**3GPP TSG-SA5 Meeting #142-e *S5-222527***

**e-meeting, 4 - 12 April 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **28.541** | **CR** | **-** | **rev** | **-** | **Current version:** | **17.6.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Draft CR Correct maximumDeviationHoTrigger for D-LBO | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eSON\_5G | | | | |  | ***Date:*** | | | 2022-03-25 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | During SA5#141, the attribute maximumDeviationHoTrigger was replaced by the pair maximumDeviationHoTriggerLow and maximumDeviationHoTriggerHigh. Due to a mistake, this change was not done in all instances in the specification.  Furthermore, this mistake has also resulted in a discrepancy between the YAML code in TS 28.541 and 3GPP Forge. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Replace definition of maximumDeviationHoTrigger in IOC DLBOFunction with two values, one lower limit and one upper limit, for D-LBO. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Different definitions for maximumDeviationHoTrigger for D-MRO and D-LBO making it impossible for SON functions for D-MRO and D-LBO to interoperate.  Discrepancy between the YAML code in TS 28.541 and 3GPP Forge. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.3.69.2, D.4.3, E.5.37 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | eForge branches:   * <https://forge.3gpp.org/rep/sa5/MnS/-/tree/28.541_Rel17_draftCR_S5-222527_Correct_maximumDeviationHoTrigger_for_D-LBO_YANG> * <https://forge.3gpp.org/rep/sa5/MnS/-/tree/28.541_Rel17_draftCR_S5-222527_Correct_maximumDeviationHoTrigger_for_D-LBO_YAML> | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

|  |
| --- |
| **First change** |

#### 4.3.69.2 Attributes

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
| dlboControl | M | T | T | F | T |
| maximumDeviationHoTriggerLow | M | T | T | F | T |
| maximumDeviationHoTriggerHigh | M | T | T | F | T |
| minimumTimeBetweenHoTriggerChange | M | T | T | F | T |

|  |
| --- |
| **Next change** |

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

openapi: 3.0.1

info:

title: NR NRM

version: 17.6.0

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: 'comDefs.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'

SnpnId:

type: object

properties:

mcc:

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

mnc:

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

nid:

type: string

SnpnInfo:

type: object

properties:

snpnId:

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

snssai:

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

cagId:

type: string

nid:

type: string

NpnIdentity:

type: object

properties:

plmnId:

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

cagidList:

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

nidList:

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

NpnIdentityList:

type: array

items:

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

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'

TaiList:

type: array

items:

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

NrtacRange:

type: object

properties:

nRTACstart:

type: string

nRTACend:

type: string

nRTACpattern:

type: string

TaiRange:

type: object

properties:

plmnId:

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

nRTACRangeList:

type: array

items:

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

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

MaximumDeviationHoTriggerLow:

type: integer

minimum: -20

maximum: 20

MaximumDeviationHoTriggerHigh:

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: 'comDefs.yaml#/components/schemas/Ipv4Addr'

ipv6Address:

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

ipv6Address:

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

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

TceID:

type: integer

PlmnTarget:

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

TceMappingInfoList:

type: array

items:

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

ResourceType:

type: string

enum:

- PRB

- PRB\_UL

- PRB\_DL

- RRC

- DRB

ParameterRange:

type: object

properties:

maxValue:

type: integer

minValue:

type: integer

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

RrmPolicy\_-Attr:

type: object

properties:

resourceType:

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

rRMPolicyMemberList:

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

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

SubNetwork-Single:

allOf:

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

- 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'

DLBOFunction:

$ref: '#/components/schemas/DLBOFunction-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'

CCOFunction:

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

ManagedElement-Single:

allOf:

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

- 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'

DLBOFunction:

$ref: '#/components/schemas/DLBOFunction-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'

- 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'

OperatorDu-Single:

allOf:

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

- type: object

properties:

gnbId:

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

gnbIdLength:

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

- type: object

properties:

EP\_F1C:

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

EP\_F1U:

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

GnbCuUpFunction-Single:

allOf:

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

- 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: 'comDefs.yaml#/components/schemas/Dn'

dynamic5QISetRef:

$ref: 'comDefs.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'

- 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: 'comDefs.yaml#/components/schemas/Dn'

dynamic5QISetRef:

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

dCHOControl:

type: boolean

dDAPSHOControl:

type: boolean

- $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'

DLBOFunction:

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

NrCellCu-Single:

allOf:

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

- 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: 'comDefs.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'

DLBOFunction:

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

CESManagementFunction:

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

DPCIConfigurationFunction:

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

NrCellDu-Single:

allOf:

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

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

administrativeState:

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

operationalState:

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

cellLocalId:

type: integer

cellState:

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

plmnInfoList:

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

npnIdentityList:

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

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: 'comDefs.yaml#/components/schemas/Dn'

bwpRef:

type: array

items:

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

rimRSMonitoringStartTime:

type: string

rimRSMonitoringStopTime:

type: string

rimRSMonitoringWindowDuration:

type: integer

rimRSMonitoringWindowStartingOffset:

type: integer

rimRSMonitoringWindowPeriodicity:

type: integer

rimRSMonitoringOccasionInterval:

type: integer

rimRSMonitoringOccasionStartingOffset:

type: integer

nRFrequencyRef:

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

victimSetRef:

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

aggressorSetRef:

$ref: 'comDefs.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'

NrOperatorCellDu-Single:

allOf:

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

- type: object

properties:

cellLocalId:

type: integer

administrativeState:

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

plmnInfoList:

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

nrTac:

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

NRFrequency-Single:

allOf:

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

- 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'

- 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'

- 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: 'comDefs.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'

- 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'

- 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'

- 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'

- 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'

- type: object

properties:

attributes:

type: object

properties:

nRTCI:

type: integer

cellIndividualOffset:

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

adjacentNRCellRef:

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

nRFreqRelationRef:

$ref: 'comDefs.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'

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

adjacentEUtranCellRef:

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

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

NRFreqRelation-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

offsetMO:

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

blockListEntry:

type: array

items:

type: integer

minimum: 0

maximum: 1007

blockListEntryIdleMode:

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: 'comDefs.yaml#/components/schemas/Dn'

EUtranFreqRelation-Single:

allOf:

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

- 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: 'comDefs.yaml#/components/schemas/Dn'

DANRManagementFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

intrasystemANRManagementSwitch:

type: boolean

intersystemANRManagementSwitch:

type: boolean

DESManagementFunction-Single:

allOf:

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

- 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'

- 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'

- type: object

properties:

attributes:

type: object

properties:

dmroControl:

type: boolean

maximumDeviationHoTriggerLow:

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

maximumDeviationHoTriggerHigh:

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

minimumTimeBetweenHoTriggerChange:

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

tstoreUEcntxt:

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

DLBOFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

dlboControl:

type: boolean

maximumDeviationHoTriggerLow:

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

maximumDeviationHoTriggerHigh:

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

minimumTimeBetweenHoTriggerChange:

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

DPCIConfigurationFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

dPciConfigurationControl:

type: boolean

nRPciList:

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

CPCIConfigurationFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

cPciConfigurationControl:

type: boolean

cSonPciList:

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

CESManagementFunction-Single:

allOf:

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

- 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'

- 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'

- type: object

properties:

attributes:

type: object

properties:

setId:

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

setType:

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

nRCellDURefs:

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

ExternalGnbDuFunction-Single:

allOf:

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

- 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'

- 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'

- 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'

- 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: 'comDefs.yaml#/components/schemas/Dn'

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

ExternalENBFunction-Single:

allOf:

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

- 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'

- type: object

properties:

attributes:

allOf:

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

- type: object

properties:

EUtranFrequencyRef:

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

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

EP\_XnC-Single:

allOf:

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

- 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'

- 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'

- 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'

- 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'

- 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'

- 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'

- 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: 'comDefs.yaml#/components/schemas/DnList'

EP\_NgU-Single:

allOf:

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

- 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: 'comDefs.yaml#/components/schemas/DnList'

EP\_X2U-Single:

allOf:

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

- 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'

- 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'

CCOFunction-Single:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

cCOControl:

type: boolean

cCOWeakCoverageParameters:

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

cCOPilotPollutionParameters:

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

cCOOvershootCoverageParameters-Single:

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

CCOParameters-Attr:

allOf:

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

- type: object

properties:

attributes:

type: object

properties:

coverageShapeList:

type: integer

downlinkTransmitPowerRange:

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

antennaTiltRange:

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

antennaAzimuthRange:

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

digitalTiltRange:

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

digitalAzimuthRange:

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

CCOWeakCoverageParameters-Single:

allOf:

- $ref: '#/components/schemas/CCOParameters-Attr'

- type: object

CCOPilotPollutionParameters-Single:

allOf:

- $ref: '#/components/schemas/CCOParameters-Attr'

- type: object

CCOOvershootCoverageParameters-Single:

allOf:

- $ref: '#/components/schemas/CCOParameters-Attr'

- type: object

#-------- 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'

OperatorDu-Multiple:

type: array

items:

$ref: '#/components/schemas/OperatorDu-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'

NrOperatorCellDu-Multiple:

type: array

items:

$ref: '#/components/schemas/NrOperatorCellDu-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/OperatorDu-Single'

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

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

- $ref: '#/components/schemas/NrOperatorCellDu-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/DLBOFunction-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'

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

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

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

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

|  |
| --- |
| **Next change** |

## E.5.37 module \_3gpp-nr-nrm-dlbofunction.yang

<CODE BEGINS>

module \_3gpp-nr-nrm-dlbofunction {

yang-version 1.1;

namespace "urn:3gpp:sa5:\_3gpp-nr-nrm-dlbofunction";

prefix "dlbof3gpp";

import \_3gpp-common-subnetwork { prefix subnet3gpp; }

import \_3gpp-common-top { prefix top3gpp; }

import \_3gpp-nr-nrm-gnbcucpfunction { prefix gnbcucp3gpp; }

import \_3gpp-common-managed-element { prefix me3gpp; }

import \_3gpp-nr-nrm-nrcellcu { prefix nrcellcu3gpp; }

organization "3GPP SA5";

contact "https://www.3gpp.org/DynaReport/TSG-WG--S5--officials.htm?Itemid=464";

description "Defines the YANG mapping of the DLBOFunction

Information Object Class (IOC) that is part of the NR Network Resource

Model (NRM).";

reference "3GPP TS 28.541 5G Network Resource Model (NRM)";

revision 2022-03-25 { reference "CR-XXXX"; }

revision 2021-10-22 { reference "CR-0577"; }

feature DLBOUnderGNBCUCPFunction {

description "The DLBOFunction shall be available under

GNBCUCPFunction";

}

feature DLBOUnderManagedElement {

description "The DLBOFunction shall be available under

ManagedElement";

}

feature DLBOUnderSubNetwork {

description "The DLBOFunction shall be available under

SubNetwork";

}

grouping DLBOFunctionGrp {

description "Represents the DLBOFunction IOC.";

leaf dlboControl {

description "This attribute determines whether the LBO function is

enabled or disabled.";

type boolean;

}

leaf maximumDeviationHoTriggerLow {

description "This parameter defines the maximum allowed lower

deviation of the Handover Trigger, from the default point of

operation.";

type int32 { range "-20..20"; }

units "0.5 dB";

}

leaf maximumDeviationHoTriggerHigh {

description "This parameter defines the maximum allowed upper

deviation of the Handover Trigger, from the default point of

operation.";

type int32 { range "-20..20"; }

units "0.5 dB";

}

leaf minimumTimeBetweenHoTriggerChange {

description "This parameter defines the minimum allowed time interval

between two Handover Trigger change performed by MRO. This is used

to control the stability and convergence of the algorithm.";

type int32 { range "0..604800"; }

units "1";

}

}

grouping DLBOFunctionSubtree {

list DLBOFunction {

description "This IOC contains attributes to support the D-SON function

of LBO.

In the case where multiple DLBO MOIs exist at different levels of the

containment tree, the DLBO MOI at the lower level overrides the DLBO

MOIs at higher level(s) of the same containment tree.";

reference "clause 7.1.2 in TS 28.313";

key id;

uses top3gpp:Top\_Grp;

container attributes {

uses DLBOFunctionGrp;

}

}

}

augment "/me3gpp:ManagedElement/gnbcucp3gpp:GNBCUCPFunction/"+

"nrcellcu3gpp:NRCellCU" {

if-feature DLBOUnderGNBCUCPFunction;

uses DLBOFunctionSubtree;

}

augment /me3gpp:ManagedElement {

if-feature DLBOUnderManagedElement;

uses DLBOFunctionSubtree;

}

augment /subnet3gpp:SubNetwork {

if-feature DLBOUnderSubNetwork;

uses DLBOFunctionSubtree;

}

}

<CODE ENDS>

|  |
| --- |
| **End of changes** |