**3GPP TSG-RAN WG2 Meeting #115 electronic R2-2107375**

**Online, Aug. 16th – Aug. 27th, 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | 38.331 | **CR** | 2719 | **rev** | - | **Current version:** | 15.14.0 |  |
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| *For* [***HELP***](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 | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:***  | Clarification on full configuration-R15 |
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| ***Source to WG:*** | OPPO |
| ***Source to TSG:*** | R2 |
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| ***Work item code:*** | NR\_newRAT-Core |  | ***Date:*** | 2021-08-04 |
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| ***Category:*** | F |  | ***Release:*** | *Rel-15* |
|  | *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:*** | According to section 5.3.5.11, when full configuration is received, UE shall release the DRBs associated to each PDU session that a part of current configuration. The PDU session is released if the same PDU session is not added by *drb-ToAddModList*. In RRC resume procedrue, the full configuration indication can be included in *RRCResume* message while *drb-ToAddModList* is optional present. Therefore, if there is no *drb-ToAddModList* included in *RRCResume*, all DRBs will be released but SRB2 is present, which is not supported. |
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| ***Summary of change:*** | *drb-ToAddModList* is modified to be mandatory present when the *fullConfig* is included in the *RRCResume*.**Impact analysis**Impacted functionality: Full configuration Inter-operability: 1. If the network does not implement the CR and the UE does, the network will not mandatorily include the *drb-ToAddModList* when *full-Config* is included in *RRCResume* which will result in an unsupported configuration.
2. If the UE does not implement the CR and the network does, there is no impact.
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| ***Consequences if not approved:*** | There will exist an unsupported case where DRBs are released while SRB2 is present when *RRCResume* with full configuration is received. |
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| ***Clauses affected:*** | 6.3.2 |
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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:*** |  |
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| ***This CR's revision history:*** |  |

Start of the change

– *RadioBearerConfig*

The IE *RadioBearerConfig* is used to add, modify and release signalling and/or data radio bearers. Specifically, this IE carries the parameters for PDCP and, if applicable, SDAP entities for the radio bearers.

***RadioBearerConfig* information element**

-- ASN1START

-- TAG-RADIOBEARERCONFIG-START

RadioBearerConfig ::= SEQUENCE {

 srb-ToAddModList SRB-ToAddModList OPTIONAL, -- Cond HO-Conn

 srb3-ToRelease ENUMERATED{true} OPTIONAL, -- Need N

 drb-ToAddModList DRB-ToAddModList OPTIONAL, -- Cond HO-toNR

 drb-ToReleaseList DRB-ToReleaseList OPTIONAL, -- Need N

 securityConfig SecurityConfig OPTIONAL, -- Need M

 ...

}

SRB-ToAddModList ::= SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod

SRB-ToAddMod ::= SEQUENCE {

 srb-Identity SRB-Identity,

 reestablishPDCP ENUMERATED{true} OPTIONAL, -- Need N

 discardOnPDCP ENUMERATED{true} OPTIONAL, -- Need N

 pdcp-Config PDCP-Config OPTIONAL, -- Cond PDCP

 ...

}

DRB-ToAddModList ::= SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod

DRB-ToAddMod ::= SEQUENCE {

 cnAssociation CHOICE {

 eps-BearerIdentity INTEGER (0..15),

 sdap-Config SDAP-Config

 } OPTIONAL, -- Cond DRBSetup

 drb-Identity DRB-Identity,

 reestablishPDCP ENUMERATED{true} OPTIONAL, -- Need N

 recoverPDCP ENUMERATED{true} OPTIONAL, -- Need N

 pdcp-Config PDCP-Config OPTIONAL, -- Cond PDCP

 ...

}

DRB-ToReleaseList ::= SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity

SecurityConfig ::= SEQUENCE {

 securityAlgorithmConfig SecurityAlgorithmConfig OPTIONAL, -- Cond RBTermChange1

 keyToUse ENUMERATED{master, secondary} OPTIONAL, -- Cond RBTermChange

 ...

}

-- TAG-RADIOBEARERCONFIG-STOP

-- ASN1STOP

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| ***DRB-ToAddMod* field descriptions** |
| ***cnAssociation***Indicates if the bearer is associated with the *eps-bearerIdentity* (when connected to EPC) or *sdap-Config* (when connected to 5GC). |
| ***drb-Identity***In case of DC, the DRB identity is unique within the scope of the UE, i.e. an MCG DRB cannot use the same value as a split DRB. For a split DRB the same identity is used for the MCG and SCG parts of the configuration. |
| ***eps-BearerIdentity***The EPS bearer ID determines the EPS bearer. |
| ***reestablishPDCP***Indicates that PDCP should be re-established. Network sets this to *true* whenever the security key used for this radio bearer changes. Key change could for example be due to termination point change for the bearer, reconfiguration with sync, resuming an RRC connection, or the first reconfiguration after reestablishment. It is also applicable for LTE procedures when NR PDCP is configured. |
| ***recoverPDCP***Indicates that PDCP should perform recovery according to TS 38.323 [5]. |
| ***sdap-Config***The SDAP configuration determines how to map QoS flows to DRBs when NR or E-UTRA connects to the 5GC and presence/absence of UL/DL SDAP headers. |

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| ***RadioBearerConfig* field descriptions** |
| ***securityConfig***Indicates the security algorithm and key to use for the signalling and data radio bearers configured with the list in this IE *RadioBearerConfig*. When the field is not included after AS security has been activated, the UE shall continue to use the currently configured *keyToUse* and security algorithm for the radio bearers reconfigured with the lists in this IE *RadioBearerConfig*. The field is not included when configuring SRB1 before AS security is activated. |
| ***srb3-ToRelease***Release SRB3. SRB3 release can only be done over SRB1 and only at SCG release and reconfiguration with sync. |

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| ***SecurityConfig* field descriptions** |
| ***keyToUse***Indicates if the bearers configured with the list in this IE *RadioBearerConfig* are using the master key or the secondary key for deriving ciphering and/or integrity protection keys. For MR-DC, network should not configure SRB1 and SRB2 with secondary key and SRB3 with the master key. When the field is not included, the UE shall continue to use the currently configured *keyToUse* for the radio bearers reconfigured with the lists in this IE *RadioBearerConfig*. |
| ***securityAlgorithmConfig***Indicates the security algorithm for the signalling and data radio bearers configured with the list in this IE *RadioBearerConfig*. When the field is not included, the UE shall continue to use the currently configured security algorithm for the radio bearers reconfigured with the lists in this IE *RadioBearerConfig*. |

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| ***SRB-ToAddMod* field descriptions** |
| ***discardOnPDCP***Indicates that PDCP should discard stored SDU and PDU according to TS 38.323 [5]. |
| ***reestablishPDCP***Indicates that PDCP should be re-established. Network sets this to *true* whenever the security key used for this radio bearer changes. Key change could for example be due to reconfiguration with sync, for SRB2 when resuming an RRC connection, or at the first reconfiguration after RRC connection reestablishment in NR. For SRB1, when resuming an RRC connection, or at the first reconfiguration after RRC connection reestablishment in NR, the network does not set this field to *true*. For LTE SRBs using NR PDCP, it could be for handover, RRC connection reestablishment or resume. |
| ***srb-Identity***Value 1 is applicable for SRB1 only. Value 2 is applicable for SRB2 only. Value 3 is applicable for SRB3 only. |

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| **Conditional Presence** | **Explanation** |
| *RBTermChange* | The field is mandatory present in case of:- set up of signalling,- data radio bearer and change of termination point for the radio bearer between MN and SN.It is optionally present otherwise, Need S. |
| *RBTermChange1* | The field is mandatory present in case of:- set up of signalling and data radio bearer,- change of termination point for the radio bearer between MN and SN,- handover from E-UTRA/EPC or E-UTRA/5GC to NR,- handover from NR or E-UTRA/EPC to E-UTRA/5GC if the UE supports NGEN-DC.It is optionally present otherwise, Need S. |
| *PDCP* | The field is mandatory present if the corresponding DRB is being setup or corresponding DRB is reconfigured with NR PDCP or corresponding SRB associated with two RLC entities is being setup or if the number of RLC bearers associated with the DRB or SRB is changed. The field is optionally present, Need S, if the corresponding SRB associated with one RLC entity is being setup or corresponding SRB is reconfigured with NR PDCP; otherwise the field is optionally present, need M. |
| *DRBSetup* | The field is mandatory present if the corresponding DRB is being setup; otherwise the field is optionally present, need M. |
| *HO-Conn* | The field is mandatory present- in case of inter-system handover from E-UTRA/EPC to E-UTRA/5GC or NR,- or when the *fullConfig* is included in the *RRCReconfiguration* message and NE-DC/NR-DC is not configured,- or in case of *RRCSetup*.Otherwise the field is optionally present, need N.Upon *RRCSetup*, only SRB1 can be present. |
| *HO-toNR* | The field is mandatory present- in case of inter-system handover from E-UTRA/EPC to E-UTRA/5GC or NR,- or when the *fullConfig* is included in the *RRCReconfiguration* message and NE-DC/NR-DC is not configured.- or when the *fullConfig* is included in the *RRCResume*.In case of *RRCSetup*, the field is absent; otherwise the field is optionally present, need N. |

End of the change