**3GPP TSG-SA5 Meeting #138-e *S5-214413***

**e-meeting, 23 - 31 August 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | 28.541 | **CR** |  | **rev** | - | **Current version:** | 17.3.0 |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Extend NRM fragment to support EP\_transport for mid-haul | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | adNRM | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | C |  | | | | | ***Release:*** | | |  |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | EP\_transport for mid-haul is not supported | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding one ProxyClass and refining related class diagram | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | EP\_transport for mid-haul is not supported | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.3.13.2, 6.2, 6.3.18, 6.4.1, D.4.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | Forge: [Files · 28.541\_Rel17\_CR0559\_Extend\_NRM\_fragment\_to\_support\_EP\_transport\_for\_mid-haul · SA5 – Management & Orchestration and Charging / Management and Orchestration APIs · GitLab (3gpp.org)](https://forge.3gpp.org/rep/sa5/MnS/tree/28.541_Rel17_CR0559_Extend_NRM_fragment_to_support_EP_transport_for_mid-haul) | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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| **Start of 1st Change** |

#### 4.3.13.2 Attributes

The EP\_F1U IOC includes attributes inherited from EP\_RP IOC (defined in TS 28.622[30]) and the following attributes:

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| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| localAddress | O | T | T | F | T |
| remoteAddress | O | T | T | F | T |
| **attribute related to role** |  |  |  |  |  |
| epTransportRef | O | T | F | F | T |

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| **End of 1st Change** |

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| **Start of 2nd Change** |

## 6.2 Class diagram

### 6.2.1 Relationships



Figure 6.2.1-1: Network slice NRM fragment relationship

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

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

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

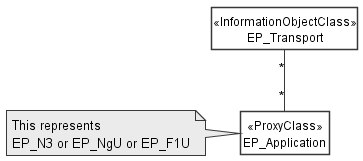


Figure 6.2.1-2: Transport EP NRM fragment relationship



Figure 6.2.1-3: containment relationship for network slice fragment

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| **End of 2nd Change** |

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| **Start of 3rd Change** |

### 6.3.18 EP\_Application <<ProxyClass>>

#### 6.3.18.1 Definition

This represents <<IOC>>EP\_N3 or <<IOC>>EP\_NgU or <<IOC>>EP\_F1U.

#### 6.3.18.2 Attributes

See that defined in <<IOC>>EP\_N3 or <<IOC>>EP\_NgU or <<IOC>>EP\_F1U.

#### 6.3.18.3 Attribute constraints

See respective IOCs.

#### 6.3.18.4 Notifications

See respective IOCs.

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| **End of 3rd Change** |

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| **Start of 4th Change** |

### 6.4.1 Attribute properties

| Attribute Name | Documentation and Allowed Values | Properties |
| --- | --- | --- |
| availability | This parameter specifies the communication service availability requirement, expressed as a percentage. The communication service availability is defined in clause 3.1 of TS 22.261 [28]. | type: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: True |
| serviceProfileId | A unique identifier of property of network slice related requirement should be supported by the network slice. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| sliceProfileId | A unique identifier of the property of network slice subnet related requirement should be supported by the network slice subnet. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| operationalState | It indicates the operational state of the network slice or the network slice subnet. It describes whether or not the resource is physically installed and working.  allowedValues: "ENABLED", "DISABLED".  The meaning of these values is as defined in 3GPP TS 28.625 [17] and ITU-T X.731 [18]. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| administrativeState | It indicates the administrative state of the network slice or the network slice subnet. It describes the permission to use or prohibition against using the managed object instance, imposed through the OAM services.  allowedValues: “LOCKED”, “UNLOCKED”, SHUTTINGDOWN”  The meaning of these values is as defined in 3GPP TS 28.625 [17] and ITU-T X.731 [18]. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: LOCKED  allowedValues: N/A  isNullable: False |
| nsInfo | This attribute contains the NsInfo of the NS instance corresponding to the network slice subnet instance. The NsInfo is described in clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: NsInfo  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: No default value  isNullable: True |
| nSInstanceId | This attribute specifies the identifier of NS instance corresponding to the network slice subnet instance.  See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: No default value  isNullable: True |
| nsName | This attribute specifies the name of NS instance corresponding to the network slice subnet instance.  See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: No default value  isNullable: True |
| description | This attribute specifies the description of NS instance corresponding to the network slice subnet instance.  See clause 8.3.3.2.2 of ETSI GS NFV-IFA 013 [29]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: True  defaultValue: No default value  isNullable: True |
| category | This attribute specifies the category of a service requirement/attribute of GST (see GSMA NG.116 [50]).  allowedValues: character, scalability | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| tagging | This attribute specifies the tagging of a service requirement/attribute of GST in character category (see GSMA NG.116 [50]).  allowedValues: performance, function, operation | type: ENUM  multiplicity: 1…3  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| exposure | This attribute specifies exposure mode of a service requirement/attribute of GST (see GSMA NG.116 [50]).  allowedValues: API, KPI | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| sNSSAIList | This parameter specifies the S-NSSAI list to be supported by the network slice new to be created or the existing network slice to be re-used.  sNSSAList is defined in subclause 4.4.1 |  |
| maxNumberofUEs | An attribute specifies the maximum number of UEs may simultaneously access the network slice or network slice subnet instance. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| coverageAreaTAList | An attribute specifies a list of Tracking Areas for the network slice .  allowedValues:  Legacy TAC and Extended TAC are defined in clause 9.3.3.10 of TS 38.413 [5]. | type: Integer  multiplicity: 1..\*  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| latency | An attribute specifies the packet transmission latency (millisecond) through the RAN, CN, and TN part of 5G network and is used to evaluate utilization performance of the end-to-end network slice. See clause 6.3.1 of 28.554 [27]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| topSliceSubnetProfile.latency | An attribute specifies the packet transmission latency (millisecond) through all domains of the network slice and is used to evaluate utilization performance of the end-to-end network slice. See clause 6.3.1 of 28.554 [27]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| CNSliceSubnetProfile.latency | An attribute specifies the packet transmission latency (millisecond) through CN domain of the network slice and is used to evaluate the delay in CN domain, e.g. time between received UL/DL packet on N3/N6 interface of UPF and successfully sent out the packet on N6/N3 interface. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| RANSliceSubnetProfile.latency | An attribute specifies the packet transmission latency (millisecond) through RAN domain of the network slice and is used to evaluate the delay in RAN domain, e.g. time between received UL/DL packet on air interface/NgU of gNB and successfully sent out the packet on NgU/air interface of the gNB. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| uEMobilityLevel | An attribute specifies the mobility level of UE accessing the network slice. See 6.2.1 of TS 22.261 [28].  allowedValues: stationary, nomadic, restricted mobility, fully mobility. | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: True |
| serviceProfilenetworkSlice.SharingIndicator | The attribute specifies whether a service, defined by the ServiceProfile, can share a NetworkSlice instance with other services or not. If “non-shared” the service needs a dedicated NetworkSlice instance. If “shared” the service may share a NetworkSlice instance with other service(s).  allowedValues: shared, non-shared. | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| serviceProfile.pLMNInfoList | It defines which PLMN and S-NSSAI combinations that are assigned for the service to satisfy service requirements represented by the ServiceProfile in case of network slicing feature is supported.  allowedValues: Not applicable. | type: PLMNInfo  multiplicity: 1..\*  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| sliceProfile.pLMNInfoList | It defines which PLMN and S-NSSAI combinations that are served by the SliceProfile in case of network slicing feature is supported.  allowedValues: Not applicable. | type: PLMNInfo  multiplicity: 1..\*  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| sliceProfile.resourceSharingLevel | An attribute specifies whether the resources to be allocated to the network slice subnet may be shared with another network slice subnet(s).  allowedValues: shared, non-shared. | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: Yes  isNullable: True |
| serviceProfileList | An attribute specifies a list of ServiceProfile (see clause 6.3.3) supported by the network slice | type: ServiceProfile  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| sliceProfileList | An attribute specifies a list of SliceProfile (see clause 6.3.4) supported by the network slice subnet | type: SliceProfile  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| sST | This parameter specifies the slice/service type in a ServiceProfile to be supported by a network slice.  See clause 5.15.2 of 3GPP TS 23.501 [2]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| delayTolerance | An attribute specifies the properties of service delivery flexibility, especially for the vertical services that are not chasing a high system performance. See clause 4.3 of TS 22.104 [51]. | type: DelayTolerance  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| DelayTolerance.support | An attribute specifies whether or not the network slice supports service delivery flexibility, especially for the vertical services that are not chasing a high system performance.  allowedValues:  "NOT SUPPORTED", "SUPPORTED". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| deterministicComm | An attribute specifies the properties of the deterministic communication for periodic user traffic, see clause 4.3 of TS 22.104 [51]. | type: DeterministicComm  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| DeterministicComm.availability | An attribute specifies whether or not the network slice supports deterministic communication for period user traffic.  allowedValues:  "NOT SUPPORTED", "SUPPORTED". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| DeterministicComm.periodicityList | An attribute specifies a list of periodicities supported by the network slice for deterministic communication. | type: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| dLThptPerSlice | This attribute defines achievable data rate of the network slice in downlink that is available ubiquitously across the coverage area of the slice, refer NG.116 [50]. | type: XLThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| dLThptPerSliceSubnet | This attribute defines achievable data rate of the network slice subnet in downlink that is available ubiquitously across the coverage area of the slice. | type: XDLThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| dLThptPerUE | This attribute defines data rate supported by the network slice per UE, refer NG.116 [50]. | type: XLThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| guaThpt | This attribute describes the guaranteed data rate. | type: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| maxThpt | This attribute describes the maximum data rate. | type: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| uLThptPerSlice | This attribute defines achievable data rate of the network slice in uplink that is available ubiquitously across the coverage area of the slice, refer NG.116 [50]. | type: XLThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| uLThptPerUE | This attribute defines data rate supported by the network slice per UE, refer NG.116 [50]. | type: XLThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| uLThptPerSliceSubnet | This attribute defines achievable data rate of the network slice subnet in uplink that is available ubiquitously across the coverage area of the slice. | type: XLThpt  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| maxPktSize | This parameter specifies the maximum packet size supported by the network slice or the network slice subnet, refer NG.116 [50]. | type: MaxPktSize  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| MaxPktSize.maxsize | This parameter specifies the maximum packet size supported by the network slice, refer NG.116 [50]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| maxNumberofPDUSessions | This parameter defines the maximum number of concurrent PDU sessions supported by the network slice, refer NG.116 [50]. | type: MaxNumberofPDUSessions  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| MaxNumberofPDUSessions.nOofPDUSessions | This parameter defines the maximum number of concurrent PDU sessions supported by the network slice, refer NG.116 [50]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| kPIMonitoring | An attribute specifies the name list of KQIs and KPIs available for performance monitoring. | type: KPIMonitoring  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| KPIMonitoring. kPIList | An attribute specifies the name list of KQIs and KPIs available for performance monitoring. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| nBIoT | An attribute specifies whether NB-IoT is supported in the RAN in the network slice, see NG.116 [50]. | type: NBIoT  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| NBIoT.support | An attribute specifies whether NB-IoT is supported in the RAN in the network slice, see NG.116 [50].  allowedValues:  "NOT SUPPORTED", "SUPPORTED". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| synchronicity | An attribute specifies whether synchronicity of communication devices is supported, Two cases are most important in this context, see clause 3.4.29 of NG.116 [50]:  - Synchronicity between a base station and a mobile device and  - Synchronicity between mobile devices. | type: Synchronicity  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| Synchronicity.availability | An attribute specifies whether synchronicity of communication devices is supported, see NG.116 [50].  allowedValues:  "NOT SUPPORTED", "BETWEEN BS AND UE", "BETWEEN BS AND UE & UE AND UE". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| Synchronicity.accuracy | An attribute specifies the accuracy of the synchronicity, see NG.116 [50]. | type: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| RANSliceSubnetProfile.synchronicity | An attribute specifies whether synchronicity of communication devices is supported in the RAN domain, Two cases are most important in this context, see clause 3.4.29 of NG.116 [50]:  - Synchronicity between a base station and a mobile device and  - Synchronicity between mobile devices. | type: SynchronicityRANSubnet  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| SynchronicityRANSubnet.availability | An attribute specifies whether synchronicity of communication devices is supported in the RAN domain, see NG.116 [50].  allowedValues:  "NOT SUPPORTED", "BETWEEN BS AND UE", "BETWEEN BS AND UE & UE AND UE". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| SynchronicityRANSubnet.accuracy | An attribute specifies the accuracy of the synchronicity in the RAN domain, see NG.116 [50]. | type: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| userMgmtOpen | An attribute specifies whether or not the network slice supports the capability for the NSC to manage their users or groups of users’ network services and corresponding requirements. | type: UserMgmtOpen  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| UserMgmtOpen.support | An attribute specifies whether or not the network slice supports the capability for the NSC to manage their users or groups of users’ network services and corresponding requirements.  allowedValues:  "NOT SUPPORTED", "SUPPORTED". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| v2XCommModels | An attribute specifies whether or not the V2X communication mode is supported by the network slice. | type: V2XCommMode  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| V2XCommMode.v2XMode | An attribute specifies whether or not the V2X communication mode is supported by the network slice.  allowedValues:  "NOT SUPPORTED", "SUPPORTED BY NR". | type: <<enumeration>>  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| coverageArea | An attribute specifies the coverage area of the network slice, i.e. the geographic region where a 3GPP communication service is accessible, see Table 7.1-1 of TS 22.261 [28]) and NG.116 [50]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| termDensity | An attribute specifies the overall user density over the coverage area of the network slice. See Table 7.1-1 of TS 22.261 [28]). | type: TermDensity  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| TermDensity.density | An attribute specifies the overall user density over the coverage area of the network slice. See Table 7.1-1 of TS 22.261 [28]). | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| positioning | An attribute specifies whether the network slice provides geo-localization methods or supporting methods, see clause 3.4.20 of NG.116 [50]. | type: Positioning  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| Positioning.availability | An attribute specifies if this attribute is provided by the network slice and contains a list of positioning methods provided by the slice. If the list is empty this attribute is not available in the network slice and the other parameters might be ignored, see NG.116 [50]. Comma separated multiple values are allowed:  CIDE-CID (LTE and NR), OTDOA (LTE and NR), RF fingerprinting, AECID, Hybrid positioning, NET-RTK. | type: ENUM  multiplicity: 1..6  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| Positioning.predictionfrequency | An attribute specifies how often location information is provided. This parameter simply defines how often the customer is allowed to request location information. This is not related to the time it takes to determine the location, which is a characteristic of the positioning method, see NG.116 [50].  allowedValues:  "PERSEC", "PERMIN", "PERHOUR". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| Positioning.accuracy | An attribute specifies the accuracy of the location information. Accuracy depends on the respective positioning solution applied in the network slice, see NG.116 [50]. | type: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| RANSliceSubnetProfile.positioning | An attribute specifies whether the RAN domain of the network slice provides geo-localization methods or supporting methods, see clause 3.4.20 of NG.116 [50]. | type: PositioningRANSubnet  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| PositioningRANSubnet.availability | An attribute specifies if this attribute is provided by the RAN domain of the network slice and contains a list of positioning methods provided by the RAN domain. If the list is empty this attribute is not available in the RAN domain and the other parameters might be ignored, see NG.116 [50]. Comma separated multiple values are allowed:  CIDE-CID (LTE and NR), OTDOA (LTE and NR), RF fingerprinting, AECID, Hybrid positioning, NET-RTK. | type: ENUM  multiplicity: 1..6  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| PositioningRANSubnet.predictionfrequency | An attribute specifies how often location information is provided. This parameter simply defines how often the customer is allowed to request location information. This is not related to the time it takes to determine the location, which is a characteristic of the positioning method, see NG.116 [50].  allowedValues:  "PERSEC", "PERMIN", "PERHOUR". | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| PositioningRANSubnet.accuracy | An attribute specifies the accuracy of the location information. Accuracy depends on the respective positioning solution applied in the RAN domain of the network slice, measurement unit is meter, see NG.116 [50]. | type: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| activityFactor | An attribute specifies the percentage value of the amount of simultaneous active UEs to the total number of UEs where active means the UEs are exchanging data with the network. See Table 7.1-1 of TS 22.261 [28]). | type: Real  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| uESpeed | An attribute specifies the maximum speed (in km/hour) supported by the network slice or network slice subnet at which a defined QoS can be achieved. See Table 7.1-1 of TS 22.261 [28]). | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| jitter | An attribute specifies the deviation from the desired value to the actual value when assessing time parameters, see clause C.4.1 of TS 22.104 [51]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| survivalTime | An attribute specifies the time that an application consuming a communication service may continue without an anticipated message. See clause 5 of TS 22.104 [51]). | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| reliability | An attribute specifies in the context of network layer packet transmissions, percentage value of the amount of sent network layer packets successfully delivered to a given system entity within the time constraint required by the targeted service, divided by the total number of sent network layer packets, see TS 22.261 [28] and TS 22.104 [51]. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: True |
| NetworkSlice.networkSliceSubnetRef | This holds a DN of NetworkSliceSubnet relating to the NetworkSlice instance. | type: DN  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NetworkSliceSubnet.networkSliceSubnetRef | This holds a list of DN of constituent NetworkSliceSubnet supporting NetworkSliceSubnet instance | type: DN  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| managedFunctionRef | This holds a list of DN of ManagedFunction instances supporting the NetworkSliceSubnet instance. | type: DN  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| ipAddress | This parameter specifies the IP address assigned to a logical transport interface/endpoint.  It can be an IPv4 address (See RFC 791 [37]) or an IPv6 address (See RFC 2373 [38]).  See note 1 | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| logicInterfaceId | This parameter specifies the identify of a logical transport interface. It could be VLAN ID (See IEEE 802.1Q [39]), MPLS Tag or Segment ID. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| nextHopInfoList | This parameter is used to identify ingress transport node. Each node can be identified by any of combination of IP address of next-hop router of transport network, system name, port name, IP management address of transport nodes. | type: String  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| qosProfileRefList | This parameter specifies reference to QoS Profile for a logical transport interface. A QoS profile includes a set of parameters which are locally provisioned on both sides of a logical transport interface. | type: String  multiplicity: \*  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: True |
| maxDLDataVolume | An attribute specifies the maximum DL PDCP data volume supported by the network slice instance (performance measurement definition see in TS 28.552[69]). The unit is MByte/day. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| maxULDataVolume | An attribute specifies the maximum UL PDCP data volume supported by the network slice instance (performance measurement definition see in TS 28.552[69]). The unit is MByte/day. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| serviceType | An attribute specifies the standardized network slice type.  allowedValues: eMBB, URLLC, MIoT, V2X. | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: True |
| epApplicationRef | This parameter specifies a list of application level EPs (i.e. EP\_N3 or EP\_NgU or EP\_F1U) associated with the logical transport interface. | type: DN  multiplicity: \*  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: False |
| epTransportRef | This parameter specifies a list of transport level EPs associated with the application level EP (i.e. EP\_N3 or EP\_NgU) or network slice subnet. | type: DN  multiplicity: \*  isOrdered: N/A  isUnique: True  defaultValue: None  isNullable: True |
| sliceSimultaneousUse | This attribute describes whether a network slice can be simultaneously used by a device together with other network slices and if so, with which other classes of network slices.  allowedValues: “0”, “1”, “2”, “3”, “4”.  “0”: Can be used with any network slice  “1”: Can be used with network slices with same SST value  “2”: Can be used with any network slice with same SD value  “3”: Cannot be used with another network slice  “4”: Cannot be used by a UE in a specific location | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| energyEfficiency | An attribute which describes the energy efficiency, i.e. the ratio between the performance and the energy consumption (EC) when assessed during the same time frame, see clause 3.4.7 of NG.116 [50]. | type: EnergyEfficiency  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| EnergyEfficiency.performance | Depending on the sST value, EnergyEfficiency.performance will be  - eMBBEEPerfReq  or  - uRLLCEEPerfReq  or  - mIoTEEPerfReq  allowedValues:  - eMBBEEPerfReq identifies the requirement in terms of energy efficiency, i.e. the performance per consumed Joule, where performance can take the following forms:  - number of bits (Integer) (see TS 28.554 [27] clause 6.7.2.2).  - uRLLCEEPerfReq identifies the requirement in terms of energy efficiency, i.e. the performance per consumed Joule, where performance can take the following forms:  - latency in 0.1ms (Integer) (see TS 28.554 [27] clause 6.7.2.3).  - mIoTEEPerfReq identifies the requirement in terms of energy efficiency, i.e. the performance per consumed Joule, where performance can take the following forms:  - maximum number of registered subscribers (Integer) (see TS 28.554 [27] clause 6.7.2.4.1),  - mean number of active UEs (Integer) (see TS 28.554 [27] clause 6.7.2.4.2).  See NOTE 3. | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: False  isNullable: False |
| topSliceSubnetProfile.energyEfficiency | An attribute which describes the energy efficiency through all domains of the network slice, i.e. the ratio between the performance and the energy consumption (EC) when assessed during the same time frame, see clause 3.4.7 of NG.116 [50]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| CNSliceSubnetProfile. energyEfficiency | An attribute which describes the energy efficiency through CN domain of the network slice, i.e. the ratio between the performance and the energy consumption (EC) when assessed during the same time frame, see clause 3.4.7 of NG.116 [50]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| RANSliceSubnetProfile. energyEfficiency | An attribute which describes the energy efficiency through RAN domain of the network slice, i.e. the ratio between the performance and the energy consumption (EC) when assessed during the same time frame, see clause 3.4.7 of NG.116 [50]. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  allowedValues: N/A  isNullable: False |
| NOTE 1: There is no direct relationship between localAddress/remoteAddress in EP\_RP and ipAddress in EP\_transport. While the localAddress/remoteAddress in EP\_RP could be exchanged as part of signalling between GTP-u tunnel end points, ipAddress in EP\_transport is used for transport routing.  NOTE 2: void  NOTE 3: energy efficiency requirement for V2X is not part of the current document. | | |

|  |
| --- |
| **End of 4th Change** |

|  |
| --- |
| **Start of 5th Change** |

## D.4.3 OpenAPI document "nrNrm.yaml"

openapi: 3.0.1

info:

title: NR NRM

version: 17.3.0

description: >-

OAS 3.0.1 specification of the NR NRM

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externalDocs:

description: 3GPP TS 28.541; 5G NRM, NR NRM

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

paths: {}

components:

schemas:

#-------- Definition of types-----------------------------------------------------

GnbId:

type: string

GnbIdLength:

type: integer

minimum: 22

maximum: 32

GnbName:

type: string

maxLength: 150

GnbDuId:

type: number

minimum: 0

maximum: 68719476735

GnbCuUpId:

type: number

minimum: 0

maximum: 68719476735

Sst:

type: integer

maximum: 255

Snssai:

type: object

properties:

sst:

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

sd:

type: string

SnssaiList:

type: array

items:

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

Mnc:

type: string

pattern: '[0-9]{3}|[0-9]{2}'

PlmnId:

type: object

properties:

mcc:

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

mnc:

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

PlmnIdList:

type: array

items:

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

PlmnInfo:

type: object

properties:

plmnId":

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

snssai:

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

PlmnInfoList:

type: array

items:

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

GGnbId:

type: string

pattern: '^[0-9]{3}[0-9]{2,3}-(22|23|24|25|26|27|28|29|30|31|32)-[0-9]{1,10}'

GEnbId:

type: string

pattern: '^[0-9]{3}[0-9]{2,3}-(18|20|21|22)-[0-9]{1,7}'

GGnbIdList:

type: array

items:

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

GEnbIdList:

type: array

items:

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

NrPci:

type: integer

maximum: 503

NrTac:

type: integer

maximum: 16777215

Tai:

type: object

properties:

plmnId:

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

nrTac:

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

BackhaulAddress:

type: object

properties:

gnbId:

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

tai:

$ref: "#/components/schemas/Tai"

MappingSetIDBackhaulAddress:

type: object

properties:

setID:

type: integer

backhaulAddress:

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

IntraRatEsActivationOriginalCellLoadParameters:

type: object

properties:

loadThreshold:

type: integer

timeDuration:

type: integer

IntraRatEsActivationCandidateCellsLoadParameters:

type: object

properties:

loadThreshold:

type: integer

timeDuration:

type: integer

IntraRatEsDeactivationCandidateCellsLoadParameters:

type: object

properties:

loadThreshold:

type: integer

timeDuration:

type: integer

EsNotAllowedTimePeriod:

type: object

properties:

startTimeandendTime:

type: string

periodOfDay:

type: string

daysOfWeekList:

type: string

listoftimeperiods:

type: string

InterRatEsActivationOriginalCellParameters:

type: object

properties:

loadThreshold:

type: integer

timeDuration:

type: integer

InterRatEsActivationCandidateCellParameters:

type: object

properties:

loadThreshold:

type: integer

timeDuration:

type: integer

InterRatEsDeactivationCandidateCellParameters:

type: object

properties:

loadThreshold:

type: integer

timeDuration:

type: integer

UeAccProbilityDist:

type: object

properties:

targetProbability:

type: integer

numberofpreamblessent:

type: integer

UeAccDelayProbilityDist:

type: object

properties:

targetProbability:

type: integer

accessdelay:

type: integer

NRPciList:

type: object

properties:

NRPci:

type: integer

CSonPciList:

type: object

properties:

NRPci:

type: integer

MaximumDeviationHoTrigger:

type: integer

minimum: -20

maximum: 20

MinimumTimeBetweenHoTriggerChange:

type: integer

minimum: 0

maximum: 604800

TstoreUEcntxt:

type: integer

minimum: 0

maximum: 1023

CellState:

type: string

enum:

- IDLE

- INACTIVE

- ACTIVE

CyclicPrefix:

type: string

enum:

- '15'

- '30'

- '60'

- '120'

TxDirection:

type: string

enum:

- DL

- UL

- DL and UL

BwpContext:

type: string

enum:

- DL

- UL

- SUL

IsInitialBwp:

type: string

enum:

- INITIAL

- OTHER

- SUL

QuotaType:

type: string

enum:

- STRICT

- FLOAT

IsESCoveredBy:

type: string

enum:

- NO

- PARTIAL

- FULL

RrmPolicyMember:

type: object

properties:

plmnId:

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

snssai:

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

RrmPolicyMemberList:

type: array

items:

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

AddressWithVlan:

type: object

properties:

ipv4Address:

$ref: 'genericNrm.yaml#/components/schemas/Ipv4Addr'

ipv6Address:

$ref: 'genericNrm.yaml#/components/schemas/Ipv6Addr'

vlanId:

type: integer

minimum: 0

maximum: 4096

LocalAddress:

type: object

properties:

addressWithVlan:

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

port:

type: integer

minimum: 0

maximum: 65535

RemoteAddress:

type: object

properties:

ipv4Address:

$ref: 'genericNrm.yaml#/components/schemas/Ipv4Addr'

ipv6Address:

$ref: 'genericNrm.yaml#/components/schemas/Ipv6Addr'

CellIndividualOffset:

type: object

properties:

rsrpOffsetSSB:

type: integer

rsrqOffsetSSB:

type: integer

sinrOffsetSSB:

type: integer

rsrpOffsetCSI-RS:

type: integer

rsrqOffsetCSI-RS:

type: integer

sinrOffsetCSI-RS:

type: integer

QOffsetRange:

type: integer

enum:

- -24

- -22

- -20

- -18

- -16

- -14

- -12

- -10

- -8

- -6

- -5

- -4

- -3

- -2

- -1

- 0

- 24

- 22

- 20

- 18

- 16

- 14

- 12

- 10

- 8

- 6

- 5

- 4

- 3

- 2

- 1

QOffsetRangeList:

type: object

properties:

rsrpOffsetSSB:

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

rsrqOffsetSSB:

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

sinrOffsetSSB:

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

rsrpOffsetCSI-RS:

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

rsrqOffsetCSI-RS:

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

sinrOffsetCSI-RS:

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

QOffsetFreq:

type: number

TReselectionNRSf:

type: integer

enum:

- 25

- 50

- 75

- 100

SsbPeriodicity:

type: integer

enum:

- 5

- 10

- 20

- 40

- 80

- 160

SsbDuration:

type: integer

enum:

- 1

- 2

- 3

- 4

- 5

SsbSubCarrierSpacing:

type: integer

enum:

- 15

- 30

- 120

- 240

CoverageShape:

type: integer

maximum: 65535

DigitalTilt:

type: integer

minimum: -900

maximum: 900

DigitalAzimuth:

type: integer

minimum: -1800

maximum: 1800

RSSetId:

type: integer

maximum: 4194303

RSSetType:

type: string

enum:

- RS1

- RS2

FrequencyDomainPara:

type: object

properties:

rimRSSubcarrierSpacing:

type: integer

rIMRSBandwidth:

type: integer

nrofGlobalRIMRSFrequencyCandidates:

type: integer

rimRSCommonCarrierReferencePoint:

type: integer

rimRSStartingFrequencyOffsetIdList:

type: array

items:

type: integer

SequenceDomainPara:

type: object

properties:

nrofRIMRSSequenceCandidatesofRS1:

type: integer

rimRSScrambleIdListofRS1:

type: array

items:

type: integer

nrofRIMRSSequenceCandidatesofRS2:

type: integer

rimRSScrambleIdListofRS2:

type: array

items:

type: integer

enableEnoughNotEnoughIndication:

type: string

enum:

- ENABLE

- DISABLE

RIMRSScrambleTimerMultiplier:

type: integer

RIMRSScrambleTimerOffset:

type: integer

TimeDomainPara:

type: object

properties:

dlULSwitchingPeriod1:

type: string

enum:

- MS0P5

- MS0P625

- MS1

- MS1P25

- MS2

- MS2P5

- MS3

- MS4

- MS5

- MS10

- MS20

symbolOffsetOfReferencePoint1:

type: integer

dlULSwitchingPeriod2:

type: string

enum:

- MS0P5

- MS0P625

- MS1

- MS1P25

- MS2

- MS2P5

- MS3

- MS4

- MS5

- MS10

- MS20

symbolOffsetOfReferencePoint2:

type: integer

totalnrofSetIdofRS1:

type: integer

totalnrofSetIdofRS2:

type: integer

nrofConsecutiveRIMRS1:

type: integer

nrofConsecutiveRIMRS2:

type: integer

consecutiveRIMRS1List:

type: array

items:

type: integer

consecutiveRIMRS2List:

type: array

items:

type: integer

enablenearfarIndicationRS1:

type: string

enum:

- ENABLE

- DISABLE

enablenearfarIndicationRS2:

type: string

enum:

- ENABLE

- DISABLE

RimRSReportInfo:

type: object

properties:

detectedSetID:

type: integer

propagationDelay:

type: integer

functionalityOfRIMRS:

type: string

enum:

- RS1

- RS2

- RS1forEnoughMitigation

- RS1forNotEnoughMitigation

RimRSReportConf:

type: object

properties:

reportIndicator:

type: string

enum:

- ENABLE

- DISABLE

reportInterval:

type: integer

nrofRIMRSReportInfo:

type: integer

maxPropagationDelay:

type: integer

rimRSReportInfoList:

type: array

items:

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

TceMappingInfo:

type: object

properties:

TceIPAddress:

oneOf:

- $ref: 'genericNrm.yaml#/components/schemas/Ipv4Addr'

- $ref: 'genericNrm.yaml#/components/schemas/Ipv6Addr'

TceID:

type: integer

PlmnTarget:

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

TceMappingInfoList:

type: array

items:

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

#-------- Definition of abstract IOCs --------------------------------------------

RrmPolicy\_-Attr:

type: object

properties:

resourceType:

type: string

rRMPolicyMemberList:

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

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

SubNetwork-Single:

allOf:

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

- type: object

properties:

attributes:

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

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

- type: object

properties:

SubNetwork:

$ref: '#/components/schemas/SubNetwork-Multiple'

ManagedElement:

$ref: '#/components/schemas/ManagedElement-Multiple'

NRFrequency:

$ref: '#/components/schemas/NRFrequency-Multiple'

ExternalGnbCuCpFunction:

$ref: '#/components/schemas/ExternalGnbCuCpFunction-Multiple'

ExternalENBFunction:

$ref: '#/components/schemas/ExternalENBFunction-Multiple'

EUtranFrequency:

$ref: '#/components/schemas/EUtranFrequency-Multiple'

DESManagementFunction:

$ref: '#/components/schemas/DESManagementFunction-Single'

DRACHOptimizationFunction:

$ref: '#/components/schemas/DRACHOptimizationFunction-Single'

DMROFunction:

$ref: '#/components/schemas/DMROFunction-Single'

DPCIConfigurationFunction:

$ref: '#/components/schemas/DPCIConfigurationFunction-Single'

CPCIConfigurationFunction:

$ref: '#/components/schemas/CPCIConfigurationFunction-Single'

CESManagementFunction:

$ref: '#/components/schemas/CESManagementFunction-Single'

Configurable5QISet:

$ref: '5gcNrm.yaml#/components/schemas/Configurable5QISet-Multiple'

RimRSGlobal:

$ref: '#/components/schemas/RimRSGlobal-Single'

Dynamic5QISet:

$ref: '5gcNrm.yaml#/components/schemas/Dynamic5QISet-Multiple'

ManagedElement-Single:

allOf:

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

- type: object

properties:

attributes:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedElement-ncO'

- type: object

properties:

GnbDuFunction:

$ref: '#/components/schemas/GnbDuFunction-Multiple'

GnbCuUpFunction:

$ref: '#/components/schemas/GnbCuUpFunction-Multiple'

GnbCuCpFunction:

$ref: '#/components/schemas/GnbCuCpFunction-Multiple'

DESManagementFunction:

$ref: '#/components/schemas/DESManagementFunction-Single'

DRACHOptimizationFunction:

$ref: '#/components/schemas/DRACHOptimizationFunction-Single'

DMROFunction:

$ref: '#/components/schemas/DMROFunction-Single'

DPCIConfigurationFunction:

$ref: '#/components/schemas/DPCIConfigurationFunction-Single'

CPCIConfigurationFunction:

$ref: '#/components/schemas/CPCIConfigurationFunction-Single'

CESManagementFunction:

$ref: '#/components/schemas/CESManagementFunction-Single'

Configurable5QISet:

$ref: '5gcNrm.yaml#/components/schemas/Configurable5QISet-Multiple'

Dynamic5QISet:

$ref: '5gcNrm.yaml#/components/schemas/Dynamic5QISet-Multiple'

GnbDuFunction-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

gnbDuId:

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

gnbDuName:

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

gnbId:

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

gnbIdLength:

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

rimRSReportConf:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

RRMPolicyRatio:

$ref: '#/components/schemas/RRMPolicyRatio-Multiple'

NrCellDu:

$ref: '#/components/schemas/NrCellDu-Multiple'

Bwp-Multiple:

$ref: '#/components/schemas/Bwp-Multiple'

NrSectorCarrier-Multiple:

$ref: '#/components/schemas/NrSectorCarrier-Multiple'

EP\_F1C:

$ref: '#/components/schemas/EP\_F1C-Single'

EP\_F1U:

$ref: '#/components/schemas/EP\_F1U-Multiple'

DRACHOptimizationFunction:

$ref: '#/components/schemas/DRACHOptimizationFunction-Single'

GnbCuUpFunction-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

gnbId:

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

gnbIdLength:

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

gnbCuUpId:

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

plmnInfoList:

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

configurable5QISetRef:

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

dynamic5QISetRef:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

RRMPolicyRatio:

$ref: '#/components/schemas/RRMPolicyRatio-Multiple'

EP\_E1:

$ref: '#/components/schemas/EP\_E1-Single'

EP\_XnU:

$ref: '#/components/schemas/EP\_XnU-Multiple'

EP\_F1U:

$ref: '#/components/schemas/EP\_F1U-Multiple'

EP\_NgU:

$ref: '#/components/schemas/EP\_NgU-Multiple'

EP\_X2U:

$ref: '#/components/schemas/EP\_X2U-Multiple'

EP\_S1U:

$ref: '#/components/schemas/EP\_S1U-Multiple'

GnbCuCpFunction-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

gnbId:

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

gnbIdLength:

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

gnbCuName:

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

plmnId:

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

x2BlackList:

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

xnBlackList:

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

x2WhiteList:

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

xnWhiteList:

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

x2XnHOBlackList:

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

mappingSetIDBackhaulAddress:

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

tceMappingInfoList:

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

configurable5QISetRef:

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

dynamic5QISetRef:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

RRMPolicyRatio:

$ref: '#/components/schemas/RRMPolicyRatio-Multiple'

NrCellCu:

$ref: '#/components/schemas/NrCellCu-Multiple'

EP\_XnC:

$ref: '#/components/schemas/EP\_XnC-Multiple'

EP\_E1:

$ref: '#/components/schemas/EP\_E1-Multiple'

EP\_F1C:

$ref: '#/components/schemas/EP\_F1C-Multiple'

EP\_NgC:

$ref: '#/components/schemas/EP\_NgC-Multiple'

EP\_X2C:

$ref: '#/components/schemas/EP\_X2C-Multiple'

DANRManagementFunction:

$ref: '#/components/schemas/DANRManagementFunction-Single'

DESManagementFunction:

$ref: '#/components/schemas/DESManagementFunction-Single'

DMROFunction:

$ref: '#/components/schemas/DMROFunction-Single'

NrCellCu-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

cellLocalId:

type: integer

plmnInfoList:

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

nRFrequencyRef:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

RRMPolicyRatio:

$ref: '#/components/schemas/RRMPolicyRatio-Multiple'

NRCellRelation:

$ref: '#/components/schemas/NRCellRelation-Multiple'

EUtranCellRelation:

$ref: '#/components/schemas/EUtranCellRelation-Multiple'

NRFreqRelation:

$ref: '#/components/schemas/NRFreqRelation-Multiple'

EUtranFreqRelation:

$ref: '#/components/schemas/EUtranFreqRelation-Multiple'

DESManagementFunction:

$ref: '#/components/schemas/DESManagementFunction-Single'

DMROFunction:

$ref: '#/components/schemas/DMROFunction-Single'

CESManagementFunction:

$ref: '#/components/schemas/CESManagementFunction-Single'

DPCIConfigurationFunction:

$ref: '#/components/schemas/DPCIConfigurationFunction-Single'

NrCellDu-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

administrativeState:

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

operationalState:

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

cellLocalId:

type: integer

cellState:

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

plmnInfoList:

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

nrPci:

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

nrTac:

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

arfcnDL:

type: integer

arfcnUL:

type: integer

arfcnSUL:

type: integer

bSChannelBwDL:

type: integer

bSChannelBwUL:

type: integer

bSChannelBwSUL:

type: integer

ssbFrequency:

type: integer

minimum: 0

maximum: 3279165

ssbPeriodicity:

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

ssbSubCarrierSpacing:

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

ssbOffset:

type: integer

minimum: 0

maximum: 159

ssbDuration:

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

nrSectorCarrierRef:

type: array

items:

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

bwpRef:

type: array

items:

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

nRFrequencyRef:

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

victimSetRef:

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

aggressorSetRef:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

RRMPolicyRatio:

$ref: '#/components/schemas/RRMPolicyRatio-Multiple'

CPCIConfigurationFunction:

$ref: '#/components/schemas/CPCIConfigurationFunction-Single'

DRACHOptimizationFunction:

$ref: '#/components/schemas/DRACHOptimizationFunction-Single'

NRFrequency-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

absoluteFrequencySSB:

type: integer

minimum: 0

maximum: 3279165

ssbSubCarrierSpacing:

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

multiFrequencyBandListNR:

type: integer

minimum: 1

maximum: 256

EUtranFrequency-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

earfcnDL:

type: integer

minimum: 0

maximum: 262143

multiBandInfoListEutra:

type: integer

minimum: 1

maximum: 256

NrSectorCarrier-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

txDirection:

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

configuredMaxTxPower:

type: integer

arfcnDL:

type: integer

arfcnUL:

type: integer

bSChannelBwDL:

type: integer

bSChannelBwUL:

type: integer

sectorEquipmentFunctionRef:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

CommonBeamformingFunction:

$ref: '#/components/schemas/CommonBeamformingFunction-Single'

Bwp-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

bwpContext:

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

isInitialBwp:

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

subCarrierSpacing:

type: integer

cyclicPrefix:

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

startRB:

type: integer

numberOfRBs:

type: integer

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

CommonBeamformingFunction-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- type: object

properties:

coverageShape:

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

digitalAzimuth:

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

digitalTilt:

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

- type: object

properties:

Beam:

$ref: '#/components/schemas/Beam-Multiple'

Beam-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- type: object

properties:

beamIndex:

type: integer

beamType:

type: string

enum:

- SSB-BEAM

beamAzimuth:

type: integer

minimum: -1800

maximum: 1800

beamTilt:

type: integer

minimum: -900

maximum: 900

beamHorizWidth:

type: integer

minimum: 0

maximum: 3599

beamVertWidth:

type: integer

minimum: 0

maximum: 1800

RRMPolicyRatio-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: '#/components/schemas/RrmPolicy\_-Attr'

- type: object

properties:

rRMPolicyMaxRatio:

type: integer

rRMPolicyMinRatio:

type: integer

rRMPolicyDedicatedRatio:

type: integer

NRCellRelation-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

nRTCI:

type: integer

cellIndividualOffset:

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

adjacentNRCellRef:

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

nRFrequencyRef:

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

isRemoveAllowed:

type: boolean

isHOAllowed:

type: boolean

isESCoveredBy:

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

isENDCAllowed:

type: boolean

isMLBAllowed:

type: boolean

EUtranCellRelation-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

adjacentEUtranCellRef:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

NRFreqRelation-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

offsetMO:

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

blackListEntry:

type: array

items:

type: integer

minimum: 0

maximum: 1007

blackListEntryIdleMode:

type: integer

cellReselectionPriority:

type: integer

cellReselectionSubPriority:

type: number

minimum: 0.2

maximum: 0.8

multipleOf: 0.2

pMax:

type: integer

minimum: -30

maximum: 33

qOffsetFreq:

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

qQualMin:

type: number

qRxLevMin:

type: integer

minimum: -140

maximum: -44

threshXHighP:

type: integer

minimum: 0

maximum: 62

threshXHighQ:

type: integer

minimum: 0

maximum: 31

threshXLowP:

type: integer

minimum: 0

maximum: 62

threshXLowQ:

type: integer

minimum: 0

maximum: 31

tReselectionNr:

type: integer

minimum: 0

maximum: 7

tReselectionNRSfHigh:

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

tReselectionNRSfMedium:

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

nRFrequencyRef:

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

EUtranFreqRelation-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

cellIndividualOffset:

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

blackListEntry:

type: array

items:

type: integer

minimum: 0

maximum: 1007

blackListEntryIdleMode:

type: integer

cellReselectionPriority:

type: integer

cellReselectionSubPriority:

type: number

minimum: 0.2

maximum: 0.8

multipleOf: 0.2

pMax:

type: integer

minimum: -30

maximum: 33

qOffsetFreq:

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

qQualMin:

type: number

qRxLevMin:

type: integer

minimum: -140

maximum: -44

threshXHighP:

type: integer

minimum: 0

maximum: 62

threshXHighQ:

type: integer

minimum: 0

maximum: 31

threshXLowP:

type: integer

minimum: 0

maximum: 62

threshXLowQ:

type: integer

minimum: 0

maximum: 31

tReselectionEutran:

type: integer

minimum: 0

maximum: 7

tReselectionNRSfHigh:

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

tReselectionNRSfMedium:

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

eUTranFrequencyRef:

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

DANRManagementFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

intrasystemANRManagementSwitch:

type: boolean

intersystemANRManagementSwitch:

type: boolean

DESManagementFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

desSwitch:

type: boolean

intraRatEsActivationOriginalCellLoadParameters:

$ref: "#/components/schemas/IntraRatEsActivationOriginalCellLoadParameters"

intraRatEsActivationCandidateCellsLoadParameters:

$ref: "#/components/schemas/IntraRatEsActivationCandidateCellsLoadParameters"

intraRatEsDeactivationCandidateCellsLoadParameters:

$ref: "#/components/schemas/IntraRatEsDeactivationCandidateCellsLoadParameters"

esNotAllowedTimePeriod:

$ref: "#/components/schemas/EsNotAllowedTimePeriod"

interRatEsActivationOriginalCellParameters:

$ref: "#/components/schemas/IntraRatEsActivationOriginalCellLoadParameters"

interRatEsActivationCandidateCellParameters:

$ref: "#/components/schemas/IntraRatEsActivationOriginalCellLoadParameters"

interRatEsDeactivationCandidateCellParameters:

$ref: "#/components/schemas/IntraRatEsActivationOriginalCellLoadParameters"

isProbingCapable:

type: string

enum:

- yes

- no

energySavingState:

type: string

enum:

- isNotEnergySaving

- isEnergySaving

DRACHOptimizationFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

drachOptimizationControl:

type: boolean

ueAccProbilityDist:

$ref: "#/components/schemas/UeAccProbilityDist"

ueAccDelayProbilityDist:

$ref: "#/components/schemas/UeAccDelayProbilityDist"

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

DMROFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

dmroControl:

type: boolean

maximumDeviationHoTrigger:

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

minimumTimeBetweenHoTriggerChange:

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

tstoreUEcntxt:

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

DPCIConfigurationFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

dPciConfigurationControl:

type: boolean

nRPciList:

$ref: "#/components/schemas/NRPciList"

CPCIConfigurationFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

cPciConfigurationControl:

type: boolean

cSonPciList:

$ref: "#/components/schemas/CSonPciList"

CESManagementFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

cesSwitch:

type: boolean

intraRatEsActivationOriginalCellLoadParameters:

$ref: "#/components/schemas/IntraRatEsActivationOriginalCellLoadParameters"

intraRatEsActivationCandidateCellsLoadParameters:

$ref: "#/components/schemas/IntraRatEsActivationCandidateCellsLoadParameters"

intraRatEsDeactivationCandidateCellsLoadParameters:

$ref: "#/components/schemas/IntraRatEsDeactivationCandidateCellsLoadParameters"

esNotAllowedTimePeriod:

$ref: "#/components/schemas/EsNotAllowedTimePeriod"

interRatEsActivationOriginalCellParameters:

$ref: "#/components/schemas/IntraRatEsActivationOriginalCellLoadParameters"

interRatEsActivationCandidateCellParameters:

$ref: "#/components/schemas/IntraRatEsActivationOriginalCellLoadParameters"

interRatEsDeactivationCandidateCellParameters:

$ref: "#/components/schemas/IntraRatEsActivationOriginalCellLoadParameters"

energySavingControl:

type: string

enum:

- toBeEnergySaving

- toBeNotEnergySaving

energySavingState:

type: string

enum:

- isNotEnergySaving

- isEnergySaving

RimRSGlobal-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

frequencyDomainPara:

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

sequenceDomainPara:

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

timeDomainPara:

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

RimRSSet:

$ref: '#/components/schemas/RimRSSet-Multiple'

RimRSSet-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

setId:

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

setType:

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

rimRSMonitoringStartTime:

type: string

rimRSMonitoringStopTime:

type: string

rimRSMonitoringWindowDuration:

type: integer

rimRSMonitoringWindowStartingOffset:

type: integer

rimRSMonitoringWindowPeriodicity:

type: integer

rimRSMonitoringOccasionInterval:

type: integer

rimRSMonitoringOccasionStartingOffset:

type: integer

nRCellDURefs:

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

ExternalGnbDuFunction-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

gnbId:

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

gnbIdLength:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

EP\_F1C:

$ref: '#/components/schemas/EP\_F1C-Multiple'

EP\_F1U:

$ref: '#/components/schemas/EP\_F1U-Multiple'

ExternalGnbCuUpFunction-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

gnbId:

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

gnbIdLength:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

EP\_E1:

$ref: '#/components/schemas/EP\_E1-Multiple'

EP\_F1U:

$ref: '#/components/schemas/EP\_F1U-Multiple'

EP\_XnU:

$ref: '#/components/schemas/EP\_XnU-Multiple'

ExternalGnbCuCpFunction-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: >-

genericNrm.yaml#/components/schemas/ManagedFunction-Attr

- type: object

properties:

gnbId:

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

gnbIdLength:

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

plmnId:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

ExternalNrCellCu:

$ref: '#/components/schemas/ExternalNrCellCu-Multiple'

EP\_XnC:

$ref: '#/components/schemas/EP\_XnC-Multiple'

EP\_E1:

$ref: '#/components/schemas/EP\_E1-Multiple'

EP\_F1C:

$ref: '#/components/schemas/EP\_F1C-Multiple'

ExternalNrCellCu-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

cellLocalId:

type: integer

nrPci:

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

plmnIdList:

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

nRFrequencyRef:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

ExternalENBFunction-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

eNBId:

type: integer

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

- type: object

properties:

ExternalEUTranCell:

$ref: '#/components/schemas/ExternalEUTranCell-Multiple'

ExternalEUTranCell-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

EUtranFrequencyRef:

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

- $ref: 'genericNrm.yaml#/components/schemas/ManagedFunction-ncO'

EP\_XnC-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

EP\_E1-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

EP\_F1C-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

EP\_NgC-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

EP\_X2C-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

EP\_XnU-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

EP\_F1U-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

epTransportRefs:

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

EP\_NgU-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

epTransportRefs:

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

EP\_X2U-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

EP\_S1U-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

- $ref: 'genericNrm.yaml#/components/schemas/EP\_RP-Attr'

- type: object

properties:

localAddress:

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

remoteAddress:

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

#-------- Definition of JSON arrays for name-contained IOCs ----------------------

SubNetwork-Multiple:

type: array

items:

$ref: '#/components/schemas/SubNetwork-Single'

ManagedElement-Multiple:

type: array

items:

$ref: '#/components/schemas/ManagedElement-Single'

GnbDuFunction-Multiple:

type: array

items:

$ref: '#/components/schemas/GnbDuFunction-Single'

GnbCuUpFunction-Multiple:

type: array

items:

$ref: '#/components/schemas/GnbCuUpFunction-Single'

GnbCuCpFunction-Multiple:

type: array

items:

$ref: '#/components/schemas/GnbCuCpFunction-Single'

NrCellDu-Multiple:

type: array

items:

$ref: '#/components/schemas/NrCellDu-Single'

NrCellCu-Multiple:

type: array

items:

$ref: '#/components/schemas/NrCellCu-Single'

NRFrequency-Multiple:

type: array

minItems: 1

items:

$ref: '#/components/schemas/NRFrequency-Single'

EUtranFrequency-Multiple:

type: array

minItems: 1

items:

$ref: '#/components/schemas/EUtranFrequency-Single'

NrSectorCarrier-Multiple:

type: array

items:

$ref: '#/components/schemas/NrSectorCarrier-Single'

Bwp-Multiple:

type: array

items:

$ref: '#/components/schemas/Bwp-Single'

Beam-Multiple:

type: array

items:

$ref: '#/components/schemas/Beam-Single'

RRMPolicyRatio-Multiple:

type: array

items:

$ref: '#/components/schemas/RRMPolicyRatio-Single'

NRCellRelation-Multiple:

type: array

items:

$ref: '#/components/schemas/NRCellRelation-Single'

EUtranCellRelation-Multiple:

type: array

items:

$ref: '#/components/schemas/EUtranCellRelation-Single'

NRFreqRelation-Multiple:

type: array

items:

$ref: '#/components/schemas/NRFreqRelation-Single'

EUtranFreqRelation-Multiple:

type: array

items:

$ref: '#/components/schemas/EUtranFreqRelation-Single'

RimRSSet-Multiple:

type: array

items:

$ref: '#/components/schemas/RimRSSet-Single'

ExternalGnbDuFunction-Multiple:

type: array

items:

$ref: '#/components/schemas/ExternalGnbDuFunction-Single'

ExternalGnbCuUpFunction-Multiple:

type: array

items:

$ref: '#/components/schemas/ExternalGnbCuUpFunction-Single'

ExternalGnbCuCpFunction-Multiple:

type: array

items:

$ref: '#/components/schemas/ExternalGnbCuCpFunction-Single'

ExternalNrCellCu-Multiple:

type: array

items:

$ref: '#/components/schemas/ExternalNrCellCu-Single'

ExternalENBFunction-Multiple:

type: array

items:

$ref: '#/components/schemas/ExternalENBFunction-Single'

ExternalEUTranCell-Multiple:

type: array

items:

$ref: '#/components/schemas/ExternalEUTranCell-Single'

EP\_E1-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_E1-Single'

EP\_XnC-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_XnC-Single'

EP\_F1C-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_F1C-Single'

EP\_NgC-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_NgC-Single'

EP\_X2C-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_X2C-Single'

EP\_XnU-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_XnU-Single'

EP\_F1U-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_F1U-Single'

EP\_NgU-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_NgU-Single'

EP\_X2U-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_X2U-Single'

EP\_S1U-Multiple:

type: array

items:

$ref: '#/components/schemas/EP\_S1U-Single'

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

resources-nrNrm:

oneOf:

- $ref: '#/components/schemas/SubNetwork-Single'

- $ref: '#/components/schemas/ManagedElement-Single'

- $ref: '#/components/schemas/GnbDuFunction-Single'

- $ref: '#/components/schemas/GnbCuUpFunction-Single'

- $ref: '#/components/schemas/GnbCuCpFunction-Single'

- $ref: '#/components/schemas/NrCellCu-Single'

- $ref: '#/components/schemas/NrCellDu-Single'

- $ref: '#/components/schemas/NRFrequency-Single'

- $ref: '#/components/schemas/EUtranFrequency-Single'

- $ref: '#/components/schemas/NrSectorCarrier-Single'

- $ref: '#/components/schemas/Bwp-Single'

- $ref: '#/components/schemas/CommonBeamformingFunction-Single'

- $ref: '#/components/schemas/Beam-Single'

- $ref: '#/components/schemas/RRMPolicyRatio-Single'

- $ref: '#/components/schemas/NRCellRelation-Single'

- $ref: '#/components/schemas/EUtranCellRelation-Single'

- $ref: '#/components/schemas/NRFreqRelation-Single'

- $ref: '#/components/schemas/EUtranFreqRelation-Single'

- $ref: '#/components/schemas/DANRManagementFunction-Single'

- $ref: '#/components/schemas/DESManagementFunction-Single'

- $ref: '#/components/schemas/DRACHOptimizationFunction-Single'

- $ref: '#/components/schemas/DMROFunction-Single'

- $ref: '#/components/schemas/DPCIConfigurationFunction-Single'

- $ref: '#/components/schemas/CPCIConfigurationFunction-Single'

- $ref: '#/components/schemas/CESManagementFunction-Single'

- $ref: '#/components/schemas/RimRSGlobal-Single'

- $ref: '#/components/schemas/RimRSSet-Single'

- $ref: '#/components/schemas/ExternalGnbDuFunction-Single'

- $ref: '#/components/schemas/ExternalGnbCuUpFunction-Single'

- $ref: '#/components/schemas/ExternalGnbCuCpFunction-Single'

- $ref: '#/components/schemas/ExternalNrCellCu-Single'

- $ref: '#/components/schemas/ExternalENBFunction-Single'

- $ref: '#/components/schemas/ExternalEUTranCell-Single'

- $ref: '#/components/schemas/EP\_XnC-Single'

- $ref: '#/components/schemas/EP\_E1-Single'

- $ref: '#/components/schemas/EP\_F1C-Single'

- $ref: '#/components/schemas/EP\_NgC-Single'

- $ref: '#/components/schemas/EP\_X2C-Single'

- $ref: '#/components/schemas/EP\_XnU-Single'

- $ref: '#/components/schemas/EP\_F1U-Single'

- $ref: '#/components/schemas/EP\_NgU-Single'

- $ref: '#/components/schemas/EP\_X2U-Single'

- $ref: '#/components/schemas/EP\_S1U-Single'

|  |
| --- |
| **End of 5th Change** |