**3GPP TSG-RAN WG3 Meeting #117-e R3-225074**

**E-Meeting, 15th – 24th Aug 2022**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.423** | **CR** | **0868** | **rev** |  **2** | **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 |  |

|  |
| --- |
|  |
| ***Title:***  | CR for TS38.423 on Extending NR Operation to 71GHz |
|  |  |
| ***Source to WG:*** | China Telecom,Ericsson,Huawei |
| ***Source to TSG:*** | RAN3 |
|  |  |
| ***Work item code:*** | NR\_ext\_to\_71GHz-Core |  | ***Date:*** | 2022-08-15 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | In order to support extending NR operation to 71GHz, new subcarrier spacings and transmission bandwidth configuration NRB for FR2-2 had been specified in Rel-17. In TS36.423, the configuration of one NR cell comprises of subcarrier spacings and Transmission bandwidth. Therefore, the new subcarrier spacings configuration and Transmission bandwidth need to be introduced in XnAP to indicate one NR cell in FR2-2. |
|  |  |
| ***Summary of change:*** | * Add SCS 480kHz and 960kHz in NR Transmission Bandwidth, NR Carrier List and Intended TDD DL-UL Configuration NR
* Add more values in transmission bandwidth configuration NRB

Impact assessment towards the previous version of the specification (same release):This CR has an isolated impact towards the previous version of the specification (same release). |
|  |  |
| ***Consequences if not approved:*** | One cell in FR2-2 could not be supported |
|  |  |
| ***Clauses affected:*** | 9.2.2.20,9.2.2.40,9.2.2.63,9.3.5 |
|  |  |
|  | **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:*** |  |
|  |  |
| ***This CR's revision history:*** | V1: update cover sheetV2: * Use the latest CR format
* Remove the second change in 9.2.2.63
 |

////////////////////////////////////////////////////////////////////////start of change ////////////////////////////////////////////////////////////////////////

#### 9.2.2.20 NR Transmission Bandwidth

The *NR Transmission Bandwidth* IE is used to indicate either the UL or the DL transmission bandwidth.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| NR SCS | M |  | ENUMERATED (scs15, scs30, scs60, scs120, …,scs480,scs960) | The values scs15, scs30, scs60 and scs120 corresponds to the sub carrier spacing in TS 38.104 [24]. |
| NR NRB | M |  | ENUMERATED (nrb11, nrb18, nrb24, nrb25, nrb31, nrb32, nrb38, nrb51, nrb52, nrb65, nrb66, nrb78, nrb79, nrb93, nrb106, nrb107, nrb121, nrb132, nrb133, nrb135, nrb160, nrb162, nrb189, nrb216, nrb217, nrb245, nrb264, nrb270, nrb273, ..., nrb33, nrb62, nrb124, nrb148, nrb248) | This IE is used to indicate the UL or DL transmission bandwidth expressed in units of resource blocks "NRB" (TS 38.104 [24]). The values nrb11, nrb18, etc. correspond to the number of resource blocks "NRB" 11, 18, etc. |

////////////////////////////////////////////////////////////////////////skip unchanged////////////////////////////////////////////////////////////////////////

#### 9.2.2.40 Intended TDD DL-UL Configuration NR

This IE contains the subcarrier spacing, cyclic prefix and TDD DL-UL slot configuration of an NR cell that a neighbour NG-RAN node needs to take into account for cross-link interference mitigation, and/or for NR-DC power coordination, when operating its own cells.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description | Criticality  | Assigned Criticality |
| NR SCS | M |  | ENUMERATED (scs15, scs30, scs60, scs120, …,scs480,scs960) | The values scs15, scs30, scs60 and scs120 corresponds to the sub carrier spacing in TS 38.104 [24]. | – |  |
| NR Cyclic Prefix | M |  | ENUMERATED (Normal, Extended, …) | The type of cyclic prefix, which determines the number of symbols in a slot. | – |  |
| NR DL-UL Transmission Periodicity | M |  | ENUMERATED (ms0p5, ms0p625, ms1, ms1p25, ms2, ms2p5, ms3, ms4, ms5, ms10, ms20, ms40, ms60, ms80, ms100, ms120, ms140, ms160, …) | The periodicity is expressed in the format msXpYZ, and equals X.YZ milliseconds. | – |  |
| **Slot Configuration List** |  | *1* |  |  | – |  |
| **>Slot Configuration List Item** |  | *1..<maxnoofslots>* |  |  | – |  |
| >>Slot Index |  |  | INTEGER (0.. 5119) |  | – |  |
| >>CHOICE *Symbol Allocation in Slot* | M |  |  |  | – |  |
| >>>*All DL* |  |  |  |  | – |  |
| >>>*All UL* |  |  |  |  | – |  |
| >>>*Both DL and UL* |  |  |  |  | – |  |
| >>>>Number of DL Symbols | M |  | INTEGER (0..13) | Number of consecutive DL symbols in the slot identified by Slot Index. If extended cyclic prefix is used, the maximum value is 11. The *Permutation* IE indicates the location of DL symbols in the slot. | – |  |
| >>>>Number of UL Symbols | M |  | INTEGER (0..13) | Number of consecutive UL symbols in the slot identified by Slot Index. If extended cyclic prefix is used, the maximum value is 11. The *Permutation* IE indicates the location of UL symbols in the slot. | – |  |
| >>>>Permutation | O |  | ENUMERATED (DFU, UFD, …) | If not present, the default value is DFU. | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofslots | Maximum length of number of slots in a 10-ms period. Value is 5120. |

////////////////////////////////////////////////////////////////////////skip unchanged////////////////////////////////////////////////////////////////////////

#### 9.2.2.63 NR Carrier List

This IE indicates the SCS-specific carriers per TDD, per DL, per UL or per SUL of an NR cell.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| **NR Carrier Item** |  | *1..<maxnoofNRSCSs>* |  |  |
| >NR SCS | M |  | ENUMERATED (scs15, scs30, scs60, scs120, …,scs480,scs960) | SCS for the corresponding carrier. |
| >Offset to Carrier | M |  | INTEGER (0.. 2199, ...) | Offset in frequency domain between Point A (lowest subcarrier of common RB 0) and the lowest usable subcarrier on this carrier in number of PRBs (using the *NR SCS* IE defined for this carrier). The maximum value corresponds to 275×8−1. See TS 38.211 [39], clause 4.4.2. |
| >Carrier Bandwidth | M |  | INTEGER (1.. maxnoofPhysicalResourceBlocks, ...) | Width of this carrier in number of PRBs (using the *NR SCS* IE defined for this carrier). See TS 38.211 [39], clause 4.4.2. |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofNRSCSs | Maximum no. of SCS-specific carriers per TDD, per DL, per UL or per SUL of an NR cell. Value is 5. |
| maxnoofPhysicalResourceBlocks | Maximum no. of Physical Resource Blocks. Value is 275. |

////////////////////////////////////////////////////////////////////////skip unchanged////////////////////////////////////////////////////////////////////////

### 9.3.5 Information Element definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Information Element Definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

////////////////////////////////////////////////////////////////////////skip unchanged////////////////////////////////////////////////////////////////////////

-- N

NACellResourceConfigurationList ::= SEQUENCE (SIZE(1..maxnoofHSNASlots)) OF NACellResourceConfiguration-Item

NACellResourceConfiguration-Item ::= SEQUENCE {

 nAdownlin ENUMERATED {true, false, ...} OPTIONAL,

 nAuplink ENUMERATED {true, false, ...} OPTIONAL,

 nAflexible ENUMERATED {true, false, ...} OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { NACellResourceConfiguration-Item-ExtIEs} } OPTIONAL,

 ...

}

NACellResourceConfiguration-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NBIoT-UL-DL-AlignmentOffset ::= ENUMERATED {

 khz-7dot5,

 khz0,

 khz7dot5,

 ...

}

NE-DC-TDM-Pattern ::= SEQUENCE {

 subframeAssignment ENUMERATED {sa0,sa1,sa2,sa3,sa4,sa5,sa6},

 harqOffset INTEGER (0..9),

 iE-Extension ProtocolExtensionContainer { {NE-DC-TDM-Pattern-ExtIEs}} OPTIONAL,

 ...

}

NE-DC-TDM-Pattern-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

NeighbourInformation-E-UTRA ::= SEQUENCE (SIZE(1..maxnoofNeighbours)) OF NeighbourInformation-E-UTRA-Item

NeighbourInformation-E-UTRA-Item ::= SEQUENCE {

 e-utra-PCI E-UTRAPCI,

 e-utra-cgi E-UTRA-CGI,

 earfcn E-UTRAARFCN,

 tac TAC,

 ranac RANAC OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {NeighbourInformation-E-UTRA-Item-ExtIEs} } OPTIONAL,

 ...

}

NeighbourInformation-E-UTRA-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::={

 ...

}

NeighbourInformation-NR ::= SEQUENCE (SIZE(1..maxnoofNeighbours)) OF NeighbourInformation-NR-Item

NeighbourInformation-NR-Item ::= SEQUENCE {

 nr-PCI NRPCI,

 nr-cgi NR-CGI,

 tac TAC,

 ranac RANAC OPTIONAL,

 nr-mode-info NeighbourInformation-NR-ModeInfo,

 connectivitySupport Connectivity-Support,

 measurementTimingConfiguration OCTET STRING,

 iE-Extensions ProtocolExtensionContainer { {NeighbourInformation-NR-Item-ExtIEs} } OPTIONAL,

 ...

}

NeighbourInformation-NR-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::={

 ...

}

NeighbourInformation-NR-ModeInfo ::= CHOICE {

 fdd-info NeighbourInformation-NR-ModeFDDInfo,

 tdd-info NeighbourInformation-NR-ModeTDDInfo,

 choice-extension ProtocolIE-Single-Container { {NeighbourInformation-NR-ModeInfo-ExtIEs} }

}

NeighbourInformation-NR-ModeInfo-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NeighbourInformation-NR-ModeFDDInfo ::= SEQUENCE {

 ul-NR-FreqInfo NRFrequencyInfo,

 dl-NR-FequInfo NRFrequencyInfo,

 ie-Extensions ProtocolExtensionContainer { {NeighbourInformation-NR-ModeFDDInfo-ExtIEs} } OPTIONAL,

 ...

}

NeighbourInformation-NR-ModeFDDInfo-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NeighbourInformation-NR-ModeTDDInfo ::= SEQUENCE {

 nr-FreqInfo NRFrequencyInfo,

 ie-Extensions ProtocolExtensionContainer { {NeighbourInformation-NR-ModeTDDInfo-ExtIEs} } OPTIONAL,

 ...

}

NeighbourInformation-NR-ModeTDDInfo-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

Neighbour-NG-RAN-Node-List ::= SEQUENCE (SIZE(0..maxnoofNeighbour-NG-RAN-Nodes)) OF Neighbour-NG-RAN-Node-Item

Neighbour-NG-RAN-Node-Item ::= SEQUENCE {

 globalNG-RANNodeID GlobalNG-RANNode-ID,

 local-NG-RAN-Node-Identifier Local-NG-RAN-Node-Identifier,

 ie-Extensions ProtocolExtensionContainer { {Neighbour-NG-RAN-Node-Item-ExtIEs} } OPTIONAL,

 ...

}

Neighbour-NG-RAN-Node-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NID ::= BIT STRING (SIZE(44))

NRCarrierList ::= SEQUENCE (SIZE(1..maxnoofNRSCSs)) OF NRCarrierItem

NRCarrierItem ::= SEQUENCE {

 carrierSCS NRSCS,

 offsetToCarrier INTEGER (0..2199, ...),

 carrierBandwidth INTEGER (0..maxnoofPhysicalResourceBlocks, ...),

 iE-Extension ProtocolExtensionContainer { {NRCarrierItem-ExtIEs} } OPTIONAL,

 ...

}

NRCarrierItem-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NRCellPRACHConfig ::= OCTET STRING

NG-RAN-Cell-Identity ::= CHOICE {

 nr NR-Cell-Identity,

 e-utra E-UTRA-Cell-Identity,

 choice-extension ProtocolIE-Single-Container { {NG-RAN-Cell-Identity-ExtIEs} }

}

NG-RAN-Cell-Identity-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NG-RAN-CellPCI ::= CHOICE {

 nr NRPCI,

 e-utra E-UTRAPCI,

 choice-extension ProtocolIE-Single-Container { {NG-RAN-CellPCI-ExtIEs} }

}

NG-RAN-CellPCI-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NG-RANnode2SSBOffsetsModificationRange ::= SEQUENCE (SIZE(1..maxnoofSSBAreas)) OF SSBOffsetModificationRange

NG-RANnodeUEXnAPID ::= INTEGER (0.. 4294967295)

NumberofActiveUEs::= INTEGER(0..16777215, ...)

NoofRRCConnections ::= INTEGER (1..65536,...)

NonDynamic5QIDescriptor ::= SEQUENCE {

 fiveQI FiveQI,

 priorityLevelQoS PriorityLevelQoS OPTIONAL,

 averagingWindow AveragingWindow OPTIONAL,

 maximumDataBurstVolume MaximumDataBurstVolume OPTIONAL,

 iE-Extension ProtocolExtensionContainer { {NonDynamic5QIDescriptor-ExtIEs } } OPTIONAL,

 ...

}

NonDynamic5QIDescriptor-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 { ID id-CNPacketDelayBudgetDownlink CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional}|

 { ID id-CNPacketDelayBudgetUplink CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional},

 ...

}

NRARFCN ::= INTEGER (0.. maxNRARFCN)

NG-eNB-RadioResourceStatus ::= SEQUENCE {

 dL-GBR-PRB-usage DL-GBR-PRB-usage,

 uL-GBR-PRB-usage UL-GBR-PRB-usage,

 dL-non-GBR-PRB-usage DL-non-GBR-PRB-usage,

 uL-non-GBR-PRB-usage UL-non-GBR-PRB-usage,

 dL-Total-PRB-usage DL-Total-PRB-usage,

 uL-Total-PRB-usage UL-Total-PRB-usage,

 iE-Extensions ProtocolExtensionContainer { { NG-eNB-RadioResourceStatus-ExtIEs} } OPTIONAL,

 ...

}

NG-eNB-RadioResourceStatus-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 { ID id-DL-scheduling-PDCCH-CCE-usage CRITICALITY ignore EXTENSION DL-scheduling-PDCCH-CCE-usage PRESENCE optional}|

 { ID id-UL-scheduling-PDCCH-CCE-usage CRITICALITY ignore EXTENSION UL-scheduling-PDCCH-CCE-usage PRESENCE optional},

 ...

}

DL-scheduling-PDCCH-CCE-usage ::= INTEGER (0.. 100)

UL-scheduling-PDCCH-CCE-usage ::= INTEGER (0.. 100)

TNLCapacityIndicator ::= SEQUENCE {

 dLTNLOfferedCapacity OfferedCapacity,

dLTNLAvailableCapacity AvailableCapacity,

uLTNLOfferedCapacity OfferedCapacity,

 uLTNLAvailableCapacity AvailableCapacity,

 iE-Extensions ProtocolExtensionContainer { { TNLCapacityIndicator-ExtIEs} } OPTIONAL,

 ...

}

TNLCapacityIndicator-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

Non-F1-TerminatingTopologyBHInformation ::= SEQUENCE {

 nonF1TerminatingBHInformation-List NonF1TerminatingBHInformation-List,

 bAPControlPDURLCCH-List BAPControlPDURLCCH-List OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {Non-F1-TerminatingTopologyBHInformation-ExtIEs} } OPTIONAL,

 ...

}

Non-F1-TerminatingTopologyBHInformation-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NonF1TerminatingBHInformation-List ::= SEQUENCE (SIZE(1..maxnoofBHInfo)) OF NonF1TerminatingBHInformation-Item

NonF1TerminatingBHInformation-Item ::= SEQUENCE {

 bHInfoIndex BHInfoIndex,

 dlNon-F1TerminatingBHInfo DLNonF1Terminating-BHInfo OPTIONAL,

 ulNon-F1TerminatingBHInfo ULNonF1Terminating-BHInfo OPTIONAL,

 iE-Extension ProtocolExtensionContainer { { NonF1TerminatingBHInformation-Item-ExtIEs} } OPTIONAL,

 ...

}

NonF1TerminatingBHInformation-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NonUPTraffic ::= CHOICE {

 nonUPTrafficType NonUPTrafficType,

 controlPlaneTrafficType ControlPlaneTrafficType,

 choice-extension ProtocolIE-Single-Container { { NonUPTraffic-ExtIEs} }

}

NonUPTraffic-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NonUPTrafficType ::= ENUMERATED {ueassociatedf1ap, nonueassociatedf1ap, nonf1, ...}

NoPDUSessionIndication ::= ENUMERATED {true, ...}

NPN-Broadcast-Information ::= CHOICE {

 snpn-Information NPN-Broadcast-Information-SNPN,

 pni-npn-Information NPN-Broadcast-Information-PNI-NPN,

 choice-extension ProtocolIE-Single-Container { {NPN-Broadcast-Information-ExtIEs} }

}

NPN-Broadcast-Information-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NPN-Broadcast-Information-SNPN ::= SEQUENCE {

 broadcastSNPNID-List BroadcastSNPNID-List,

 iE-Extension ProtocolExtensionContainer { {NPN-Broadcast-Information-SNPN-ExtIEs} } OPTIONAL,

 ...

}

NPN-Broadcast-Information-SNPN-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NPN-Broadcast-Information-PNI-NPN ::= SEQUENCE {

 broadcastPNI-NPN-ID-Information BroadcastPNI-NPN-ID-Information,

 iE-Extension ProtocolExtensionContainer { {NPN-Broadcast-Information-PNI-NPN-ExtIEs} } OPTIONAL,

 ...

}

NPN-Broadcast-Information-PNI-NPN-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NPNMobilityInformation::= CHOICE {

 snpn-mobility-information NPNMobilityInformation-SNPN,

 pni-npn-mobility-information NPNMobilityInformation-PNI-NPN,

 choice-extension ProtocolIE-Single-Container { {NPNMobilityInformation-ExtIEs} }

}

NPNMobilityInformation-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NPNMobilityInformation-SNPN ::= SEQUENCE {

 serving-NID NID,

 iE-Extension ProtocolExtensionContainer { {NPNMobilityInformation-SNPN-ExtIEs} } OPTIONAL,

 ...

}

NPNMobilityInformation-SNPN-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NPNMobilityInformation-PNI-NPN ::= SEQUENCE {

 allowedPNI-NPN-ID-List AllowedPNI-NPN-ID-List,

 iE-Extension ProtocolExtensionContainer { {NPNMobilityInformation-PNI-NPN-ExtIEs} } OPTIONAL,

 ...

}

NPNMobilityInformation-PNI-NPN-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NPNPagingAssistanceInformation ::= CHOICE {

 pni-npn-Information NPNPagingAssistanceInformation-PNI-NPN,

 choice-extension ProtocolIE-Single-Container { {NPNPagingAssistanceInformation-ExtIEs} }

}

NPNPagingAssistanceInformation-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NPNPagingAssistanceInformation-PNI-NPN ::= SEQUENCE {

 allowedPNI-NPN-ID-List AllowedPNI-NPN-ID-List,

 iE-Extension ProtocolExtensionContainer { {NPNPagingAssistanceInformation-PNI-NPN-ExtIEs} } OPTIONAL,

 ...

}

NPNPagingAssistanceInformation-PNI-NPN-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NPN-Support ::= CHOICE {

 sNPN NPN-Support-SNPN,

 choice-Extensions ProtocolIE-Single-Container { {NPN-Support-ExtIEs} }

}

NPN-Support-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NPN-Support-SNPN ::= SEQUENCE {

 nid NID,

 ie-Extension ProtocolExtensionContainer { {NPN-Support-SNPN-ExtIEs} } OPTIONAL,

 ...

}

NPN-Support-SNPN-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NPRACHConfiguration::= SEQUENCE {

 fdd-or-tdd CHOICE {

 fdd NPRACHConfiguration-FDD,

 tdd NPRACHConfiguration-TDD,

 choice-extension ProtocolIE-Single-Container { { FDD-or-TDD-in-NPRACHConfiguration-Choice-ExtIEs} }

 },

 iE-Extensions ProtocolExtensionContainer { { NPRACHConfiguration-ExtIEs} } OPTIONAL,

 ...

}

NPRACHConfiguration-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

FDD-or-TDD-in-NPRACHConfiguration-Choice-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NPRACHConfiguration-FDD::= SEQUENCE {

 nprach-CP-length NPRACH-CP-Length,

 anchorCarrier-NPRACHConfig OCTET STRING,

 anchorCarrier-EDT-NPRACHConfig OCTET STRING OPTIONAL,

 anchorCarrier-Format2-NPRACHConfig OCTET STRING OPTIONAL,

 anchorCarrier-Format2-EDT-NPRACHConfig OCTET STRING OPTIONAL,

 non-anchorCarrier-NPRACHConfig OCTET STRING OPTIONAL,

 non-anchorCarrier-Format2-NPRACHConfig OCTET STRING OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { NPRACHConfiguration-FDD-ExtIEs} } OPTIONAL,

 ...

}

NPRACHConfiguration-FDD-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NPRACHConfiguration-TDD::= SEQUENCE {

 nprach-preambleFormat NPRACH-preambleFormat,

 anchorCarrier-NPRACHConfigTDD OCTET STRING,

 non-anchorCarrierFequencyConfiglist Non-AnchorCarrierFrequencylist OPTIONAL,

 non-anchorCarrier-NPRACHConfigTDD OCTET STRING OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { NPRACHConfiguration-TDD-ExtIEs} } OPTIONAL,

...

}

NPRACHConfiguration-TDD-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NPRACH-CP-Length::= ENUMERATED {

 us66dot7,

 us266dot7,

 ...

}

NPRACH-preambleFormat::= ENUMERATED {fmt0,fmt1,fmt2,fmt0a,fmt1a,...}

Non-AnchorCarrierFrequencylist ::= SEQUENCE (SIZE(1..maxnoofNonAnchorCarrierFreqConfig)) OF

 SEQUENCE {

 non-anchorCarrierFrquency OCTET STRING,

 iE-Extensions ProtocolExtensionContainer { { Non-AnchorCarrierFrequencylist-ExtIEs} } OPTIONAL,

 ...

 }

Non-AnchorCarrierFrequencylist-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NR-Cell-Identity ::= BIT STRING (SIZE (36))

NG-RAN-Cell-Identity-ListinRANPagingArea ::= SEQUENCE (SIZE (1..maxnoofCellsinRNA)) OF NG-RAN-Cell-Identity

NR-CGI ::= SEQUENCE {

 plmn-id PLMN-Identity,

 nr-CI NR-Cell-Identity,

 iE-Extension ProtocolExtensionContainer { {NR-CGI-ExtIEs} } OPTIONAL,

 ...

}

NR-CGI-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NR-U-Channel-List ::= SEQUENCE (SIZE (1..maxnoofNr-UChannelIDs)) OF NR-U-Channel-Item

NR-U-Channel-Item ::= SEQUENCE {

 nR-U-ChannelID NR-U-ChannelID,

 channelOccupancyTimePercentageDL ChannelOccupancyTimePercentage,

 energyDetectionThreshold EnergyDetectionThreshold,

 iE-Extension ProtocolExtensionContainer { {NR-U-Channel-Item-ExtIEs} } OPTIONAL,

 ...

}

NR-U-Channel-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NR-U-ChannelID ::= INTEGER (1..maxnoofNr-UChannelIDs, ...)

ChannelOccupancyTimePercentage ::= INTEGER (0..100,...)

EnergyDetectionThreshold ::= INTEGER (-100..-50, ...)

NR-U-ChannelInfo-List ::= SEQUENCE (SIZE (1..maxnoofNr-UChannelIDs)) OF NR-U-ChannelInfo-Item

NR-U-ChannelInfo-Item ::= SEQUENCE {

 nR-U-ChannelID NR-U-ChannelID,

 nRARFCN NRARFCN,

 bandwidth Bandwidth,

 iE-Extension ProtocolExtensionContainer { {NR-U-ChannelInfo-Item-ExtIEs} } OPTIONAL,

 ...

}

NR-U-ChannelInfo-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

Bandwidth ::= ENUMERATED{mhz10, mhz20, mhz40, mhz60, mhz80, ...}

NRCyclicPrefix ::= ENUMERATED {normal, extended, ...}

NRDL-ULTransmissionPeriodicity ::= ENUMERATED {ms0p5, ms0p625, ms1, ms1p25, ms2, ms2p5, ms3, ms4, ms5, ms10, ms20, ms40, ms60, ms80, ms100, ms120, ms140, ms160, ...}

NRFrequencyBand ::= INTEGER (1..1024, ...)

NRFrequencyBand-List ::= SEQUENCE (SIZE(1..maxnoofNRCellBands)) OF NRFrequencyBandItem

NRFrequencyBandItem ::= SEQUENCE {

 nr-frequency-band NRFrequencyBand,

 supported-SUL-Band-List SupportedSULBandList OPTIONAL,

 iE-Extension ProtocolExtensionContainer { {NRFrequencyBandItem-ExtIEs} } OPTIONAL,

 ...

}

NRFrequencyBandItem-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NRFrequencyInfo ::= SEQUENCE {

 nrARFCN NRARFCN,

 sul-information SUL-Information OPTIONAL,

 frequencyBand-List NRFrequencyBand-List,

 iE-Extension ProtocolExtensionContainer { {NRFrequencyInfo-ExtIEs} } OPTIONAL,

 ...

}

NRFrequencyInfo-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 { ID id-FrequencyShift7p5khz CRITICALITY ignore EXTENSION FrequencyShift7p5khz PRESENCE optional },...

}

NRMobilityHistoryReport ::= OCTET STRING

NRModeInfo ::= CHOICE {

 fdd NRModeInfoFDD,

 tdd NRModeInfoTDD,

 choice-extension ProtocolIE-Single-Container { {NRModeInfo-ExtIEs} }

}

NRModeInfo-ExtIEs XNAP-PROTOCOL-IES ::= {

 ...

}

NRModeInfoFDD ::= SEQUENCE {

 ulNRFrequencyInfo NRFrequencyInfo,

 dlNRFrequencyInfo NRFrequencyInfo,

 ulNRTransmissonBandwidth NRTransmissionBandwidth,

 dlNRTransmissonBandwidth NRTransmissionBandwidth,

 iE-Extension ProtocolExtensionContainer { {NRModeInfoFDD-ExtIEs} } OPTIONAL,

 ...

}

NRModeInfoFDD-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 { ID id-ULCarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional }|

 { ID id-DLCarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional }|

 { ID id-UL-GNB-DU-Cell-Resource-Configuration CRITICALITY ignore EXTENSION GNB-DU-Cell-Resource-Configuration PRESENCE optional }|

 { ID id-DL-GNB-DU-Cell-Resource-Configuration CRITICALITY ignore EXTENSION GNB-DU-Cell-Resource-Configuration PRESENCE optional },

...

}

NRModeInfoTDD ::= SEQUENCE {

 nrFrequencyInfo NRFrequencyInfo,

 nrTransmissonBandwidth NRTransmissionBandwidth,

 iE-Extension ProtocolExtensionContainer { {NRModeInfoTDD-ExtIEs} } OPTIONAL,

 ...

}

NRModeInfoTDD-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 {ID id-IntendedTDD-DL-ULConfiguration-NR CRITICALITY ignore EXTENSION IntendedTDD-DL-ULConfiguration-NR PRESENCE optional }|

 {ID id-TDDULDLConfigurationCommonNR CRITICALITY ignore EXTENSION TDDULDLConfigurationCommonNR PRESENCE optional }|

 { ID id-CarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional }|

 {ID id-tdd-GNB-DU-Cell-Resource-Configuration CRITICALITY ignore EXTENSION GNB-DU-Cell-Resource-Configuration PRESENCE optional },

 ...

}

NRNRB ::= ENUMERATED { nrb11, nrb18, nrb24, nrb25, nrb31, nrb32, nrb38, nrb51, nrb52, nrb65, nrb66, nrb78, nrb79, nrb93, nrb106, nrb107, nrb121, nrb132, nrb133, nrb135, nrb160, nrb162, nrb189, nrb216, nrb217, nrb245, nrb264, nrb270, nrb273, ..., nrb33, nrb62, nrb124, nrb148, nrb248}

NRPagingeDRXInformation ::= SEQUENCE {

 nRPaging-eDRX-Cycle NRPaging-eDRX-Cycle,

 nRPaging-Time-Window NRPaging-Time-Window OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {NRPagingeDRXInformation-ExtIEs} } OPTIONAL,

 ...

}

NRPagingeDRXInformation-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NRPaging-eDRX-Cycle ::= ENUMERATED {

 hfquarter, hfhalf, hf1, hf2, hf4,

 hf8, hf16,

 hf32, hf64, hf128, hf256,

 hf512, hf1024,

 ...

}

NRPaging-Time-Window ::= ENUMERATED {

 s1, s2, s3, s4, s5,

 s6, s7, s8, s9, s10,

 s11, s12, s13, s14, s15, s16,

 ...

}

NRPagingeDRXInformationforRRCINACTIVE ::= SEQUENCE {

 nRPaging-eDRX-Cycle-Inactive NRPaging-eDRX-Cycle-Inactive,

 iE-Extensions ProtocolExtensionContainer { { NRPagingeDRXInformationforRRCINACTIVE-ExtIEs} } OPTIONAL,

 ...

}

NRPagingeDRXInformationforRRCINACTIVE-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

NRPaging-eDRX-Cycle-Inactive ::= ENUMERATED {

 hfquarter, hfhalf, hf1,

 ...

}

NRPCI ::= INTEGER (0..1007, ...)

NRSCS ::= ENUMERATED { scs15, scs30, scs60, scs120, ..., scs480, scs960}

////////////////////////////////////////////////////////////////////////end of change////////////////////////////////////////////////////////////////////////