**3GPP TSG-RAN WG3 #125R3-244679**

**Maastricht, NL,** **19th – 23th Aug 2024**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.473** | **CR** | **1450** | **rev** | **1** | **Current version:** | **16.18.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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|  |
| ***Title:***  | Correction on asymmetric UL and DL for TDD Carrier |
|  |  |
| ***Source to WG:*** | China Telecom,ZTE, CATT,China Unicom, Ericsson, Nokia, Nokia Shanghai Bell, Huawei |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_newRAT-Core |  | ***Date:*** | 2024-08-21 |
|  |  |  |  |  |
| ***Category:*** | A |  | ***Release:*** | Rel-16 |
|  | *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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | Per TS38.104, TDD Band can be configured with asymmetric UL and DL,i.e, n50 for TDD. However, the existing *Served Cell Information* IE the UL and DL bandwidth for TDD can only be set to symmetric. Therefore, it is need to introduce a new UL and DL Transmission Bandwidth for asymmetric TDD Band. |
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| ***Summary of change:*** | * To introduce a new UL and DL Transmission Bandwidth for asymmetric TDD Band in existing *Served Cell Information* IE.
* To add semantics description for the exisiting TDD Transmission Bandwidth.

Impact Analysis: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). This CR only has an impact on the Served Cell Information by introducing the asymmetric TDD transmission bandwidth |
|  |  |
| ***Consequences if not approved:*** | Asymmetric TDD Band can not be supported in CU/DU split architecture.  |
|  |  |
| ***Clauses affected:*** | 9.3.1.10,9.4.5,9.4.7 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.423. CR 1326  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Rev1: Correct the IE tabular format issue and add more co-source companies |

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

#### 9.3.1.10 Served Cell Information

This IE contains cell configuration information of a cell in the gNB-DU.

| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| --- | --- | --- | --- | --- | --- | --- |
| NR CGI | M |  | 9.3.1.12 |  | - |  |
| NR PCI | M |  | INTEGER (0..1007) | Physical Cell ID | - |  |
| 5GS TAC | O |  | 9.3.1.29 | 5GS Tracking Area Code | - |  |
| Configured EPS TAC | O |  | 9.3.1.29a |  | - |  |
| **Served PLMNs** |  | *1..<maxnoofBPLMNs>* |  | Broadcast PLMNs in SIB 1 associated to the NR Cell Identity in the *NR CGI* IE | - |  |
| >PLMN Identity | M |  | 9.3.1.14 |  | - |  |
| >TAI Slice Support List | O |  | Slice Support List9.3.1.37 | Supported S-NSSAIs per PLMN or per SNPN.  | YES | ignore |
| >NPN Support Information | O |  | 9.3.1.156 | Supported NPNs per PLMN. | YES | reject |
| >Extended TAI Slice Support List | O |  | Extended Slice Support List9.3.1.165 | Additional Supported S-NSSAIs per PLMN or per SNPN.  | YES | reject |
| CHOICE *NR-Mode-Info*  | M |  |  |  | - |  |
| *>FDD* |  |  |  |  | - |  |
| **>>FDD Info** |  | *1* |  |  | - |  |
| >>>UL FreqInfo | M |  | NR Frequency Info9.3.1.17 | This IE is ignored if the *Cell Direction* IE is included and set to “dl-only”. | - |  |
| >>>DL FreqInfo | M |  | NR Frequency Info9.3.1.17 | This IE is ignored if the *Cell Direction* IE is included and set to “ul-only”. | - |  |
| >>>UL Transmission Bandwidth | M |  | Transmission Bandwidth9.3.1.15 | This IE is ignored if the *Cell Direction* IE is included and set to “dl-only”. | - |  |
| >>>DL Transmission Bandwidth | M |  | Transmission Bandwidth9.3.1.15 | This IE is ignored if the *Cell Direction* IE is included and set to “ul-only”. | - |  |
| >>>UL Carrier List  | O |  | NR Carrier List9.3.1.137 | If included, the UL Transmission Bandwidth IE shall be ignored. | YES | ignore |
| >>>DL Carrier List | O |  | NR Carrier List9.3.1.137 | If included, the *DL Transmission Bandwidth* IE shall be ignored. | YES | ignore |
| *>TDD* |  |  |  |  | - |  |
| **>>TDD Info** |  | *1* |  |  | - |  |
| >>>NR FreqInfo | M |  | NR Frequency Info9.3.1.17 |  | - |  |
| >>>Transmission Bandwidth | M |  | Transmission Bandwidth9.3.1.15 | This IE is ignored if the UL Transmission Bandwidth IE and DL Transmission Bandwidth IE are included | - |  |
| >>>Intended TDD DL-UL Configuration | O |  | 9.3.1.89 |  |  YES | ignore |
| >>>TDD UL-DL Configuration Common NR | O |  | OCTET STRING | The *tdd-UL-DL-ConfigurationCommon* as defined in TS 38.331 [8] | YES | ignore |
| >>>Carrier List | O |  | NR Carrier List9.3.1.137 | If included, the Transmission Bandwidth IE shall be ignored. | YES | ignore |
| **>>>Transmission Bandwidth asymmetric** |  | *0..1* |  | This IE is included if the TDD carrier is asymmetric UL and DL | YES | ignore |
| >>>>UL Transmission Bandwidth | M |  | Transmission Bandwidth9.3.1.15 | .  | – |  |
| >>>>DL Transmission Bandwidth | M |  | Transmission Bandwidth9.3.1.15 |  | – |  |
| Measurement Timing Configuration | M |  | OCTET STRING | Contains the *MeasurementTimingConfiguration* inter-node message defined in TS 38.331 [8]. | - |  |
| RANAC | O |  | RAN Area Code9.3.1.57 |  | YES | ignore |
| **Extended Served PLMNs List** |  | *0..1* |  | This is included if more than 6 Served PLMNs is to be signalled. | YES | ignore |
| **>Extended Served PLMNs Item** |  | *1 ..<maxnoofExtendedBPLMNs>* |  |  | - |  |
| >>PLMN Identity | M |  | 9.3.1.14 |  | - |  |
| >>TAI Slice Support List | O |  | Slice Support List9.3.1.37 | Supported S-NSSAIs per PLMN or per SNPN.  | - |  |
| >>NPN Support Information | O |  | 9.3.1.156 | Supported NPNs per PLMN. | YES | reject |
| >>Extended TAI Slice Support List | O |  | Extended Slice Support List9.3.1.165 | Additional Supported S-NSSAIs per PLMN or per SNPN.  | YES | reject |
| Cell Direction | O |  | 9.3.1.78 |  | YES | ignore |
| Cell Type  | O |  | 9.3.1.87 |  | YES | ignore |
| **Broadcast PLMN Identity Info List** |  | *0..<maxnoofBPLMNsNR>* |  | This IE corresponds to the *PLMN-IdentityInfoList* IE and the *NPN-IdentityInfoList* IE (if available) in *SIB1* as specified in TS 38.331 [8]. All PLMN Identities and associated information contained in the *PLMN-IdentityInfoList* IE and NPN identities and associated information contained in the *NPN-IdentityInfoList* IE (if available) are included and provided in the same order as broadcast in SIB1.NOTE: In case of NPN-only cell, the PLMN Identities and associated information contained in the *PLMN-IdentityInfoList* IE are not included. | YES | ignore |
| >PLMN Identity List | M |  | Available PLMN List9.3.1.65 | Broadcast PLMN IDs in SIB1 associated to the *NR Cell Identity* IE | - |  |
| >Extended PLMN Identity List | O |  | Extended Available PLMN List9.3.1.76 |  | - |  |
| >5GS-TAC | O |  | OCTET STRING (3) |  | - |  |
| >NR Cell Identity | M |  | BIT STRING (36) |  | - |  |
| >RANAC | O |  | RAN Area Code9.3.1.57 |  | - |  |
| >Configured TAC Indication | O |  | 9.3.1.87a | NOTE: This IE is associated with the 5GS TAC in the *Broadcast PLMN Identity Info List* IE | YES | ignore |
| >NPN Broadcast Information | O |  | 9.3.1.157 | If this IE is included the content of the *PLMN Identity List* IE and *Extended PLMN Identity List* IE if present in the *Broadcast PLMN Identity Info List* IE is ignored. | YES | reject |
| Configured TAC Indication | O |  | 9.3.1.87a | NOTE: This IE is associated with the 5GS TAC on top-level of the *Served Cell Information* IE | YES | ignore |
| Aggressor gNB Set ID | O |  | 9.3.1.93 | This IE indicates the associated aggressor gNB Set ID of the cell | YES | ignore |
| Victim gNB Set ID | O |  | 9.3.1.93 | This IE indicates the associated Victim gNB Set ID of the cell | YES | ignore |
| IAB Info IAB-DU | O |  | 9.3.1.106 |  | YES | ignore |
| SSB Positions In Burst  | O |  | 9.3.1.138 |  | YES | ignore |
| NR PRACH Configuration | O |  | 9.3.1.139 |  | YES | ignore |
| SFN Offset | O |  | 9.3.1.208 |  | YES | ignore |
| NPN Broadcast Information | O |  | 9.3.1.157 |  | YES | reject |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofBPLMNs | Maximum no. of Broadcast PLMN Ids. Value is 6. |
| maxnoofExtendedBPLMNs | Maximum no. of Extended Broadcast PLMN Ids. Value is 6. |
| maxnoofBPLMNsNR | Maximum no. of PLMN Ids.broadcast in an NR cell. Value is 12. |

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### 9.4.5 Information Element Definitions

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IMPORTS

 id-gNB-CUSystemInformation,

 id-HandoverPreparationInformation,

 id-TAISliceSupportList,

 id-RANAC,

 id-BearerTypeChange,

 id-Cell-Direction,

 id-Cell-Type,

 id-CellGroupConfig,

 id-AvailablePLMNList,

 id-PDUSessionID,

 id-ULPDUSessionAggregateMaximumBitRate,

 id-DC-Based-Duplication-Configured,

 id-DC-Based-Duplication-Activation,

 id-Duplication-Activation,

 id-DLPDCPSNLength,

 id-ULPDCPSNLength,

 id-RLC-Status,

 id-MeasurementTimingConfiguration,

 id-DRB-Information,

 id-QoSFlowMappingIndication,

 id-ServingCellMO,

 id-RLCMode,

 id-ExtendedServedPLMNs-List,

 id-ExtendedAvailablePLMN-List,

 id-DRX-LongCycleStartOffset,

 id-SelectedBandCombinationIndex,

 id-SelectedFeatureSetEntryIndex,

 id-Ph-InfoSCG,

 id-latest-RRC-Version-Enhanced,

 id-RequestedBandCombinationIndex,

 id-RequestedFeatureSetEntryIndex,

 id-DRX-Config,

 id-UEAssistanceInformation,

 id-PDCCH-BlindDetectionSCG,

 id-Requested-PDCCH-BlindDetectionSCG,

 id-BPLMN-ID-Info-List,

 id-NotificationInformation,

 id-TNLAssociationTransportLayerAddressgNBDU,

 id-portNumber,

 id-AdditionalSIBMessageList,

 id-IgnorePRACHConfiguration,

 id-CG-Config,

 id-Ph-InfoMCG,

 id-AggressorgNBSetID,

 id-VictimgNBSetID,

 id-MeasGapSharingConfig,

 id-systemInformationAreaID,

 id-areaScope,

 id-IntendedTDD-DL-ULConfig,

 id-QosMonitoringRequest,

 id-BHInfo,

 id-IAB-Info-IAB-DU,

 id-IAB-Info-IAB-donor-CU,

 id-IAB-Barred,

 id-SIB12-message,

 id-SIB13-message,

 id-SIB14-message,

 id-UEAssistanceInformationEUTRA,

 id-SL-PHY-MAC-RLC-Config,

 id-SL-ConfigDedicatedEUTRA-Info,

 id-AlternativeQoSParaSetList,

 id-CurrentQoSParaSetIndex,

 id-CarrierList,

 id-ULCarrierList,

 id-FrequencyShift7p5khz,

 id-SSB-PositionsInBurst,

 id-NRPRACHConfig,

 id-TDD-UL-DLConfigCommonNR,

 id-CNPacketDelayBudgetDownlink,

 id-CNPacketDelayBudgetUplink,

 id-ExtendedPacketDelayBudget,

 id-TSCTrafficCharacteristics,

 id-AdditionalPDCPDuplicationTNL-List,

 id-RLCDuplicationInformation,

 id-AdditionalDuplicationIndication,

 id-mdtConfiguration,

 id-TraceCollectionEntityURI,

 id-NID,

 id-NPNSupportInfo,

 id-NPNBroadcastInformation,

 id-AvailableSNPN-ID-List,

 id-SIB10-message,

 id-RequestedP-MaxFR2,

 id-DLCarrierList,

 id-ExtendedTAISliceSupportList,

 id-E-CID-MeasurementQuantities-Item,

 id-ConfiguredTACIndication,

 id-NRCGI,

 id-SFN-Offset,

 id-TransmissionStopIndicator,

 id-SrsFrequency,

 id-EstimatedArrivalProbability,

 id-TRPType,

 id-SRSSpatialRelationPerSRSResource,

 id-PDCPTerminatingNodeDLTNLAddrInfo,

 id-ENBDLTNLAddress,

 id-PRS-Resource-ID,

 id-LocationMeasurementInformation,

 id-InterFrequencyConfig-NoGap,

 id-NeedForGapsInfoNR,

 id-ConfigRestrictInfoDAPS,

 id-L571Info,

 id-L1151Info,

 id-ServCellInfoList,

 id-Transmission-Bandwidth-asymmetric,

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TDD-Info ::= SEQUENCE {

 nRFreqInfo NRFreqInfo,

 transmission-Bandwidth Transmission-Bandwidth,

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

 ...

}

TDD-Info-ExtIEs F1AP-PROTOCOL-EXTENSION ::= {

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

 {ID id-TDD-UL-DLConfigCommonNR CRITICALITY ignore EXTENSION TDD-UL-DLConfigCommonNR PRESENCE optional }|

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

 {ID id-Transmission-Bandwidth-asymmetric CRITICALITY ignore EXTENSION Transmission-Bandwidth-asymmetric PRESENCE optional } , ...

}

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Transmission-Bandwidth ::= SEQUENCE {

 nRSCS NRSCS,

 nRNRB NRNRB,

 iE-Extensions ProtocolExtensionContainer { { Transmission-Bandwidth-ExtIEs} } OPTIONAL,

 ...

}

Transmission-Bandwidth-ExtIEs F1AP-PROTOCOL-EXTENSION ::= {

 ...

}

Transmission-Bandwidth-asymmetric ::= SEQUENCE {

 ul-Transmission-Bandwidth Transmission-Bandwidth,

 dl-Transmission-Bandwidth Transmission-Bandwidth,

 iE-Extensions ProtocolExtensionContainer { { Transmission-Bandwidth-asymmetric-ExtIEs} } OPTIONAL,

 ...

}

Transmission-Bandwidth-asymmetric-ExtIEs F1AP-PROTOCOL-EXTENSION ::= {

 ...

}

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### 9.4.7 Constant Definitions

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-- IEs

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id-PosMeasurementPeriodicityExtended ProtocolIE-ID ::= 438

id-PRS-Resource-ID ProtocolIE-ID ::= 439

id-LocationMeasurementInformation ProtocolIE-ID ::= 440

id-InterFrequencyConfig-NoGap ProtocolIE-ID ::= 651

id-L571Info ProtocolIE-ID ::= 659

id-L1151Info ProtocolIE-ID ::= 660

id-NeedForGapsInfoNR ProtocolIE-ID ::= 665

id-PosMeasurementPeriodicityNR-AoA ProtocolIE-ID ::= 672

id-ConfigRestrictInfoDAPS ProtocolIE-ID ::= 678

id-PosSItypeList ProtocolIE-ID ::= 682

id-DAPS-HO-Status ProtocolIE-ID ::= 683

id-UplinkTxDirectCurrentTwoCarrierListInfo ProtocolIE-ID ::= 684

id-ServCellInfoList ProtocolIE-ID ::= 707

id-Transmission-Bandwidth-asymmetric ProtocolIE-ID ::= xxx

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////