**3GPP TSG-RAN WG3 Meeting #123 *R3-240310***

**Athens, GR, 26 Feb – 01 Mar, 2024**

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| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.473** | **CR** | **1293** | **rev** | **-** | **Current version:** | **18.0.0** |  |
|  |
| *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:***  | Filter information for temporary capabilities restriction in Multi-SIM |
|  |  |
| ***Source to WG:*** | Huawei, Qualcomm Incorporated, Deutsche Telekom, ZTE, Samsung |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_DualTxRx\_MUSIM-Core |  | ***Date:*** | 2024-02-19 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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 indicate temporary capabilities restriction, it was specified in TS 38.331 that: * the gNB will configure *musim-CandidateBandList-r18* to the UE for reporting temporary capabilities restriction, as the band-filter list.
* in the UAI, the UE signals its temporary capabilities restrictions as forbidden band combinations **with band indexed to the band-filter list** and/or affected band combinations **with band indexed to the band-filter list** along with explicit fields for restricted (lower) capabilities e.g. maximum MIMO layers.

Thus, the forbidden/affected band combinations need to combine the UAI and band-filter list provided by gNB.In the CU/DU split architecture, the band-filter list is generated by the CU. When the CU receives MUSIM UAI from the UE, it should deliver it to the DU with the **band-filter list** together so that the DU can understand what the temporary capabilities restriction is to generate the proper configuration (e.g. MIMO layers configuration) based on UE temporary capabilities restriction. Otherwise, the DU cannot derive the forbidden/affected bands.  |
|  |  |
| ***Summary of change:*** | - Introduce the “*musim-CandidateBandList*” IE in the CU to DU RRC Information in the UE context setup request message and modification request message. |
|  |  |
| ***Consequences if not approved:*** | The gNB-DU cannot understand the forbidden and/or affected band combinations, and unable to generate the proper lower layer configuration. |
|  |  |
| ***Clauses affected:*** | 8.3.1.2, 8.3.4.2, 9.3.1.25, 9.4.5; 9.4.7 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specification  | 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:*** |  |

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| **Change Begins** |

### 8.3.1 UE Context Setup

#### 8.3.1.1 General

The purpose of the UE Context Setup procedure is to establish the UE Context including, among others, SRB,DRB, BH RLC channel, Uu Relay RLC channel, PC5 Relay RLC channel, and SL DRB configuration. The procedure uses UE-associated signalling.

#### 8.3.1.2 Successful Operation



Figure 8.3.1.2-1: UE Context Setup Request procedure: Successful Operation

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If the *LTM Complete Configuration Indicator* IE set to "complete" is contained in the *LTM Configuration* IE included in the UE CONTEXT SETUP RESPONSE message, the gNB-CU shall, if supported, consider that the LTM candidate configuration is a complete configuration.

If the *Indirect Path Addition* IE is contained in the *Path Addition Information* IE which is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, consider that the request concerns the indirect path addition for the MP Remote UE using PC5 link and use it as specified in TS 38.401 [4]. If the *N3C* *Indirect Path Addition* IE is contained in the *Path Addition Information* IE, the gNB-DU shall, if supported, consider that the request concerns the indirect path addition for the MP Remote UE using N3C and use it as specified in TS 38.401 [4].

If the *musim-CandidateBandList* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8].

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### 8.3.4 UE Context Modification (gNB-CU initiated)

#### 8.3.4.1 General

The purpose of the UE Context Modification procedure is to modify the established UE Context, e.g., establishing, modifying and releasing radio resources or sidelink resources. This procedure is also used to command the gNB-DU to stop data transmission for the UE for mobility (see TS 38.401 [4]). The procedure uses UE-associated signalling.

#### 8.3.4.2 Successful Operation



Figure 8.3.4.2-1: UE Context Modification procedure. Successful operation

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If the *Direct Path Addition* IE is contained in the *Path Addition Information* IE which is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, consider that the request concerns the direct path addition for the included *SpCell ID* IE as specified in TS 38.401 [4] and regard it as a reconfiguration with sync as defined in TS 38.331 [8]. If the *Indirect Path Addition* IE is contained in the *Path Addition Information* IE, the gNB-DU shall, if supported, consider that the request concerns the indirect path addition for the MP Remote UE using PC5 link and use it as specified in TS 38.401 [4]. If the *N3C* *Indirect Path Addition* IE is contained in the *Path Addition Information* IE, the gNB-DU shall, if supported, consider that the request concerns the indirect path addition for the MP Remote UE using N3C and use it as specified in TS 38.401 [4].

If the *S-NSSAI* IE is included within the *DRB to Be Modified Item* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, store the corresponding information and replace any existing information.

If the *musim-CandidateBandList* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8].

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#### 9.3.1.25 CU to DU RRC Information

This IE contains the RRC Information that are sent from gNB-CU to gNB-DU.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| CG-ConfigInfo | O |  | OCTET STRING | Includes the *CG-ConfigInfo* message, as defined in TS 38.331 [8]. | - |  |
| UE-CapabilityRAT-ContainerList | O |  | OCTET STRING | This IE is used in the NG-RAN and it includes *the UE-CapabilityRAT-ContainerList* IE, as defined in TS 38.331 [8]. | - |  |
| MeasConfig  | O |  | OCTET STRING | Includes the *MeasConfig* IE, as defined in TS 38.331 [8] (without the *MeasGapConfig* IE). For EN-DC/NGEN-DC operation, includes the list of FR2 frequencies for which the gNB-CU requests the gNB-DU to generate gaps.For NG-RAN, NE-DC and MN for NR-NR DC, includes the list of FR1 and/or FR2 frequencies, for which the gNB-CU requests the gNB-DU to generate gaps and the gap type (per-UE or per-FR). | - |  |
| Handover Preparation Information | O |  | OCTET STRING | Includes the *HandoverPreparationInformation* message, as defined in TS 38.331 [8]. | YES | ignore |
| CellGroupConfig | O |  | OCTET STRING | Includes the *CellGroupConfig* IE, as defined in TS 38.331 [8]. | YES | ignore |
| Measurement Timing Configuration | O |  | OCTET STRING | Contains the *MeasurementTimingConfiguration* inter-node message defined in TS 38.331 [8].In EN-DC/NGEN-DC, it is included when the gaps for FR2 are requested to be configured by the MeNB. For MN in NR-NR DC,it is included when the gaps for FR2 and/or FR1 are requested by the SgNB | YES | ignore |
| UEAssistanceInformation | O |  | OCTET STRING | Includes the *UEAssistanceInformation* message, as defined in TS 38.331 [8].  | YES | ignore |
| CG-Config | O |  | OCTET STRING | Includes the *CG-Config* message, as defined in TS 38.331 [8]. | YES | ignore |
| UEAssistanceInformationEUTRA | O |  | OCTET STRING | Includes the *UEAssistanceInformation* message, as defined in TS 36.331 [41]. | YES | ignore |
| Location Measurement Information | O |  | OCTET STRING | Includes the *LocationMeasurementInfo* IE, as defined in TS 38.331[8]  | YES | ignore |
| MUSIM-GapConfig | O |  | OCTET STRING | Includes the *MUSIM-GapConfig* IE as defined in TS 38.331 [8].  | YES | reject |
| SDT-MAC-PHY-CG-Config | O |  | OCTET STRING | Includes the *SDT-MAC-PHY-CG-Config* IE, as defined in TS 38.331 [8].  | YES | ignore |
| MBSInterestIndication | O |  | OCTET STRING | Includes the *MBSInterestIndication* message as defined in TS 38.331 [8]. | YES | ignore |
| NeedForGapsInfoNR | O |  | OCTET STRING | Includes the *NeedForGapsInfoNR* IE, as defined in TS 38.331 [8]. | YES | ignore |
| NeedForGapNCSG-InfoNR | O |  | OCTET STRING | Includes the *NeedForGapNCSG-InfoNR* IE, as defined in TS 38.331 [8]. | YES | ignore |
| NeedForGapNCSG-InfoEUTRA | O |  | OCTET STRING | Includes the *NeedForGapNCSG-InfoEUTRA* IE, as defined in TS 38.331 [8]. | YES | ignore |
| ConfigRestrictInfoDAPS | O |  | OCTET STRING | Includes the *ConfigRestrictInfoDAPS-r16* IE as defined in TS 38.331 [8]. This IE is used at the source node if DAPS HO is configured. | YES | ignore |
| Preconfigured measurement GAP Request | O |  | ENUMERATED(true, …) |  | YES | ignore |
| NeedForInterruptionInfoNR | O |  | OCTET STRING | Includes the *NeedForInterruptionInfoNR* IE, as defined in TS 38.331 [8]. | YES | ignore |
| musim-CapabilityRestrictionIndication | O |  | ENUMERATED (true, …) | Corresponds to the *musim-CapabilityRestrictionIndication-r18* IE, as defined in TS 38.331 [8]. | YES | ignore |
| musim-CandidateBandList | O |  | OCTET STRING | Includes the *musim-CandidateBandList* contained in the *OtherConfig* IE, as defined in TS 38.331 [8]. | YES | ignore |

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### 9.4.5 Information Element Definitions

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-- Information Element Definitions

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

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 id-Mobile-IAB-MT-UE-ID,

 id-MobileAccessPointLocation,

 id-SIBX-message,

 id-PDUSetQoSParameters,

 id-N6JitterInformation,

 id-ECNMarkingorCongestionInformationReportingRequest,

 id-ECNMarkingorCongestionInformationReportingStatus,

 id-ERedcap-Bcast-Information,

 id-NeedForInterruptionInfoNR,

 id-LTMCells-ToBeReleased-Item,

 id-MusimCandidateBandList,

 maxNRARFCN,

 maxnoofErrors,

 maxnoofBPLMNs,

 maxnoofBPLMNsNR,

 maxnoofDLUPTNLInformation,

 maxnoofNrCellBands,

 maxnoofULUPTNLInformation,

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

CUtoDURRCInformation ::= SEQUENCE {

 cG-ConfigInfo CG-ConfigInfo OPTIONAL,

 uE-CapabilityRAT-ContainerList UE-CapabilityRAT-ContainerList OPTIONAL,

 measConfig MeasConfig OPTIONAL,

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

 ...

}

CUtoDURRCInformation-ExtIEs F1AP-PROTOCOL-EXTENSION ::= {

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

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

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

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

 { ID id-CG-Config CRITICALITY ignore EXTENSION CG-Config PRESENCE optional }|

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

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

 { ID id-MUSIM-GapConfig CRITICALITY reject EXTENSION MUSIM-GapConfig PRESENCE optional }|

 { ID id-SDT-MAC-PHY-CG-Config CRITICALITY ignore EXTENSION SDT-MAC-PHY-CG-Config PRESENCE optional }|

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

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

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

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

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

 { ID id-Preconfigured-measurement-GAP-Request CRITICALITY ignore EXTENSION Preconfigured-measurement-GAP-Request PRESENCE optional }|

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

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

 { ID id-MusimCandidateBandList CRITICALITY ignore EXTENSION MusimCandidateBandList PRESENCE optional },

 ...

}

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

MultiplexingInfo ::= SEQUENCE{

 iAB-MT-Cell-List IAB-MT-Cell-List,

 iE-Extensions ProtocolExtensionContainer { {MultiplexingInfo-ExtIEs} } OPTIONAL

}

MultiplexingInfo-ExtIEs F1AP-PROTOCOL-EXTENSION ::= {

 ...

}

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

MusimCandidateBandList ::= OCTET STRING

M2Configuration ::= ENUMERATED {true, ...}

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### 9.4.7 Constant Definitions

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-- Constant definitions

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id-NRUESidelinkAggregateMaximumBitrateForA2X ProtocolIE-ID ::= 781

id-LTEUESidelinkAggregateMaximumBitrateForA2X ProtocolIE-ID ::= 782

id-NReRedCapUEIndication ProtocolIE-ID ::= 783

id-ERedcap-Bcast-Information ProtocolIE-ID ::= 784

id-NRPaginglongeDRXInformationforRRCINACTIVE ProtocolIE-ID ::= 785

id-MusimCandidateBandList ProtocolIE-ID ::= aaa -- to be allocated

END

-- ASN1STOP

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| **Change Ends** |