**3GPP TSG-SA5 Meeting #135-e *S5-211353***

**Online, , 25th Jan 2021 - 3rd Feb 2021**

|  |
| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **28.541** | **CR** | **0454** | **rev** | **-** | **Current version:** | **17.1.0** |  |
|  |
| *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 | **X** |

|  |
| --- |
|  |
| ***Title:***  | Correct YANG errors |
|  |  |
| ***Source to WG:*** | Ericsson Hungary Ltd |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | eNRM |  | ***Date:*** | 2021-01-27 |
|  |  |  |  |  |
| ***Category:*** | **A** |  | ***Release:*** | Rel-17 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | Correction of incorrect YANG mapping from stage 2 to stage3 |
|  |  |
| ***Summary of change:*** | Only Stage 3 YANG changes:Corrected trivial YANG errors, formatting errors.  |
|  |  |
| ***Consequences if not approved:*** | Invalid YANG code. |
|  |  |
| ***Clauses affected:*** | E.5.19, E.5.20, E.5.21, E.5.30, E.5.32, H.5.13 |
|  |  |
|  | **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:*** | https://forge.3gpp.org/rep/sa5/MnS/tree/Rel17\_YANG\_extracted\_from\_28623-g60\_and\_28541-h10\_corrected\_by\_balazs |
|  |  |
| ***This CR's revision history:*** |  |

***First change***

## E.5.19 module \_3gpp-nr-nrm-nrcellcu.yang

module \_3gpp-nr-nrm-nrcellcu {

 yang-version 1.1;

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

 prefix "nrcellcu3gpp";

 import \_3gpp-common-yang-types { prefix types3gpp; }

 import \_3gpp-common-managed-function { prefix mf3gpp; }

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

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

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

 import \_3gpp-5g-common-yang-types { prefix types5g3gpp; }

 organization "3GPP SA5";

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

 description "Defines the YANG mapping of the NRCellCU 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 2021-01-25 { reference CR-0454 ; }

 revision 2020-11-25 { reference CR-0386 ; }

 revision 2020-11-05 { reference CR-0412 ; }

 revision 2020-10-02 { reference CR-0384 ; }

 revision 2020-05-08 { reference S5-203316 ; }

 revision 2020-02-14 { reference S5-20XXXX ; }

 revision 2019-10-28 { reference S5-193518 ; }

 revision 2019-06-17 { reference "Initial revision"; }

 feature DPCIConfigurationFunction {

 description "Class representing Distributed SON or Domain-Centralized SON

 function of PCI configuration feature";

 }

 feature DESManagementFunction {

 description "Class representing Distributed SON or Domain-Centralized SON

 Energy Saving feature";

 }

 feature DMROFunction {

 description "Class representing D-SON function of MRO feature";

 }

 feature CESManagementFunction {

 description "Class representing Cross Domain-Centralized SON Energy Saving

 feature";

 }

 grouping NRCellCUGrp {

 description "Represents the NRCellCU IOC.";

 reference "3GPP TS 28.541";

 uses mf3gpp:ManagedFunctionGrp;

 leaf cellLocalId {

 description "Identifies an NR cell of a gNB. Together with corresponding

 gNB ID it forms the NR Cell Identifier (NCI).";

 mandatory true;

 type int32 { range "0..16383"; }

 }

 list pLMNInfoList {

 description "The PLMNInfoList is a list of PLMNInfo data type. It defines

 which PLMNs that can be served by the NR cell, and which S-NSSAIs that

 can be supported by the NR cell for corresponding PLMN in case of

 network slicing feature is supported.";

 // Note: Whether the attribute pLMNId in the pLMNInfo can be writable

 // depends on the implementation.

 key "mcc mnc sd sst";

 min-elements 1;

 uses types5g3gpp:PLMNInfo;

 }

 leaf nRFrequencyRef {

 description "Reference to corresponding NRFrequency instance.";

 config false;

 type types3gpp:DistinguishedName;

 }

 }

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

 list NRCellCU {

 description "Represents the information required by CU that is

 responsible for the management of inter-cell mobility and neighbour

 relations via ANR.";

 reference "3GPP TS 28.541";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses NRCellCUGrp;

 }

 uses mf3gpp:ManagedFunctionContainedClasses;

 }

 }

}

## E.5.20 module \_3gpp-nr-nrm-nrcelldu.yang

module \_3gpp-nr-nrm-nrcelldu {

 yang-version 1.1;

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

 prefix "nrcelldu3gpp";

 import \_3gpp-common-yang-types { prefix types3gpp; }

 import \_3gpp-common-managed-function { prefix mf3gpp; }

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

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

 import \_3gpp-nr-nrm-gnbdufunction { prefix gnbdu3gpp; }

 import \_3gpp-nr-nrm-rrmpolicy { prefix nrrrmpolicy3gpp; }

 import \_3gpp-5g-common-yang-types { prefix types5g3gpp; }

 organization "3GPP SA5";

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

 description "Defines the YANG mapping of the NRCellDU 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 2021-01-25 { reference CR-0454 ; }

 revision 2020-11-25 { reference CR-0386 ; }

 revision 2020-11-05 { reference CR-0412 ; }

 revision 2020-10-02 { reference CR-0384 ; }

 revision 2020-05-08 { reference S5-203316 ; }

 revision 2020-02-14 { reference S5-20XXXX ; }

 revision 2019-10-28 { reference S5-193518 ; }

 revision 2019-09-03 { reference "Initial revision"; }

 feature DRACHOptimizationFunction {

 description "Class representing D-SON function of RACH optimization

 feature";

 }

 feature CPCIConfigurationFunction {

 description "Class representing Cross Domain-Centralized SON function of

 PCI configuration feature";

 }

 grouping NRCellDUGrp {

 description "Represents the NRCellDU IOC.";

 reference "3GPP TS 28.541";

 uses mf3gpp:ManagedFunctionGrp;

 uses nrrrmpolicy3gpp:RRMPolicy\_Grp;

 leaf cellLocalId {

 description "Identifies an NR cell of a gNB. Together with the

 corresponding gNB identifier in forms the NR Cell Identity (NCI).";

 reference "NCI in 3GPP TS 38.300";

 mandatory true;

 type int32 { range "0..16383"; }

 }

 leaf operationalState {

 description "Operational state of the NRCellDU instance. Indicates

 whether the resource is installed and partially or fully operable

 (ENABLED) or the resource is not installed or not operable

 (DISABLED).";

 config false;

 type types3gpp:OperationalState;

 }

 leaf administrativeState {

 description "Administrative state of the NRCellDU. Indicates the

 permission to use or prohibition against using the cell, imposed

 through the OAM services.";

 type types3gpp:AdministrativeState;

 default LOCKED;

 }

 leaf cellState {

 description "Cell state of the NRCellDU instance. Indicates whether the

 cell is not currently in use (IDLE), or currently in use but not

 configured to carry traffic (INACTIVE), or currently in use and is

 configured to carry traffic (ACTIVE).";

 config false;

 type types3gpp:CellState;

 }

 list pLMNInfoList {

 description "The PLMNInfoList is a list of PLMNInfo data type. It

 defines which PLMNs that can be served by the NR cell, and which

 S-NSSAIs that can be supported by the NR cell for corresponding PLMN

 in case of network slicing feature is supported. The plMNId of the

 first entry of the list is the PLMNId used to construct the nCGI for

 the NR cell.";

 key "mcc mnc sd sst";

 min-elements 1;

 ordered-by user;

 uses types5g3gpp:PLMNInfo;

 }

 leaf nRPCI {

 description "The Physical Cell Identity (PCI) of the NR cell.";

 reference "3GPP TS 36.211";

 mandatory true;

 type int32 { range "0..1007"; }

 }

 leaf nRTAC {

 description "The common 5GS Tracking Area Code for the PLMNs.";

 reference "3GPP TS 23.003, 3GPP TS 38.473";

 type types3gpp:Tac;

 }

 leaf arfcnDL {

 description "NR Absolute Radio Frequency Channel Number (NR-ARFCN) for

 downlink.";

 reference "3GPP TS 38.104";

 mandatory true;

 type int32;

 }

 leaf arfcnUL {

 description "NR Absolute Radio Frequency Channel Number (NR-ARFCN) for

 uplink.";

 reference "3GPP TS 38.104";

 type int32;

 }

 leaf arfcnSUL {

 description "NR Absolute Radio Frequency Channel Number (NR-ARFCN) for

 supplementary uplink.";

 reference "3GPP TS 38.104";

 type int32;

 }

 leaf bSChannelBwDL {

 description "Base station channel bandwidth for downlink.";

 reference "3GPP TS 38.104";

 type int32;

 units MHz;

 }

 leaf bSChannelBwUL {

 description "Base station channel bandwidth for uplink.";

 reference "3GPP TS 38.104";

 type int32;

 units MHz;

 }

 leaf bSChannelBwSUL {

 description "Base station channel bandwidth for supplementary uplink.";

 reference "3GPP TS 38.104";

 type int32;

 units MHz;

 }

 leaf ssbFrequency {

 description "Indicates cell defining SSB frequency domain position.

 Frequency (in terms of NR-ARFCN) of the cell defining SSB transmission.

 The frequency identifies the position of resource element RE=#0

 (subcarrier #0) of resource block RB#10 of the SS block. The frequency

 must be positioned on the NR global frequency raster, as defined in

 3GPP TS 38.101-1, and within bSChannelBwDL.";

 mandatory true;

 type int32 { range "0..3279165"; }

 }

 leaf ssbPeriodicity {

 description "Indicates cell defined SSB periodicity. The SSB periodicity

 is used for the rate matching purpose.";

 mandatory true;

 type int32 { range "5 | 10 | 20 | 40 | 80 | 160"; }

 units "subframes (ms)";

 }

 leaf ssbSubCarrierSpacing {

 description "Subcarrier spacing of SSB. Only the values 15 kHz or 30 kHz

 (< 6 GHz), 120 kHz or 240 kHz (> 6 GHz) are applicable.";

 reference "3GPP TS 38.211";

 mandatory true;

 type int32 { range "15 | 30 | 120 | 240"; }

 units kHz;

 }

 leaf ssbOffset {

 description "Indicates cell defining SSB time domain position. Defined

 as the offset of the measurement window, in which to receive SS/PBCH

 blocks, where allowed values depend on the ssbPeriodicity

 (ssbOffset < ssbPeriodicity).";

 mandatory true;

 type int32 { range "0..159"; }

 units "subframes (ms)";

 }

 leaf ssbDuration {

 description "Duration of the measurement window in which to receive

 SS/PBCH blocks.";

 reference "3GPP TS 38.213";

 mandatory true;

 type int32 { range "1..5"; }

 units "subframes (ms)";

 }

 leaf-list nRSectorCarrierRef {

 description "Reference to corresponding NRSectorCarrier instance.";

 min-elements 1;

 type types3gpp:DistinguishedName;

 }

 leaf-list bWPRef {

 description "Reference to corresponding BWP instance.";

 type types3gpp:DistinguishedName;

 }

 leaf-list nRFrequencyRef {

 description "Reference to corresponding NRFrequency instance.";

 type types3gpp:DistinguishedName;

 }

 }

 augment "/me3gpp:ManagedElement/gnbdu3gpp:GNBDUFunction" {

 list NRCellDU {

 description "Represents the information of a cell known by DU.";

 reference "3GPP TS 28.541";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses NRCellDUGrp;

 }

 uses mf3gpp:ManagedFunctionContainedClasses;

 }

 }

}

## E.5.21 module \_3gpp-nr-nrm-nrcellrelation@2019-10-28.yang

module \_3gpp-nr-nrm-nrcellrelation {

 yang-version 1.1;

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

 prefix "nrcellrel3gpp";

 import \_3gpp-common-yang-types { prefix types3gpp; }

 import \_3gpp-common-managed-function { prefix mf3gpp; }

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

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

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

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

 organization "3GPP SA5";

 description "Defines the YANG mapping of the NRCellRelation 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 2021-01-25 { reference CR-0454 ; }

 revision 2020-06-03 { reference S5-202333 ; }

 revision 2020-04-23 { reference CR0281 ; }

 revision 2019-10-28 { reference S5-193518 ; }

 revision 2019-08-30 {

 description "Initial revision";

 }

 typedef EnergySavingCoverage {

 type enumeration {

 enum FULL;

 enum NO;

 enum PARTIAL;

 }

 }

 grouping NRCellRelationGrp {

 description "Represents the NRCellRelation IOC.";

 reference "3GPP TS 28.541";

 leaf nRTCI {

 description "Target NR Cell Identifier. It consists of NR Cell

 Identifier (NCI) and Physical Cell Identifier of the target NR cell

 (nRPCI).";

 type uint64;

 }

 container cellIndividualOffset {

 description "A set of offset values for the neighbour cell. Used when

 UE is in connected mode. Defined for rsrpOffsetSSB, rsrqOffsetSSB,

 sinrOffsetSSB, rsrpOffsetCSI-RS, rsrqOffsetCSI-RS and

 sinrOffsetCSI-RS.";

 reference "cellIndividualOffset in MeasObjectNR in 3GPP TS 38.331";

 leaf rsrpOffsetSsb {

 description "Offset value of rsrpOffsetSSB.";

 default 0;

 type types3gpp:QOffsetRange;

 }

 leaf rsrqOffsetSsb{

 description "Offset value of rsrqOffsetSSB.";

 default 0;

 type types3gpp:QOffsetRange;

 }

 leaf sinrOffsetSsb {

 description "Offset value of sinrOffsetSSB.";

 default 0;

 type types3gpp:QOffsetRange;

 }

 leaf rsrpOffsetCsiRs{

 description "Offset value of rsrpOffsetCSI-RS.";

 default 0;

 type types3gpp:QOffsetRange;

 }

 leaf rsrqOffsetCsiRs {

 description "Offset value of rsrqOffsetCSI-RS.";

 default 0;

 type types3gpp:QOffsetRange;

 }

 leaf sinrOffsetCsiRs {

 description "Offset value of sinrOffsetCSI-RS.";

 default 0;

 type types3gpp:QOffsetRange;

 }

 }

 leaf nRFreqRelationRef {

 description "Reference to a corresponding NRFreqRelation instance.";

 mandatory true;

 type types3gpp:DistinguishedName;

 }

 leaf adjacentNRCellRef {

 description "Reference to an adjacent NR cell (NRCellCU or

 ExternalNRCellCU).";

 mandatory true;

 type types3gpp:DistinguishedName;

 }

 leaf isRemoveAllowed {

 type boolean;

 default true;

 description "True if the ANR function in the node is allowed to remove this relation.";

 }

 leaf isHOAllowed {

 type boolean;

 default true;

 description "True if handovers are allowed over this relation.";

 }

 leaf isESCoveredBy {

 description "Indicates whether the adjacent cell

 provides no, partial or full coverage for the parent cell

 instance. Adjacent cells with this attribute equal to FULL are

 recommended to be considered as candidate cells to take over the

 coverage when the original cell is about to be changed to energy

 saving state. All adjacent cells with this property equal

 to PARTIAL are recommended to be considered as entirety of candidate

 cells to take over the coverage when the original cell is about to be

 changed to energy saving state.";

 type EnergySavingCoverage;

 }

 augment /me3gpp:ManagedElement/gnbcucp3gpp:GNBCUCPFunction/nrcellcu3gpp:NRCellCU {

 list NRCellRelation {

 description "Represents a neighbour cell relation from a source cell

 to a target cell, where the target cell is an NRCellCU or

 ExternalNRCellCU instance.";

 reference "3GPP TS 28.541";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses NRCellRelationGrp;

 }

 uses mf3gpp:ManagedFunctionContainedClasses;

 }

 }

}

***Next change***

E.5.30 module \_3gpp-nr-nrm-drachoptimizationfunction.yang

module \_3gpp-nr-nrm-drachoptimizationfunction {

 yang-version 1.1;

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

 prefix "drachoptimizationfunction3gpp";

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

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

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

 import \_3gpp-nr-nrm-nrcelldu { prefix nrcelldu3gpp; }

 import \_3gpp-nr-nrm-gnbdufunction { prefix gnbdu3gpp; }

 organization "3GPP SA5";

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

 description "Defines the YANG mapping of the DRACHOptimizationFunction 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 2021-01-25 { reference CR-0454 ; }

 revision 2020-10-02 { reference "CR-0384, CR-0382" ; }

 revision 2020-05-08 { reference S5-203316; }

 grouping DRACHOptimizationFunctionGrp {

 description "Represents the DRACHOptimizationFunction IOC.";

 reference "3GPP TS 28.541";

 uses top3gpp:Top\_Grp;

 list ueAccProbilityDist {

 key targetProbability;

 description "This is a list of target Access Probability (APn) for the RACH optimization function.";

 leaf targetProbability {type TargetProbability;}

 container attributes {

 uses UeAccProbilityDistGrp;

 }

 }

 list ueAccDelayProbilityDist {

 key targetProbability;

 description "This is a list of target Access Delay probability (ADP) for the RACH optimization function.";

 leaf targetProbability {type TargetProbability;}

 container attributes {

 uses UeAccDelayProbilityDistGrp;

 }

 }

 leaf drachOptimizationControl {

 description "This attribute determines whether the RACH Optimization function is enabled or disabled.";

 type boolean;

 }

 }

 typedef TargetProbability {

 type enumeration {

 enum 25;

 enum 50;

 enum 75;

 enum 90;

 }

 }

 typedef Numberofpreamblessent {

 type int32 { range "1..200"; }

 units "1";

 }

 typedef Accessdelay {

 type int32 { range "10..560"; }

 units "1";

 }

 grouping UeAccProbilityDistGrp {

 description "Represents the target Access Probability (APn) for the RACH optimization function.";

 leaf targetProbability {

 description "This attribute determines the target Probability.";

 mandatory true;

 type TargetProbability;

 }

 leaf numberofpreamblessent {

 description "This attribute determines the number of preambles sent.";

 mandatory true;

 type Numberofpreamblessent;

 }

 }

 grouping UeAccDelayProbilityDistGrp {

 description "Represents the target Access Delay probability (ADP) for the RACH optimization function.";

 leaf targetProbability {

 description "This attribute determines the target Probability.";

 mandatory true;

 type TargetProbability;

 }

 leaf accessdelay {

 description "This attribute determines the access delay.";

 mandatory true;

 type Accessdelay;

 }

 }

 augment "/me3gpp:ManagedElement/gnbdu3gpp:GNBDUFunction/nrcelldu3gpp:NRCellDU" {

 if-feature nrcelldu3gpp:DRACHOptimizationFunction;

 uses DRACHOptimizationFunctionGrp;

 }

 augment "/me3gpp:ManagedElement/gnbdu3gpp:GNBDUFunction" {

 if-feature gnbdu3gpp:DRACHOptimizationFunction;

 uses DRACHOptimizationFunctionGrp;

 }

 augment "/me3gpp:ManagedElement" {

 if-feature me3gpp:DRACHOptimizationFunction;

 uses DRACHOptimizationFunctionGrp;

 }

 augment "/subnet3gpp:SubNetwork" {

 if-feature nrcelldu3gpp:DRACHOptimizationFunction;

 uses DRACHOptimizationFunctionGrp;

 }

}

***Next change***

## E.5.32 module \_3gpp-nr-nrm-dpciconfigurationfunction.yang

module \_3gpp-nr-nrm-dpciconfigurationfunction {

 yang-version 1.1;

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

 prefix "dpciconfigurationfunction3gpp";

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

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

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

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

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

 organization "3GPP SA5";

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

 description "Defines the YANG mapping of the DPCIConfigurationFunction 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 2021-01-25 { reference CR-0454 ; }

 revision 2020-11-25 { reference CR-0386 ; }

 revision 2020-05-08 { reference S5-203316; }

 grouping DPCIConfigurationFunctionGrp {

 description "Represents the DPCICONFIGURATIONFunction IOC.";

 reference "3GPP TS 28.541";

 uses top3gpp:Top\_Grp;

 list nRPciList {

 key NRPci;

 description "This holds a list of physical cell identities that can be assigned to the NR cells. This attribute shall be supported if D-SON PCI configuration or domain Centralized SON PCI configuration function is supported.";

 leaf NRPci {type int32;}

 container attributes {

 uses NRPciListGrp;

 }

 }

 leaf dPciConfigurationControl {

 description " This attribute determines whether the Distributed SON or Domain-Centralized SON PCI configuration Function is enabled or disabled.";

 type boolean;

 }

 }

 grouping NRPciListGrp {

 description "Represents the NR PCI list for the PCI configuration function.";

 leaf NRPci {

 description "This attribute determines the NR PCI.";

 type int32 { range "0..1007"; }

 units "1";

 }

 }

 augment "/me3gpp:ManagedElement/gnbcucp3gpp:GNBCUCPFunction/nrcellcu3gpp:NRCellCU" {

 if-feature nrcellcu3gpp:DPCIConfigurationFunction;

 uses DPCIConfigurationFunctionGrp;

 }

 augment "/me3gpp:ManagedElement" {

 if-feature me3gpp:DPCIConfigurationFunction;

 uses DPCIConfigurationFunctionGrp;

 }

 augment "/subnet3gpp:SubNetwork" {

 if-feature subnet3gpp:DPCIConfigurationFunction;

 uses DPCIConfigurationFunctionGrp;

 }

}

***Next change***

## H.5.13 module \_3gpp-5gc-nrm-nfservice.yang

module \_3gpp-5gc-nrm-nfservice {

 yang-version 1.1;

 namespace urn:3gpp:sa5:\_3gpp-5gc-nrm-nfservice;

 prefix nfs3gpp;

 import \_3gpp-common-yang-types { prefix types3gpp; }

 import ietf-yang-types { prefix yang; }

 import ietf-inet-types { prefix inet; }

 import \_3gpp-5g-common-yang-types { prefix types5g3gpp; }

 organization "3gpp SA5";

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

 description "NF service class.";

 reference "3GPP TS 29.510";

 revision 2021-01-25 { reference CR-0454 ; }

 revision 2020-11-05 { reference CR-0412 ; }

 revision 2019-06-17 { reference "initial revision"; }

 grouping NFServiceGrp {

 description "Represents the NFService IOC";

 leaf serviceInstanceID {

 description

 "Unique ID of the service instance within a given NF Instance.";

 mandatory true;

 type string;

 }

 leaf serviceName {

 description "Name of the service instance (e.g. 'nudm-sdm').";

 mandatory true;

 type ServiceName;

 }

 list versions { //check in review if key is ok (unique)

 description "API versions supported by the NF Service and if available,

 the corresponding retirement date of the NF Service.";

 min-elements 1;

 key "apiVersionInUri apiFullVersion";

 uses NFServiceVersion;

 }

 leaf scheme {

 description "URI scheme (e.g. 'http', 'https').";

 mandatory true;

 type UriScheme;

 }

 leaf nfServiceStatus {

 description "Status of the NF Service Instance.";

 mandatory true;

 type NFServiceStatus;

 }

 leaf fqdn {

 description "FQDN of the NF Service Instance.";

 //optional support

 type inet:domain-name;

 }

 leaf interPlmnFqdn {

 description "If the NF service needs to be discoverable by other NFs in a

 different PLMN, then an FQDN that is used for inter PLMN routing.";

 //optional support

 type inet:domain-name;

 }

 list ipEndPoints {

 description "IP address(es) and port information of the Network Function

 (including IPv4 and/or IPv6 address)where the service is listening

 for incoming service requests.";

 //optional support

 key idx;

 leaf idx {

 type string;

 }

 min-elements 1;

 uses ipEndPoint;

 }

 leaf apiPrefix {

 description "Optional path segment(s) used to construct the {apiRoot}

 variable of the different API URIs.";

 //optional support

 type string;

 }

 list defaultNotificationSubscriptions {

 description "Notification endpoints for different notification types.";

 key notificationType;

 //optional support

 min-elements 1;

 uses types3gpp:DefaultNotificationSubscription;

 }

 list allowedPlmns {

 description "PLMNs allowed to access the service instance.

 The absence of this attribute indicates that any PLMN is allowed to

 access the service instance.";

 min-elements 1;

 //optional support

 key "mcc mnc";

 uses types3gpp:PLMNId;

 }

 leaf-list allowedNfTypes {

 description "Type of the NFs allowed to access the service instance.

 The absence of this attribute indicates that any NF type is allowed

 to access the service instance.";

 min-elements 1;

 //optional support

 type types3gpp:NfType;

 }

 leaf-list allowedNfDomains {

 description "Pattern representing the NF domain names allowed to access the service instance.";

 //optional support

 min-elements 1;

 type string;

 }

 list allowedNssais {

 description "S-NSSAI of the allowed slices to access the service instance.

 The absence of this attribute indicates that any slice is allowed to

 access the service instance.";

 min-elements 1;

 //optional support

 key "sd sst";

 uses types5g3gpp:SNssai;

 }

 leaf priority {

 description "Priority (relative to other services of the same type)

 in the range of 0-65535, to be used for NF Service selection; lower

 values indicate a higher priority.";

 //optional support

 type uint16;

 }

 leaf capacity {

 description "Static capacity information in the range of 0-65535,

 expressed as a weight relative to other services of the same type.";

 //optional support

 type uint16;

 }

 leaf load {

 description "Dynamic load information, ranged from 0 to 100, indicates

 the current load percentage of the NF Service.";

 //optional support

 type types3gpp:Load;

 }

 leaf recoveryTime {

 description "Timestamp when the NF was (re)started.";

 //optional support

 type yang:date-and-time;

 }

 list chfServiceInfo { //is the key unique

 description "Specific data for a CHF service instance.";

 //optional support

 max-elements 1;

 key "primaryChfServiceInstance secondaryChfServiceInstance";

 uses ChfServiceInfo;

 }

 leaf supportedFeatures {

 description "Supported Features of the NF Service instance.";

 //optional support

 type SupportedFeatures;

 }

 }

 typedef SupportedFeatures {

 type string {

 pattern '[A-Fa-f0-9]\*';

 }

 }

 grouping ipEndPoint {

 choice address {

 leaf ipv4Address {

 type inet:ipv4-address;

 }

 leaf ipv6Address {

 type inet:ipv6-address;

 }

 leaf ipv6Prefix {

 type inet:ipv6-prefix;

 }

 }

 leaf transport {

 type TransportProtocol;

 }

 leaf port {

 type uint16;

 }

 }

 typedef TransportProtocol {

 type enumeration {

 enum TCP;

 enum STCP;

 enum UDP;

 }

 }

 grouping NFServiceVersion {

 leaf apiVersionInUri {

 mandatory true;

 type string;

 }

 leaf apiFullVersion {

 mandatory true;

 type string;

 }

 leaf expiry {

 //optional to support

 type yang:date-and-time;

 }

 }

 typedef ServiceName {

 type enumeration {

 enum NNRF\_NFM;

 enum NNRF\_DISC;

 enum NUDM\_SDM;

 enum NUDM\_UECM;

 enum NUDM\_UEAU;

 enum NUDM\_EE;

 enum NUDM\_PP;

 enum NAMF\_COMM;

 enum NAMF\_EVTS;

 enum NAMF\_MT;

 enum NAMF\_LOC;

 enum NSMF\_PDUSESSION;

 enum NSMF\_EVENT-EXPOSURE;

 enum NAUSF\_AUTH;

 enum NAUSF\_SORPROTECTION;

 enum NNEF\_PFDMANAGEMENT;

 enum NPCF\_AM-POLICY-CONTROL;

 enum NPCF\_SMPOLICYCONTROL;

 enum NPCF\_POLICYAUTHORIZATION;

 enum NPCF\_BDTPOLICYCONTROL;

 enum NPCF\_EVENTEXPOSURE;

 enum NPCF\_UE\_POLICY\_CONTROL;

 enum NSMSF\_SMS;

 enum NNSSF\_NSSELECTION;

 enum NNSSF\_NSSAIAVAILABILITY;

 enum NUDR\_DR;

 enum NLMF\_LOC;

 enum N5G\_EIR\_EIC;

 enum NBSF\_MANAGEMENT;

 enum NCHF\_SPENDINGLIMITCONTROL;

 enum NCHF\_CONVERGEDCHARGING;

 enum NNWDAF\_EVENTSSUBSCRIPTION;

 enum NNWDAF\_ANALYTICSINFO;

 }

 }

 typedef UriScheme {

 type enumeration {

 enum HTTP;

 enum HTTPS;

 }

 }

 typedef NFServiceStatus {

 type enumeration {

 enum REGISTERED;

 enum SUSPENDED;

 enum UNDISCOVERABLE;

 }

 }

 grouping ChfServiceInfo {

 leaf primaryChfServiceInstance {

 description "Shall be present if the CHF service instance serves as a

 secondary CHF instance of another primary CHF service instance.";

 //conditional to support

 type string;

 }

 leaf secondaryChfServiceInstance {

 description "Shall be present if the CHF service instance serves as a

 primary CHF instance of another secondary CHF service instance.";

 //conditional to support

 type string;

 }

 }

}

***End of changes***