**3GPP TSG- Meeting #**

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

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| ***Title:***  |  |
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| ***Source to WG:*** |  |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***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 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)* |
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| ***Reason for change:*** | Stage-3 YANG models not following Stage-2 models |
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| ***Summary of change:*** | Updates to the YANG source of the modules to correct deviations from Stage-2 information models. \_3gpp-nr-nrm-bwpCorerction of a YANG syntax error in \_3gpp-nr-nrm-ep.yang. (previously not detected by pyang) |
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| ***Consequences if not approved:*** | YANG code not following Stage-2 IM. |
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| ***Clauses affected:*** | E.5.1a |
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|  | **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 ...  |
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| ***Other comments:*** | Forge link is: <https://forge.3gpp.org/rep/sa5/MnS/tree/S5-206034_Rel-16_CR_28.541_Correction_of_NRM_YANG_errors> |
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| ***This CR's revision history:*** |  |

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| **1st Change** |

## E.5.2 module\_3gpp-nr-nrm-ep.yang

module \_3gpp-nr-nrm-ep {

 yang-version 1.1;

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

 prefix "ep3gpp";

 import \_3gpp-common-ep-rp { prefix eprp3gpp; }

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

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

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

 import \_3gpp-nr-nrm-gnbcuupfunction { prefix gnbcuup3gpp; }

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

 organization "3GPP SA5";

 description "Defines the YANG mapping of the NR related endpoint

 Information Object Classes (IOCs) that are part of the NR Network

 Resource Model (NRM).";

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

 revision 2020-11-02 { reference CR-0409 ; }

 revision 2020-03-02 { reference S5-201191; }

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

 grouping EP\_E1Grp {

 description "Represents the EP\_E1 IOC.";

 reference "3GPP TS 28.541, 3GPP TS 38.401";

 uses eprp3gpp:EP\_Common;

 }

 grouping EP\_F1CGrp {

 description "Represents the EP\_F1C IOC.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 uses eprp3gpp:EP\_Common;

 }

 grouping EP\_F1UGrp {

 description "Represents the EP\_F1U IOC.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 uses eprp3gpp:EP\_Common;

 }

 grouping EP\_XnCGrp {

 description "Represents the EP\_XnC IOC.";

 reference "3GPP TS 28.541, 3GPP TS 38.420";

 uses eprp3gpp:EP\_Common;

 }

 grouping EP\_XnUGrp {

 description "Represents the EP\_XnU IOC.";

 reference "3GPP TS 28.541, 3GPP TS 38.420";

 uses eprp3gpp:EP\_Common;

 }

 grouping EP\_NgCGrp {

 description "Represents the EP\_NgC IOC.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 uses eprp3gpp:EP\_Common;

 }

 grouping EP\_NgUGrp {

 description "Represents the EP\_NgU IOC.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 uses eprp3gpp:EP\_Common;

 }

 grouping EP\_X2CGrp {

 description "Represents the EP\_X2C IOC.";

 reference "3GPP TS 28.541, 3GPP TS 36.423";

 uses eprp3gpp:EP\_Common;

 }

 grouping EP\_X2UGrp {

 description "Represents the EP\_X2U IOC.";

 reference "3GPP TS 28.541, 3GPP TS 36.425";

 uses eprp3gpp:EP\_Common;

 }

 grouping EP\_S1UGrp {

 description "Represents the EP\_S1U IOC.";

 reference "3GPP TS 28.541, 3GPP TS 36.410";

 uses eprp3gpp:EP\_Common;

 }

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

 list EP\_E1 {

 description "Represents the local end point of the logical link,

 supporting E1 interface between gNB-CU-CP and gNB-CU-UP.";

 reference "3GPP TS 28.541, 3GPP TS 38.401";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_E1Grp;

 }

 }

 list EP\_F1C {

 description "Represents the local end point of the control plane

 interface (F1-C) between the DU and CU or CU-CP.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_F1CGrp;

 }

 }

 list EP\_NgC {

 description "Represents the local end point of the control plane

 interface (NG-C) between the gNB and NG-Core entity.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_NgCGrp;

 }

 }

 list EP\_XnC {

 description "Represents the local gNB node end point of the logical

 link, supporting Xn application protocols, to a neighbour NG-RAN node

 (including gNB and ng-eNB). The Xn Application PDUs are carried over

 SCTP/IP/Data link layer/Physical layer stack.";

 reference "3GPP TS 28.541, 3GPP TS 38.420 subclause 7";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_XnCGrp;

 }

 }

 list EP\_X2C {

 description "Represents the local end point of the logical link,

 supporting X2-C application protocols used in EN-DC, to a neighbour

 eNB or en-gNB node.";

 reference "3GPP TS 28.541, 3GPP TS 36.423";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_X2CGrp;

 }

 }

 }

 augment "/me3gpp:ManagedElement/gnbcuup3gpp:GNBCUUPFunction" {

 list EP\_E1 {

 description "Represents the local end point of the logical link,

 supporting E1 interface between gNB-CU-CP and gNB-CU-UP.";

 reference "3GPP TS 28.541, 3GPP TS 38.401";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_E1Grp;

 }

 }

 list EP\_F1U {

 description "Represents the local end point of the user plane

 interface (F1-U) between the DU and CU or CU-UP.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_F1UGrp;

 }

 }

 list EP\_NgU {

 description "Represents the local end point of the NG user plane

 (NG-U) interface between the gNB and the UPGW.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_NgUGrp;

 }

 }

 list EP\_XnU {

 description "Represents the one end-point of a logical link supporting

 the Xn user plane (Xn-U) interface. The Xn-U interface provides

 non-guaranteed delivery of user plane PDUs between two NG-RAN nodes.";

 reference "3GPP TS 28.541, 3GPP TS 38.420";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_XnUGrp;

 }

 }

 list EP\_X2U {

 description "Represents the local end-point of a logical link supporting

 the X2 user plane (X2-U) interface used in EN-DC.";

 reference "3GPP TS 28.541, 3GPP TS 36.425";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_X2UGrp;

 }

 }

 list EP\_S1U {

 description "Represents the local end point of the logical link,

 supporting S1-U interface towards a S-GW node.";

 reference "3GPP TS 28.541, 3GPP TS 36.410";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_S1UGrp;

 }

 }

 }

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

 list EP\_F1C {

 description "Represents the local end point of the control plane

 interface (F1-C) between the DU and CU or CU-CP.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_F1CGrp;

 }

 }

 list EP\_F1U {

 description "Represents the local end point of the user plane

 interface (F1-U) between the DU and CU or CU-UP.";

 reference "3GPP TS 28.541, 3GPP TS 38.470";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses EP\_F1UGrp;

 }

 }

 }

}

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| **Next Change** |

## E.5.1a module \_3gpp-nr-nrm-bwp.yang

module \_3gpp-nr-nrm-bwp {

 yang-version 1.1;

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

 prefix "bwp3gpp";

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

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

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

 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 BWP 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 2020-11-02 { reference CR-0409 ; }

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

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

 typedef CyclicPrefix {

 type enumeration {

 enum NORMAL;

 enum EXTENDED;

 }

 }

 typedef BwpContext {

 type enumeration {

 enum DL;

 enum UL;

 enum SUL;

 }

 }

 typedef IsInitialBwp {

 type enumeration {

 enum INITIAL;

 enum OTHER;

 }

 }

 grouping BWPGrp {

 description "Represents the BWP IOC.";

 reference "3GPP TS 28.541";

 uses mf3gpp:ManagedFunctionGrp;

 leaf bwpContext {

 description "Identifies whether the object is used for downlink, uplink

 or supplementary uplink.";

 mandatory true;

 type BwpContext;

 }

 leaf isInitialBwp {

 description "Identifies whether the object is used for initial or other

 BWP.";

 mandatory true;

 type IsInitialBwp;

 }

 leaf subCarrierSpacing {

 description "Subcarrier spacing configuration for a BWP.";

 reference "3GPP TS 38.104";

 mandatory true;

 type uint32 { range "15 | 30 | 60 | 120"; }

 units kHz;

 }

 leaf cyclicPrefix {

 description "Cyclic prefix, which may be normal or extended.";

 reference "3GPP TS 38.211";

 mandatory true;

 type CyclicPrefix;

 }

 leaf startRB {

 description "Offset in common resource blocks to common resource block 0

 for the applicable subcarrier spacing for a BWP.";

 reference "N\_BWP\_start in 3GPP TS 38.211";

 mandatory true;

 type uint32;

 }

 leaf numberOfRBs {

 description "Number of physical resource blocks for a BWP.";

 reference "N\_BWP\_size in 3GPP TS 38.211";

 mandatory true;

 type uint32;

 }

 }

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

 list BWP {

 description "Represents a bandwidth part (BWP).";

 key id;

 uses top3gpp:Top\_Grp;

 container attributes {

 uses BWPGrp;

 }

 uses mf3gpp:ManagedFunctionContainedClasses;

 }

 }

}

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| **End of Change** |