: ENUM  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| AMFFunction.sliceExpiryInfo | This provides information related to a network slice validity. | type: SliceExpiryInfo  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| expiryTime | This attribute provides information about the time at which the slice is scheduled to be expired as it is not required anymore.  This attribute will be set based on the sliceAvailability coming as part of ServiceProfile. | type: DateTime  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| servedPcscfInfoList | This attribute contains all the pcscfInfo attributes locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedNfInfo | This attribute contains information of other NFs without corresponding NF type specific Info extensions locally configured in the NRF or the NRF received during NF registration. The key of the map is the nfInstanceId of the NF. The map entry is the NfInfo as defined in clause 5.3.229 representing the information of a generic NF instance.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedAanfInfoList | This attribute contains the aanfInfoList attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| PcscfInfo.dnnList | This attribute represents DNNs supported by the P-CSCF. The DNN shall contain the Network Identifier and it may additionally contain an Operator Identifier. If the Operator Identifier is not included, the DNN is supported for all the PLMNs in the plmnList of the NF Profile.  If not provided, the P-CSCF can serve any DNN.  allowedValues: N/A | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| gmFqdn | This attribute represents FQDN of the P-CSCF for the Gm interface.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| gmIpv4Addresses | This attribute represents list of IPv4 addresses of of the P-CSCF for the Gm interface.  allowedValues: N/A | type: Ipv4Addr  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| gmIpv6Addresses | This attribute represents list of IPv6 addresses of of the P-CSCF for the Gm interface.  allowedValues: N/A | type: Ipv6Addr  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mwFqdn | This attribute represents FQDN of the P-CSCF for the Mw interface.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mwIpv4Addresses | This attribute represents list of IPv4 addresses of of the P-CSCF for the Mw interface.  allowedValues: N/A | type: Ipv4Addr  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| mwIpv6Addresses | This attribute represents list of IPv6 addresses of of the P-CSCF for the Mw interface.  allowedValues: N/A | type: Ipv6Addr  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedIpv4AddressRanges | This attribute represents list of ranges of UE IPv4 addresses used on the Gm interface, served by P-CSCF.  The absence of this attribute does not mean the P-CSCF can serve any IPv4 address.  allowedValues: N/A | type: Ipv4AddressRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedIpv6PrefixRanges | This attribute represents list of ranges of UE IPv6 prefixes used on the Gm interface, served by P-CSCF.  The absence of this attribute does not mean the P-CSCF can serve any IPv6 prefix.  allowedValues: N/A | type: Ipv6PrefixRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| AMFFunction.satelliteBackhaulInfoList | This attribute defines the list of satellite backhaul information, including satellite backhaul categoty and corresponding information of (R)AN.  allowedValues: N/A | type: SatelliteBackhaulInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| SatelliteBackhaulInfo.nTNGlobalRanNodeID | It specifies the unique identifier of a (R)AN node for NTN scenario. It is used to identify which (R)AN node the satellite backhaul type is applicable to.  allowedValues: N/A | type: NTNGlobalRanNodeID  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SatelliteBackhaulInfo.satelliteBackhaulCategory | Define the type of the satellite used in the backhaul. Only a single backhaul category can be indicated.  allowedValues:  "GEO"  "MEO"  "LEO"  "OTHER\_SAT"  "DYNAMIC\_GEO"  "DYNAMIC\_MEO"  "DYNAMIC\_LEO"  "DYNAMIC\_OTHER\_SAT"  "NON\_SATELLITE" | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SatelliteBackhaulInfo.geoSatelliteId | Unique identifier of a GEO satellite. See e.g. clause 5.43 in 3GPP TS 23.501 [2]. It shall be formatted as a fixed 5-digit string, padding with leading digits "0" to complete a 5-digit length.  Pattern: '^[0-9]{5}$'  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NTNGlobalRanNodeID. pLMNId | This attribute represents a PLMN Identity.  allowedValues: N/A | type: PLMNId  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NTNGlobalRanNodeID.n3IwfId | This represents the identifier of the N3IWF ID. (Ref. clause 9.3.1.57 of 3GPP TS 38.413 [11])  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NTNGlobalRanNodeID.gNbId | This represents the identifier of the gNB. (Ref. clause 8.2 of 3GPP TS 38.300 [3])  allowedValues: 0..4294967295 | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NTNGlobalRanNodeID.ngeNbId | This represents the identifier of the ng-eNB ID. (Ref. clause 9.3.1.8 of 3GPP TS 38.413 [11])  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NTNGlobalRanNodeID.wagfId | This represents the identifier of the W-AGF ID. (Ref. clause 9.3.1.162 of 3GPP TS 38.413 [11])  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NTNGlobalRanNodeID.tngfId | This represents the identifier of the TNGF ID. (Ref. clause 9.3.1.161 of 3GPP TS 38.413 [11])  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NTNGlobalRanNodeID.twifId | This represents the TWIF identification. (Ref. clause 9.3.1.153 of 3GPP TS 38.413 [11])  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| SMFFunction.dnaiSatelliteMappingList | It specifies the mapping relationship between satellite ID and at least one DNAI.  allowedValues: N/A | type: DnaiSatelliteMapping  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnaiSatelliteMapping.dnaiList | List of Data network access identifiers supported for this DNN.  allowedValues:  DNAI (Data network access identifier), see clause 5.6.7 of 3GPP TS 23.501 [2].  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| DnaiSatelliteMapping.geoSatelliteId | Unique identifier of a GEO satellite. See e.g. clause 5.43 in 3GPP TS 23.501 [2].  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| mdtUserConsentReqList | It represents a list of MDT measurement names that are subject to user consent at MDT activation, as defined in clause 4.4.1. | See mdtUserConsentReqList in clause  4.4.1. |
| mappedCellIdInfoList | It provides the list of mapping between GEO area and Mapped Cell ID.  allowedValues: Not applicable | type: MappedCellIdInfo  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ephemerisInfos | This is the list of Ephemeris related information.  See clause 4.3.79.  allowedValues: N/A | type: Ephemeris  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| trpInfoList | This is the list of TRP (Transmission-Reception Point) related information on LMF (see TS 38.305 [107] clause 5.4.4).  allowedValues: N/A | type: TrpInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| TrpInfo.gNBId | It identifies a gNB within a PLMN. The gNB ID is part of the NR Cell Identifier (NCI) of the gNB cells.  See "gNB Identifier (gNB ID)" of subclause 8.2 of TS 38.300 [3]. See "Global gNB ID" in subclause 9.3.1.6 of TS 38.413 [5].  allowedValues: 0..4294967295 | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| TrpInfo.trpMappingInfoList | This is the list of TRP mapping between satellite and TRPs.  allowedValues: N/A | type: TrpMappingInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| TrpMappingInfo.satelliteId | This attribute indicates satellite Id. It shall be formatted as a fixed 5-digit string, padding with leading digits "0" to complete a 5-digit length.  allowedValues: Follow the pattern: '^[0-9]{5}$' | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| TrpMappingInfo.trpIds | This attribute indicates TRPs uniquely within an NG-RAN node (see TS 38.455 [108] clause 9.2.24). A gNB may serve several TRPs. For NTN, a TRP may be located on board the satellite.  allowedValues: 1..65535 | type: Integer  multiplicity: \*  isOrdered: false  isUnique: True  defaultValue: None  isNullable: False |
| servedHssInfoList | This attribute contains list of HssInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| served5gDdnmfInfo | This attribute contains all the 5gDdnmfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedMfafInfoList | This attribute contains list of MfafInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedEasdfInfoList | This attribute contains list of EasdfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedDccfInfoList | This attribute contains list of DccfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedMbSmfInfoList | This attribute contains list of MbSmfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedTsctsfInfoList | This attribute contains list of TsctsfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| servedMbUpfInfoList | This attribute contains list of MbUpfInfo attribute locally configured in the NRF or that the NRF received during NF registration. The key of the map is the nfInstanceId to which the map entry belongs to.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| BsfInfo | This attribute represents information of a BSF NF Instance.  allowedValues: N/A | type: BsfInfo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| BsfInfo.ipv4AddressRanges | This attribute represents the list of ranges of IPv4 addresses handled by BSF.  If not provided, the BSF can serve any IPv4 address.  allowedValues: N/A | type: Ipv4AddressRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| BsfInfo.dnnList | This attribute represents the list of DNNs handled by the BSF. The DNN shall contain the Network Identifier and it may additionally contain an Operator Identifier. If the Operator Identifier is not included, the DNN is supported for all the PLMNs in the plmnList of the NF Profile.  If not provided, the BSF can serve any DNN.  allowedValues: N/A | type: String  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| BsfInfo.ipDomainList | This attribute represents the list of IPv4 address domains, as described in clause 6.2 of 3GPP TS 29.513 [28], handled by the BSF.  If not provided, the BSF can serve any IP domain.  allowedValues: N/A | type: TAIRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| BsfInfo.ipv6PrefixRanges | This attribute represents the list of ranges of IPv6 prefixes handled by the BSF.  If not provided, the BSF can serve any IPv6 prefix.  allowedValues: N/A | type: Ipv6PrefixRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| BsfInfo.rxDiamHost | This attribute represents the Diameter host of the Rx interface for the BSF.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| BsfInfo.rxDiamRealm | This attribute represents the Diameter realm of the Rx interface for the BSF. See TS 29.571 [61]. String contains a Diameter Identity (FQDN).  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| BsfInfo.groupId | This attribute represents the identity of the BSF group that is served by the BSF instance.  If not provided, the BSF instance does not pertain to any BSF group.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| BsfInfo.supiRanges | This attribute represents list of ranges of SUPI's served by the BSF instance  allowedValues: N/A | type: SupiRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| BsfInfo.gpsiRanges | This attribute represents list of ranges of GPSI's served by the BSF instance  allowedValues: N/A | type: IdentityRange  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| predefinedPccRuleSetRefs | This holds a list of DN of PredefinedPccRuleSet instance.  allowedValues: N/A | type: DN  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| administrativeState | Administrative state of a managed object instance. The administrative state describes the permission to use or prohibition against using the object instance. The adminstrative state is set by the MnS consumer.  allowedValues: LOCKED, UNLOCKED. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: LOCKED  isNullable: False |
| operationalState | Operational state of manged object instance. The operational state describes if an object instance is operable ("ENABLED") or inoperable ("DISABLED"). This state is set by the object instance or the MnS producer and is hence READ-ONLY.  allowedValues: ENABLED, DISABLED. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: DISABLED  isNullable: False |
| userLabel | A user-friendly (and user assignable) name of this object.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nFServiceType | The parameter defines the type of the managed NF service instance  allowedValues: See clause 7.2 of TS 23.501[2] | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| operations | This parameter defines set of operations supported by the managed NF service instance.  allowedValues: See TS 23.502[109] for supporting operations | type: Operation  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| Operation.name | This parameter defines the name of the operation of the managed NF service instance.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| Operation.allowedNFTypes | This parameter identifies the type of network functions allowed to access the operation of the managed NF service instance.  allowedValues: See TS 23.501[2] for NF types | type: ENUM  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| operationSemantics | This paramerter identifies the semantics type of the operation. See TS 23.502[109]  allowedValues: "REQUEST/RESPONSE", "SUBSCRIBE/NOTIFY". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| sAP | This parameter specifies the service access point of the managed NF service instance.  allowedValues: N/A | type: SAP  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| host | This parameter specifies the host address of the managed NF service instance. It can be FQDN (See TS 23.003 [13]) or an IPv4 address (See RFC 791 [37]) or an IPv6 address (See RFC 2373 [38]).  allowedValues: N/A | type: Host  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| port | This parameter specifies the transport port of the managed NF service instance.  allowedValues: 1 - 65535 | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| usageState | Usage state of a managed object instance. It describes whether the resource is actively in use at a specific instant, and if so, whether or not it has spare capacity for additional users at that instant.  allowedValues: "IDLE", "ACTIVE", "BUSY".  The meaning of these values is as defined in 3GPP TS 28.625 [17] and ITU-T X.731 [110]. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| registrationState | This parameter defines the registration status of the managed NF service instance.  allowedValues: "REGISTERED", "DEREGISTERED". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: DEREGISTERED  isNullable: False |
| nfStatus | It represents status of the NF Instance.  allowedValues: refer to TS 29.510[23] clause 6.1.6.3.7 | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| plmnList | It represents a list of PLMN(s) of the Network Function.  It shall be present if this information is available for the NF.  allowedValues: N/A | type: PlmnId  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| sNssais | It indicates S-NSSAIs of the Network Function.  allowedValues: N/A | type: S-NSSAI  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| nfServices | It indicates a list of NF Service Instances.  allowedValues: N/A | type: NFService  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| serviceInstanceId | It indicates the unique ID of the service instance within a given NF Instance.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| serviceName | It indicates name of the service instance.  allowedValues:refer to TS 29.510[23] clause 6.1.6.3.11 | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NFService.versions | This attribute identifies the API versions (supported by the NF Service and if available, the corresponding retirement date of the NF Service.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| schema | It indicates URI scheme (e.g. "http", "https").  allowedValues: "http", "https" | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ipEndPoints | It indicates IP address(es) and port information of the Network Function (including IPv4 and/or IPv6 address) where the service is listening for incoming service requests.  allowedValues: N/A | type: IpEndPoint  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| apiPrefix | It indicates an optional path segment(s) used to construct the {apiRoot} variable of the different API URIs  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nfServiceStatus | It indicates the status of the NF Service Instance. Details can be found in TS 29.510[23] clause 6.1.6.3.12.  allowedValues: "REGISTERED", " SUSPENDED ", "UNDISCOVERABLE", and "CANARY\_RELEASE".  When the nfserviceStatus is "REGISTERED", it means that the NF Service Instance is registered in NRF and can be discovered by other NFs;  When the nfserviceStatus is "SUSPENDED", it means that the NF Service Instance registered in NRF but it is not operative and cannot be discovered by other NFs.  When the nfserviceStatus is "UNDISCOVERABLE", it means that the The NF Service instance is registered in NRF, is operative but cannot be discovered by other NFs.;  When the nfserviceStatus is "CANARY\_RELEASE", it means that the NF Service Instance is registered in NRF, is operative and can be discovered and selected by other NFs under certain conditions. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| allowedOperationsPerNfType | It indicates the allowed operations on resources for each type of NF; the key of the map is the NF Type, and the value is an array of scopes.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| allowedOperationsPerNfInstance | It indicates the allowed operations on resources for a given NF Instance; the key of the map is the NF Instance Id, and the value is an array of scopes.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| allowedOperationsPerNfInstanceOverrides | When it is present and set to true, indicates that the scopes defined in attribute "allowedOperationsPerNfInstance" for a given NF Instance ID take precedence over the scopes defined in attribute "allowedOperationsPerNfType" for the corresponding NF type of the NF Instance associated to such NF Instance ID.  If it is not present, or set to false (default), it indicates that the allowed scopes are any of the scopes present either in "allowedOperationsPerNfType" or in "allowedOperationsPerNfInstance" for the NF Type and NF Instance ID of the NF Service Consumer.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| NFService.sNssais | S-NSSAIs of the NF Service. This may be a subset of the S-NSSAIs supported by the NF.  When present, it shall represent the list of S-NSSAIs supported by the NF Service in all the PLMNs listed in the plmnList and all the SNPNs listed in the snpnList and it shall prevail over the list of S-NSSAIs supported by the NF instance.  allowedValues: N/A | type: ExtSnssai  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| oauth2Required | It indicates whether the NF Service Instance requires Oauth2-based authorization.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| sharedServiceDataId | String uniquely identifying SharedServiceData. The format of the sharedServiceDataId shall be a Universally Unique Identifier (UUID) version 4, as described in IETF RFC 4122 [44]. The hexadecimal letters should be formatted as lower-case characters by the sender, and they shall be handled as case-insensitive by the receiver.  Example:  "4ace9d34-2c69-4f99-92d5-a73a3fe8e23b"  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| interPlmnCallbackUri | It indicates the callback URI to be used by NF Service Producers located in PLMNs that are different from the PLMN of the NF consumer.  allowedValues: N/A | type: UriRo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| acceptedEncoding | It indicates the content encodings that are accepted by a NF Service Consumer when receiving a notification related to a default notification subscription. The value of this attribute shall be formatted as the value of the Accept-Encoding header defined in IETF RFC 9110 clause 12.5.3 (e.g. acceptedEncoding: "gzip;q=1.0, identity;q=0.5, \*;q=0")  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| supportedFeatures | It is a string, which indicates the features of the service corresponding to the subscribed default notification, which are supported by the NF (Service) instance acting as NF service consumer, when it is present of the attribute whose type is DefaultNotificationSubscription <<datatype>>.  When it is present as the attribute of an NFService instance, it indicates the supported features of the NF Service <datatype<>>.  The string shall contain a bitmask indicating supported features in hexadecimal representation:  Each character in the string shall take a value of "0" to "9", "a" to "f" or "A" to "F" and shall represent the support of 4 features as described in table 5.2.2-3 of TS 29.571 [61].  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| serviceInfoList | It indicates a list of service specific information. It may be present when the notification request of the notification type may be generated by multiple services, i.e. notifications from different services may be received by the subscription.  allowedValues: N/A | type: DefSubServiceInfo  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| callbackUriPrefix | It indicates the optional path segment(s) used to construct the prefix of the Callback URIs during the reselection of an NF service consumer, as described in 3GPP TS 29.501 [23], clause 4.4.3  allowedValues: N/A | type: UriRo  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| callbackUriPrefixItem.callbackUriPrefix | It indicates the optional path segment(s) used to construct the prefix of the Callback URIs during the reselection of an NF service consumer, as described in 3GPP TS 29.501 [23], clause 4.4.3  allowedValues: N/A | type: Uri  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| callbackUriPrefixItem. callbackUriPrefixList | It indicates the optional path segment(s) used to construct the prefix of the Callback URIs during the reselection of an NF service consumer, as described in 3GPP TS 29.501 [23], clause 4.4.3.  allowedValues: N/A | type: CallbackUriPrefixItem  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| roamingExchange | This attribute indicates whether the NWDAF supports roaming exchange capability.  allowedValues:  TRUE: supported FALSE: not supported | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| roamingAnalytics | This attribute indicates whether the NWDAF specifically supports *Nnwdaf\_RoamingAnalytics* service when the NWDAF supports roaming exchange capability.  allowedValues:  TRUE: supported FALSE: not supported | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| roamingData | This attribute indicates whether the NWDAF specifically supports Nnwdaf\_RoamingData service when the NWDAF supports roaming exchange capability.  allowedValues:  TRUE: supported  FALSE: not supported | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| featureName | It is a string representing a proprietary feature specific to a given vendor.  It is recommended that the case convention for these strings is the same as for enumerated data types (i.e. UPPER\_WITH\_UNDERSCORE; see 3GPP TS 29.501 [23], clause 5.1.1).  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| featureVersion | It is a string representing the version of the feature.  allowedValues: N/A | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NFService.supportedVendorSpecificFeatures | It indicates a map of Vendor-Specific features, where the key of the map is the IANA-assigned "SMI Network Management Private Enterprise Codes" and the value of each entry of the map shall be a list (array) of VendorSpecificFeature objects as defined in the clause 5.3.247.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| isOnboardSatellite | See definition in clause 4.4.1. | See isOnboardSatellite in clause  4.4.1 |
| onboardSatelliteId | See definition in clause 4.4.1. | See onboardSatelliteId in clause  4.4.1 |
| collocatedNfInstances | It represents information related to collocated NF type(s) and corresponding NF Instances when the NF is collocated with NFs supporting other NF types.  allowedValues: N/A | type: CollocatedNfInstance  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| nfInstanceName | It represents human readable name of the NF Instance.  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| perPlmnSnssaiList | It includes the S-NSSAIs supported by the Network Function for each PLMN supported by the Network Function.  When present, it shall override sNssais IE.  If the perPlmnSnssaiList attribute is provided in at least one NF Service, the S-NSSAIs supported per PLMN in the NF Profile shall be the set or a superset of the perPlmnSnssaiList of the NFService(s).  allowedValues: N/A | type: PlmnSnssai  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| allowedRuleSet | It represents map of rules specifying NF-Consumers allowed or denied to access the NF-Producer.  It may be present when the NF-Producer and the NRF support Allowed-ruleset feature as specified in clause 6.1.9. (Ref. TS 29.510 [23])  allowedValues: N/A | type: RuleSet  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| load | It represents the dynamic load information, within the range 0 to 100, indicates the current load percentage of the NF.  allowedValues: 0..100 | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| loadTimeStamp | It indicates the point in time in which the latest load information (sent by the NF in the "load" attribute of the NF Profile) was generated at the NF Instance.  If the NF did not provide a timestamp, the NRF should set it to the instant when the NRF received the message where the NF provided the latest load information. | type: DateTime  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| extLocality | It indicates the operator defined information about the location of the NF instance.  The key of the map shall be a (unique) valid JSON string per clause 7 of IETF RFC 8259 [92], with a maximum of 32 characters, representing a type of locality as defined in clause 6.1.6.3.18.  Example:  {  "DATA\_CENTER": "dc-123",  "CITY": "Los Angeles",  "STATE": "California"  }  allowedValues: N/A | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| nfProfilePartialUpdateChangesSupportInd | It represents NF Profile Partial Update Changes Support Indicator.  TRUE: the NF Service Consumer supports receiving NF Profile Changes in the response to an NF Profile Partial Update operation.  FALSE (default): the NF Service Consumer does not support receiving NF Profile Changes in the response to an NF Profile Partial Update operation.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| nfProfileChangesInd | It represents the NF Profile Changes Indicator.  This attribute shall be absent in the request to the NRF and may be included by the NRF in NFRegister or NFUpdate response.  TRUE: the NF Profile contains NF Profile changes.  FALSE (default): complete NF Profile.  allowedValues: TRUE, FALSE | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| PlmnSnssai.plmnId | It indicates the PLMN ID for which list of supported S-NSSAI(s) is provided.  allowedValues: Not applicable. | type: PLMNId  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| PlmnSnssai.nid | It indicates NID for which list of supported S-NSSAI(s) is provided.  allowedValues: BIT STRING (SIZE (44)). | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| PlmnSnssai.sNssaiList | It represents the list of S-NSSAI the managed object is supporting..  allowedValues: N/A | type: S-NSSAI  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| RuleSet.priority | It indicates the unique Priority of the rule. Lower value means higher priority.  allowedValues: none negative integer. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| RuleSet.plmns | It indicates PLMNs allowed/dis-allowed to access the service instance.  When absent, NF-Consumers of all PLMNs are assumed to match this criteria.  allowedValues: N/A | type: PLMNId  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| RuleSet.snpns | It indicates SNPNs allowed/dis-allowed to access the service instance.  When absent, NF-Consumers of all SNPNs are assumed to match this criteria.  allowedValues: N/A | type: PlmnIdNid  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| RuleSet.nfTypes | It indicates type of the NFs allowed/dis-allowed to access the service instance.  When absent, NF-Consumers of all nfTypes are assumed to match this criteria.  allowedValues: N/A | type: NFType  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| RuleSet.nfDomains | It represents pattern (regular expression according to the ECMA-262 dialect [75]) representing the NF domain names within the PLMN of the NRF allowed/dis-allowed to access the service instance.  When absent, NF-Consumers of all nfDomains are assumed to match this criteria.  allowedValues: N/A | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| RuleSet.nssais | It represents S-NSSAIs of the NF-Consumers allowed/dis-allowed to access the service instance.  When absent, NF-Consumers of all slices are assumed to match this criteria.  allowedValues: N/A | type: ExtSnssai  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| RuleSet.nfInstances | It represents NF-Instance IDs of the NF-Consumers allowed/dis-allowed to access the NF/NF-Service instance.  When absent, all the NF-Consumers are assumed to match this criteria.  allowedValues: N/A | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| RuleSet.scopes | It represents list of scopes allowed or denied to the NF-Consumers matching the rule.  The scopes shall be any of those defined in the API that defines the current service (identified by the "serviceName" attribute), including the service-level scopes.  When absent, the NF-Consumer is allowed or denied full access to all the resources/operations of service instance.  allowedValues: N/A | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| RuleSet.action | It specifies whether the scopes/access mentioned are allowed or denied for a specific NF-Consumer.  "ALLOW": The NF consumer is allowed to access NF producer  "DENY": The NF consumer is not allowed to access NF Producer  allowedValues: ALLOW, DENY | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| easRedisIndRequired | Indicates whether the EAS rediscovery is required for the application, see easRedisInd in 3GPP TS 29.512 [60].  allowedValues:  TRUE: the EAS rediscovery is required for the application.  FALSE: the EAS rediscovery is not required for the application. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| tscaiTimeDom | Indicates the (g)PTP domain that the (TSN)AF is located in.  AllowedValues: non-negative values. | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| batNotificationCapable | Indicates if the AF is capable to adjust the burst sending time, see capBatAdaptation in 3GPP TS 29.512 [60].  allowedValues:  TRUE: the AF is capable.  FALSE: the AF is not capable. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| uENotifEnabled | Indicates whether QoS flow parameter signalling to the UE is enabled (TRUE), when the SMF is notified by the NG-RAN of changes in the fulfilled QoS situation, i.e. either the QoS profile or an Alternative QoS Profile, see disUeNotif in 3GPP TS 29.512 [60].  allowedValues:  TRUE: QoS flow parameter signalling to the UE is enabled.  FALSE: QoS flow parameter signalling to the UE is disabled. | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| packFiltAllPrec | Determines the order of TFT packet filter allocation for PCC rules.  allowedValues: non-negative values. | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| featureList | Indicates the supported features that are related to a specific serviceName | type: String  multiplicity: 1..N  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| serviceName | Indicates the serviceName value as defined in 3GPP TS 29.510 [23] (e.g. for Nsmf\_EventExposure API, it shall be set to nsmf-event-exposure). | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nscSupportedFeats | Indicates the Network Function Service Consumer features supported per service. | type: ServiceFeatureMap  multiplicity: 0..N  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| IPv4AddressRange.start | It indicates the first value identifying the start of an IPv4 address range.  allowedValues: N/A | type: Ipv4Addr  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| IPv4AddressRange.end | It indicates the last value identifying the end of an IPv4 address range.  allowedValues: N/A | type: Ipv4Addr  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| IPv6PrefixRange.start | It indicates the first value identifying the start of an IPv6 prefix range.  allowedValues: N/A | type: Ipv6Prefix  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| IPv6PrefixRange.end | It indicates the last value identifying the end of an IPv6 prefix range.  allowedValues: N/A | type: Ipv6Prefix  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ManagedNFProfile.supportedVendorSpecificFeatures | It indicates a map of Vendor-Specific features, where the key of the map is the IANA-assigned "SMI Network Management Private Enterprise Codes" and the value of each entry of the map shall be a list (array) of VendorSpecificFeature objects as defined in the clause 5.3.247.  allowedValues: N/A | type: AttributeValuePair  multiplicity: 0..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ManagedNFProfile.selectionConditions | This attribute includes the conditions under which an NF Instance with an NFStatus value set to "CANARY\_RELEASE", or with a "canaryRelease" attribute set to true, shall be selected by an NF Service Consumer.  allowedValues: N/A | type: SelectionConditions  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| ManagedNFProfile.canaryRelease | This attribute indicates whether an NF instance whose nfStatus is set to "REGISTERED" is in Canary Release condition, i.e. it should only be selected by NF Service Consumers under the conditions indicated by the "selectionConditions" attribute.  allowedValues:  - True: the NF is under Canary Release condition, even if the "nfStatus" is set to "REGISTERED"  - False: the NF instance indicates its Canary Release condition via the "nfStatus" attribute | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| ManagedNFProfile.exclusiveCanaryReleaseSelection | This attribute indicates whether an NF Service Consumer should only select an NF Service Producer in Canary Release condition.  allowedValues:  - True: the consumer shall only select producers in Canary Release condition  - False: the consumer may select producers not in Canary Release condition | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| ManagedNFProfile.sharedProfileDataId | This attribute indicates a string uniquely identifying Shared Profile Data. The format of the sharedProfileDataId shall be a Universally Unique Identifier (UUID) version 4, as described in IETF RFC 4122 [44]. The hexadecimal letters should be formatted as lower-case characters by the sender, and they shall be handled as case-insensitive by the receiver.  Example:  "4ace9d34-2c69-4f99-92d5-a73a3fe8e23b"  allowedValues: N/A | type: String  multiplicity:0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ManagedNFProfile.shutdownTime | It indicates the timestamp when the NF Instance is planned to be shut down. This attribute may be present if the nfStatus is set to "UNDISCOVERABLE" due to scheduled shutdown.  allowedValues: N/A | type: DateTime  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ManagedNFProfile.supportedRcfs | It represents a list of Resource Content Filter IDs.  allowedValues: N/A | type: String  multiplicity: 1…\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ManagedNFProfile.canaryPrecedenceOverPreferred | This attribute indicates whether the NRF shall prioritize the NF Service Producer in Canary Release condition over the preferences (preferred-xxx, ext-preferred-xxx) present in NF discovery requests.  allowedValues:  - True: NRF shall prioritize NF Service Producers in Canary Release condition at NF discovery requests, i.e. NF Service Producers determined according to preferred-xxx and/or ext-preferred-xxx shall be prioritized after the NF Service Producers in Canary Release condition. The associated NF (service) priorities for Service Producers in Canary Release condition shall not be modified by NRF.  - False: NRF shall prioritize the NF Service Producers according to preferred-xxx and/or ext-preferred-xxx (i.e. Canary Release condition in NF Service Producers shall not be prioritized over NF Service Consumer preferences at NF discovery requests) | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| SelectionConditions.conditionItem | It represent a single condition item that shall be evaluated Instance shall be selected.  allowedValues: N/A | type: ConditionItem  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| SelectionConditions.conditionGroup | It represents a group of conditions that shall be evaluated.  allowedValues: N/A | type: ConditionGroup  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| ConditionItem.consumerNfTypes | It represents the NF types of the consumers for which the conditions included in this ConditionItem apply.  If this attribute is absent, the conditions are applicable to all NF consumer types.  allowedValues: N/A | type: NFType  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ConditionItem.serviceFeature | It represents a feature number of that NF Service Instance, under CANARY\_RELEASE status. This attribute only applies when the selectionConditions, where this ConditionItem is included, is included in a NF Service Instance.  This condition is evaluated to <true> when the service requests from a consumer of this NF Service Instance require the support of the indicated feature on the NF Service Instance.  EXAMPLE: If "serviceFeature" is set to 2, for a service instance of "nsmf-pdusession", such instance will only be selected for consumers supporting, and requiring the support from the NF Service producer, of the "MAPDU" (ATSSS) feature (see 3GPP TS 29.502, clause 6.1.8),.  allowedValues: Positive integer | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ConditionItem.vsServiceFeature | It represents a Vendor-Specific feature number of that NF Service Instance, under CANARY\_RELEASE status. This attribute only applies when the selectionConditions, where this ConditionItem is included, is included in a NF Service Instance.  This condition is evaluated to “true” when the service requests from a consumer of this NF Service Instance require the support of the indicated Vendor-Specific feature on the NF Service Instance.  allowedValues: N/A | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ConditionItem.supiRangeList | It represents a set of SUPIs for which the NF (Service) instance under CANARY\_RELEASE status shall be selected.  allowedValues: N/A | type: SupiRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ConditionItem.gpsiRangeList | It represents a set of GPSIs for which the NF (Service) instance under CANARY\_RELEASE status shall be selected.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ConditionItem.impuRangeList | It represents a set of IMS Public Identities for which the NF (Service) instance under CANARY\_RELEASE status shall be selected.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ConditionItem.impiRangeList | It represents a set of IMS Private Identities for which the NF (Service) instance under CANARY\_RELEASE status shall be selected.  allowedValues: N/A | type: IdentityRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ConditionItem.peiList | It represents a set of PEIs of the UEs for which the NF (Service) instance under CANARY\_RELEASE status shall be selected.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ConditionItem.taiRangeList | It represents a set of TAIs where the NF (Service) instance under CANARY\_RELEASE status shall be selected for a certain UE.  allowedValues: N/A | type: TAIRange  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ConditionItem.dnnList | It represents a set of DNNs where the NF (Service) instance under CANARY\_RELEASE status shall be selected.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ConditionGroup.and | It represents a list of conditions where the overall evaluation is “true” only if all the conditions in the list are evaluated as “true”.  allowedValues: N/A | type: SelectionConditions  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| ConditionGroup.or | It represents a list of conditions where the overall evaluation is “true” if at least one of the conditions in the list is evaluated as “true”.  allowedValues: N/A | type: SelectionConditions  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NFService.allowedScopesRuleSet | It represents map of rules specifying scopes allowed or denied for NF-Consumers.  This attribute may be present when the NF-Producer and the NRF support Allowed-ruleset feature as specified in clause 6.1.9 in TS 29.510 [23].  allowedValues: N/A | type: RuleSet  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NFService.load | It represents the dynamic load information, within the range 0 to 100, indicates the current load percentage of the NF service.  allowedValues: 0..100 | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NFService.loadTimeStamp | It indicates the point in time in which the latest load information (sent by the NF in the "load" attribute of the NF Profile) was generated at the NF service Instance.  If the NF did not provide a timestamp, the NRF should set it to the instant when the NRF received the message where the NF provided the latest load information.  allowedValues: N/A | type: DateTime  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NFService.nfServiceSetIdList | This attribute represents a list of NF Service Set ID.  At most one NF Service Set ID shall be indicated per PLMN-ID or SNPN of the NF.  allowedValues: N/A | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NFService.perPlmnSnssaiList | It includes the S-NSSAIs supported by the Network Function for each PLMN supported by the Network Function.  When present, it shall override sNssais.  If the perPlmnSnssaiList attribute is provided in at least one NF Service, the S-NSSAIs supported per PLMN in the NF Profile shall be the set or a superset of the perPlmnSnssaiList of the NFService(s).  allowedValues: N/A | type: PlmnSnssai  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| NFService.canaryRelease | This attribute indicates whether an NF instance whose nfStatus is set to "REGISTERED" is in Canary Release condition, i.e. it should only be selected by NF Service Consumers under the conditions indicated by the "selectionConditions" attribute.  allowedValues:  - True: the NF is under Canary Release condition, even if the "nfStatus" is set to "REGISTERED"  - False: the NF instance indicates its Canary Release condition via the "nfStatus" attribute | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| NFService.exclusiveCanaryReleaseSelection | This attribute indicates whether an NF Service Consumer should only select an NF Service Producer in Canary Release condition.  allowedValues:  - True: the consumer shall only select producers in Canary Release condition  - False: the consumer may select producers not in Canary Release condition | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| NFService.shutdownTime | This attribute may be present if the nfStatus is set to "UNDISCOVERABLE" due to scheduled shutdown.  When present, it shall indicate the timestamp when the NF Instance is planned to be shut down.  allowedValues: N/A | type: DateTime  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NFService.canaryPrecedenceOverPreferred | This attribute indicates whether the NRF shall prioritize the NF Service Producer in Canary Release condition over the preferences (preferred-xxx, ext-preferred-xxx) present in NF discovery requests.  allowedValues:  - True: NRF shall prioritize NF Service Producers in Canary Release condition at NF discovery requests, i.e. NF Service Producers determined according to preferred-xxx and/or ext-preferred-xxx shall be prioritized after the NF Service Producers in Canary Release condition. The associated NF (service) priorities for Service Producers in Canary Release condition shall not be modified by NRF.  - False: NRF shall prioritize the NF Service Producers according to preferred-xxx and/or ext-preferred-xxx (i.e. Canary Release condition in NF Service Producers shall not be prioritized over NF Service Consumer preferences at NF discovery requests) | type: Boolean  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| NFService.perPlmnOauth2ReqList | This attribute includes the Oauth2-based authorization requirement supported by the NF Service Instance per PLMN of the NF Service Consumer.  This attribute may be included when the Oauth2.0 authorization requirement supported by the NF Service Instance for different PLMN is different. When the requester PLMN Id is available in perPlmnOauth2ReqList IE, this IE shall override the oauth2Required IE. If the requester PLMN ID is not present in perPlmnOauth2ReqList IE, then the value of oauth2Required IE shall be applicable if available.  allowedValues: N/A | type: PlmnOauth2  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: FALSE  isNullable: False |
| PlmnOauth2.oauth2RequiredPlmnIdList | This attribute indicates the consumer PLMN ID list for which NF Service Instance requires Oauth2-based authorization. | type: PLMNId  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| PlmnOauth2.oauth2NotRequiredPlmnIdList | This attribute indicates the consumer PLMN ID list for which NF Service Instance does not require Oauth2-based authorization. | type: PLMNId  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| uPFCapabilities | It indicates the operator configurable capability supported by the UPF. (see clause 5.8.2.21 in TS 23.501 [2], clause 5.4.2 in TS 29.571 [61])  allowedValues: N/A | type: String  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| aIoTNRFMapping | It represents mapping information between (Internal) target area (provided by NEF) and AIOTF DN. | type: AIoTNRFMapping  multiplicity: 1..\*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| aIOTFdN | It represents the distinguished name (DN) identifier of the AIOTF that serves the (internal) target area provided by NEF to NRF | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| aIoTNRFMapping.internalTargetArea | It is the (internal) target area used by NRF (as provided by NEF) to accurately locate the AIOTF instance. It is mapped to aIOTFdN.  It could refer to any of TAC/TAI(list), PLMN or any geographical location/coordinate/area polygon. | type: AreaScope  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| aIoTNEFMapping | It represents mapping information between external target area (provided by AF) and (5G core internal) target area that is to be provided to NRF | type: AIoTNEFMapping  multiplicity: 1..\*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| aIoTNEFMapping.targetAreaAF | It represents the external target area provided by an AF to NEF for triggering A-IoT services.  It could refer to a geographical location. | type: GeoArea  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| aIoTNEFMapping.internalTargetArea | This is the (internal) target area mapped to external target area. It is provided to NEF by NRF.  It could refer to any of TAC/TAI(list), PLMN or any geographical location/coordinate/area polygon | type: AreaScope  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NOTE 1: If none of these parameters are provided, the AUSF can serve any SUPI managed by the PLMN of the AUSF instance. If "supiRanges" attribute is absent, and "groupId" is present, the SUPIs served by this AUSF instance is determined by the NRF (see TS 23.501 [2], clause 6.2.6.2).  NOTE 2: The combination of SUCI information, e.g. Routing Indicator and Home Network Public Key Id, can be used as criteria for AUSF discovery. This may only be used by the HPLMN in roaming scenarios in this release of the specification, i.e. an AMF in a visited network does not use the Home Network Public Key ID for AUSF selection.  NOTE 3: If the suciInfos attribute is present and contains the routingInds sub-attribute, then the routingIndicators attribute shall also be present. | | |

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| **End of Changes** |