3GPP TSG-RAN WG3 #116-e R3-223855

9th – 19th May 2022

Online

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.423** | **CR** | **0775** | **rev** | **1** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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:*** | Correction on RACH based SDT | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE. China Telecm, CATT, Intel Corporation | | | | | | | | | |
| ***Source to TSG:*** | RAN3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_SmallData\_INACTIVE | | | | |  | ***Date:*** | | | 2022-04-20 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | 7 |
|  | *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 can be 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | During Retrieve UE Context procedure for SDT handling, the anchor node shall, if deciding to relocate UE context, indicate the SDT DRB list and SDT SRB list to the new node. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | If the anchor node decides to provide UE context to the new node, it shall include SDT DRB list and SDT SRB list in the RETRIEVE UE CONTEXT RESPONSE message. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The new node have no idea which SDT DRBs and SDT SRBs are configured, then it cannot initiate the subsequent F1AP and E1AP procedure for the SDT handling. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.2.4, 9.1.1.9, 9.2.3.xxx (new), ASN.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

## *----------Start the Change--------------*

### 8.2.4 Retrieve UE Context

#### 8.2.4.1 General

The purpose of the Retrieve UE Context procedure is to either retrieve the UE context from the old NG-RAN node and transfer it to the NG-RAN node where the UE RRC Connection has been requested to be established, or to enable the old NG-RAN node to forward an RRC message to the UE via the new NG-RAN node without context transfer, or to request for small data transmission.

The procedure uses UE-associated signalling.

#### 8.2.4.2 Successful Operation



Figure 8.2.4.2-1: Retrieve UE Context, successful operation

The new NG-RAN node initiates the procedure by sending the RETRIEVE UE CONTEXT REQUEST message to the old NG-RAN node.

<Skip unchanged part>

If the *SDT Support Request* IE is included in the RETRIEVE UE CONTEXT REQUEST message, the old NG-RAN node shall, if supported, consider that the UE has requested for SDT as defined in TS 38.300 [9]. In case the old NG-RAN node decides to relocate the UE context to the new NG-RAN node as specified in TS 38.300 [9], the old NG-RAN node shall, if supported, include the *SDT Configuration Information* IE within the *UE Context Information – Retrieve UE Context Response* IE carried in the RETRIEVE UE CONTEXT RESPONSE message.

If the *UE Slice-Maximum Bit Rate List* IE is contained in RETRIEVE UE CONTEXT RESPONSE message, the new NG-RAN node shall, if supported, store the received UE Slice Maximum Bit Rate List in the UE context, and use the received UE Slice Maximum Bit Rate value for each S-NSSAI for the concerned UE as specified in TS 23.501 [7].

If the *Positioning Information* IE is contained in the RETRIEVE UE CONTEXT RESPONSE message, the new NG-RAN node shall, if supported, take it into account to allocate proper SRS resources and make corresponding response to LMF when positioning a UE.

<Skip unchanged part>

9.2.1.13 UE Context Information – Retrieve UE Context Response

This IE contains the UE context information within the RETRIEVE UE CONTEXT RESPONSE message.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| NG-C UE associated Signalling reference | M |  | AMF UE NGAP ID  9.2.3.26 | Allocated at the AMF on the old NG-C connection. | – |  |
| Signalling TNL Association Address at source NG-C side | M |  | CP Transport Layer Information  9.2.3.31 | This IE indicates the AMF’s IP address of the SCTP association used at the source NG-C interface instance.  Note: If no UE TNLA binding exists at the source NG-RAN node, the source NG-RAN node indicates the TNL association address it would have selected if it would have had to create a UE TNLA binding. | – |  |
| UE Security Capabilities | M |  | 9.2.3.49 |  | – |  |
| AS Security Information | M |  | 9.2.3.50 |  | – |  |
| UE Aggregate Maximum Bit Rate | M |  | 9.2.3.17 |  | – |  |
| PDU Session Resources To Be Setup List | M |  | 9.2.1.1 |  | – |  |
| RRC Context | M |  | OCTET STRING | Includes the *HandoverPreparationInformation* message as defined in subclause 11.2.2 of TS 38.331[10] if the old and new serving NG-RAN nodes are gNBs.  Includes either the *HandoverPreparationInformation* message as defined in subclause 10.2.2 of TS 36.331 [14] or the *HandoverPreparationInformation-NB* message as defined in subclause 10.6.2 of TS 36.331 [14], if the old and new serving NG-RAN nodes are ng-eNBs. | – |  |
| Mobility Restriction List | O |  | 9.2.3.53 |  | – |  |
| Index to RAT/Frequency Selection Priority | O |  | 9.2.3.23 |  | – |  |
| 5GC Mobility Restriction List Container | O |  | 9.2.3.100 |  | YES | ignore |
| NR UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.2.3.107 | This IE applies only if the UE is authorized for NR V2X services. | YES | ignore |
| LTE UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.2.3.108 | This IE applies only if the UE is authorized for LTE V2X services. | YES | Ignore |
| UE Radio Capability ID | O |  | 9.2.3.138 |  | YES | reject |
| MBS Session Information List | O |  | 9.2.1.36 |  | YES | ignore |
| No PDU Session Indication | O |  | ENUMERATED (true, ...) | Applicable to IAB only. | YES | ignore |
| 5G ProSe UE PC5 Aggregate Maximum Bit Rate | O |  | NR UE Sidelink Aggregate Maximum Bit Rate  9.2.3.107 | This IE applies only if the UE is authorized for 5G ProSe services. | YES | ignore |
| UE Slice Maximum Bit Rate List | O |  | 9.2.3.167 |  | YES | reject |
| Positioning Information | O |  | 9.2.3.168 |  | YES | ignore |
| SDT Configuration Information | O |  | 9.2.3.xxx |  |  |  |

<Skip unchanged part>

#### 9.2.3.xxx SDT Configuration Information

This IE contains the DRB and SRB configuration Information for NR SDT.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| **SDT DRB Configuration List** |  | *0..1* |  |  | YES | ignore |
| **>SDT DRB Configuration Item** |  | *1 .. <maxnoofDRBs>* |  |  | – |  |
| >>DRB ID | M |  | 9.2.3.33 |  | – |  |
| **SDT SRB Configuration List** |  | *0..1* |  |  | YES | ignore |
| **>SDT SRB Configuration Item** |  | *1 .. <maxnoofSRBs>* |  |  | – |  |
| >>SRB ID | M |  | 9.2.3.165 | In this version of the specification, values "0", ”1”, "3", and "4" shall not be set by the sender and ignored by the receiver. | – |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofDRBs | Maximum no. of DRB allowed towards one UE, the maximum value is 32. |
| maxnoofSRBs | Maximum no. of SRB allowed towards one UE, the maximum value is 5. |

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### 9.3.4 PDU Definitions

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-- PDU definitions for XnAP.

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

<Skip unchanged part>

SDTSupportRequest,

SDT-Termination-Request,

SDTPartialUEContextInfo,

SDTDataForwardingDRBList,

SDTConfigurationInfo,

PEIPSassistanceInformation,

UESliceMaximumBitRateList,

PagingCause

<Skip unchanged part>

### 9.3.5 Information Element definitions

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

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-- Information Element Definitions

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

<Skip unchanged part>

id-Local-NG-RAN-Node-Identifier,

id-Neighbour-NG-RAN-Node-List,

id-FiveGProSeUEPC5AggregateMaximumBitRate,

id-Redcap-Bcast-Information,

id-UESliceMaximumBitRateList,

id-PositioningInformation,

id-ServedCellSpecificInfoReq-NR,

id-SDTConfigurationInfo,

maxEARFCN,

maxnoofAllowedAreas,

maxnoofAMFRegions,

maxnoofAoIs,

maxnoofBPLMNs,

maxnoofCAGs,

maxnoofCAGsperPLMN,

maxnoofCellsinAoI,

<Skip unchanged part>

-- S

S-NSSAIListQoE ::= SEQUENCE (SIZE(1..maxnoofSNSSAIforQMC)) OF S-NSSAI

S-BasedMDT ::= SEQUENCE {

ng-ran-TraceID NG-RANTraceID,

iE-Extension ProtocolExtensionContainer { {S-BasedMDT-ExtIEs} } OPTIONAL,

...

}

S-BasedMDT-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

ServiceType ::= ENUMERATED{

qMC-for-streaming-service,

qMC-for-MTSI-service,

qMC-for-VR-service,

...

}

SecondarydataForwardingInfoFromTarget-Item::= SEQUENCE {

secondarydataForwardingInfoFromTarget DataForwardingInfoFromTargetNGRANnode,

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

...

}

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

...

}

SecondarydataForwardingInfoFromTarget-List ::= SEQUENCE (SIZE(1..maxnoofMultiConnectivityMinusOne)) OF SecondarydataForwardingInfoFromTarget-Item

SCGActivationRequest ::= ENUMERATED {activate-scg, deactivate-scg, ...}

SCGActivationStatus ::= ENUMERATED {scg-activated, scg-deactivated, ...}

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

SCGIndicator ::= ENUMERATED{released, ...}

SCGFailureReportContainer ::= OCTET STRING

SDTSupportRequest ::= SEQUENCE {

sdtindicator SDTIndicator,

sdtAssistantInfo SDTAssistantInfo OPTIONAL,

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

...

}

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

...

}

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

SDTAssistantInfo ::= ENUMERATED {single-packet, multiple-packets, ...}

SDT-Termination-Request ::= ENUMERATED {radio-link-problem, normal, ...}

SDTPartialUEContextInfo ::= SEQUENCE {

dRBsToBeSetup SDT-DRBsToBeSetupList,

sRBsToBeSetup SDT-SRBsToBeSetupList OPTIONAL,

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

...

}

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

...

}

SDT-DRBsToBeSetupList ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF SDT-DRBsToBeSetupList-Item

SDT-DRBsToBeSetupList-Item ::= SEQUENCE {

drb-ID DRB-ID,

uL-TNLInfo UPTransportParameters,

dRB-RLC-Bearer-Configuration OCTET STRING,

dRB-QoS QoSFlowLevelQoSParameters,

rLC-Mode RLCMode,

s-nssai S-NSSAI,

pDCP-SNLength PDCPSNLength,

iE-Extensions ProtocolExtensionContainer { { SDT-DRBsToBeSetupList-Item-ExtIEs} } OPTIONAL,

...

}

SDT-DRBsToBeSetupList-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

SDT-SRBsToBeSetupList ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF SDT-SRBsToBeSetupList-Item

SDT-SRBsToBeSetupList-Item ::= SEQUENCE {

srb-ID SRB-ID,

sRB-RLC-Bearer-Configuration OCTET STRING,

iE-Extensions ProtocolExtensionContainer { { SDT-SRBsToBeSetupList-Item-ExtIEs} } OPTIONAL,

...

}

SDT-SRBsToBeSetupList-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

SRB-ID ::= INTEGER (0..4, ...)

SDTDataForwardingDRBList ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF SDTDataForwardingDRBList-Item

SDTDataForwardingDRBList-Item ::= SEQUENCE {

drb-ID DRB-ID,

dL-TNLInfo UPTransportParameters OPTIONAL,

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

...

}

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

...

}

SDTConfigurationInfo ::= SEQUENCE {

sDT-DRBConfig SDT-DRBConfigList OPTIONAL,

sDT-SRBConfig SDT-SRBConfigList OPTIONAL,

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

...

}

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

...

}

SDT-DRBConfigList ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF SDT-DRBConfigList-Item

SDT-DRBConfigList-Item ::= SEQUENCE {

drb-ID DRB-ID,

iE-Extensions ProtocolExtensionContainer { { SDT-DRBConfigList-Item-ExtIEs} } OPTIONAL,

...

}

SDT-DRBConfigList-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

SDT-SRBConfigList ::= SEQUENCE (SIZE(1..maxnoofSRBs)) OF SDT-SRBConfigList-Item

SDT-SRBConfigList-Item ::= SEQUENCE {

srb-ID SRB-ID,

iE-Extensions ProtocolExtensionContainer { { SDT-SRBConfigList-Item-ExtIEs} } OPTIONAL,

...

}

SDT-SRBConfigList-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

SecondaryRATUsageInformation ::= SEQUENCE {

pDUSessionUsageReport PDUSessionUsageReport OPTIONAL,

qosFlowsUsageReportList QoSFlowsUsageReportList OPTIONAL,

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

...

}

<Skip unchanged part>

-- U

<Skip unchanged part>

UEContextInfoRetrUECtxtResp ::= SEQUENCE {

ng-c-UE-signalling-ref AMF-UE-NGAP-ID,

signalling-TNL-at-source CPTransportLayerInformation,

ueSecurityCapabilities UESecurityCapabilities,

securityInformation AS-SecurityInformation,

ue-AMBR UEAggregateMaximumBitRate,

pduSessionResourcesToBeSetup-List PDUSessionResourcesToBeSetup-List,

rrc-Context OCTET STRING,

mobilityRestrictionList MobilityRestrictionList OPTIONAL,

indexToRatFrequencySelectionPriority RFSP-Index OPTIONAL,

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

...

}

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

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

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

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

{ ID id-UERadioCapabilityID CRITICALITY reject EXTENSION UERadioCapabilityID PRESENCE optional }|

{ ID id-MBS-SessionInformation-List CRITICALITY ignore EXTENSION MBS-SessionInformation-List PRESENCE optional }|

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

{ ID id-FiveGProSeUEPC5AggregateMaximumBitRate CRITICALITY ignore EXTENSION FiveGProSeUEPC5AggregateMaximumBitRate PRESENCE optional }|

{ ID id-UESliceMaximumBitRateList CRITICALITY reject EXTENSION UESliceMaximumBitRateList PRESENCE optional }|

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

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

...

}

UEHistoryInformation ::= SEQUENCE (SIZE(1..maxnoofCellsinUEHistoryInfo)) OF LastVisitedCell-Item

UEHistoryInformationFromTheUE ::= CHOICE {

nR NRMobilityHistoryReport,

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

}

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

...

}

### 9.3.7 Constant definitions

-- ASN1START

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

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-- Constant definitions

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

<Skip unchanged part>

id-UESliceMaximumBitRateList ProtocolIE-ID ::= 358

id-S-NG-RANnodeUE-Slice-MBR ProtocolIE-ID ::= 359

id-PositioningInformation ProtocolIE-ID ::= 360

id-UEAssistantIdentifier ProtocolIE-ID ::= 361

id-SDTConfigurationInfo ProtocolIE-ID ::= xxx

END

-- ASN1STOP

## *----------End of the Change--------------*