**3GPP TSG-RAN WG3 #113-e R3-214258**

**16-26 Aug 2021**

**Online**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.413** | **CR** | **0645** | **rev** | **1** | **Current version:** | **16.6.0** |  |
|  | | | | | | | | |
| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <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:*** | Missing QoS Flows not Admitted List in HANDOVER COMMAND | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE,Samsung,China Unicom,China Telecom,Co-signer ? | | | | | | | | | |
| ***Source to TSG:*** | R3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16 | | | | |  | ***Date:*** | | | 2021-08-17 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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 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:*** | | The 5G QoS model is based on QoS Flows.The QoS Flow is the finest granularity of QoS differentiation in the PDU Session. During Handover, it is possible that not all QoS flows in admitted PDU Session are accepted by target gNB. Take XNAP as example, in HANDOVER REQUEST ACKNOWLEDGE message, the target gNB sends back both admitted and not admitted QoS flows list in PDU Session Resources Admitted List IE. Based on the information, source gNB is able to aware failure reason for not allowed QoS flows and can do further handover optimization  However for NG Based Handover, the failed QoS flows list is missing in HANDOVER COMMAND message. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduce QoS Flow Failed to Setup List IE in HANDOVER COMMAND message.  Impact Analysis:  Impact assessment towards the previous version of the specification (same release):  This CR has no impact with the previous version of the specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Misalignment of behavior between XNAP and NGAP regarding QoS flows list not admitted. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.3.4.10, 9.4.5, 9.4.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Rev 1: correct version from 16.5.0 to 16.6.0, addiing co-signer? | | | | | | | | |

*Change Start*

#### 9.3.4.10 Handover Command Transfer

This IE is transparent to the AMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| DL Forwarding UP TNL Information | O |  | UP Transport Layer Information  9.3.2.2 | To deliver forwarded DL PDUs. | - |  |
| **QoS Flow to be Forwarded List** |  | *0..1* |  | QoS flows associated with the *DL Forwarding UP TNL Information* IE. | - |  |
| **>QoS Flow to be Forwarded Item** |  | *1..<maxnoofQoSFlows>* |  |  | - |  |
| >>QoS Flow Identifier | M |  | 9.3.1.51 |  | - |  |
| Data Forwarding Response DRB List | O |  | 9.3.1.77 |  | - |  |
| Additional DL Forwarding UP TNL Information | O |  | QoS Flow per TNL Information List  9.3.2.1 | NG-RAN node endpoint to deliver forwarded DL PDUs for split PDU session, together with associated QoS flows to be forwarded. | YES | ignore |
| UL Forwarding UP TNL Information | O |  | UP Transport Layer Information  9.3.2.2 | To deliver forwarded UL PDUs | YES | reject |
| Additional UL Forwarding UP TNL Information | O |  | UP Transport Layer Information List  9.3.2.12 | NG-RAN node endpoint to deliver forwarded UL PDUs for split PDU session. | YES | reject |
| Data Forwarding Response E-RAB List | O |  | 9.3.1.121 |  | YES | ignore |
| QoS Flow Failed to Setup List | O |  | QoS Flow List with Cause  9.3.1.13 |  | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofQoSFlows | Maximum no. of QoS flows allowed within one PDU session. Value is 64. |

*Next of Change*

### 9.4.5 Information Element Definitions

-- ASN1START

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

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-- Information Element Definitions

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

NGAP-IEs {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

--unchanged part

id-UserLocationInformationW-AGF,

id-qosFlowFailedToSetupList,

maxnoofAllowedAreas,

maxnoofAllowedCAGsperPLMN,

maxnoofAllowedS-NSSAIs,

maxnoofBluetoothName,

*Next of Change*

-- H

HandoverCommandTransfer ::= SEQUENCE {

dLForwardingUP-TNLInformation UPTransportLayerInformation OPTIONAL,

qosFlowToBeForwardedList QosFlowToBeForwardedList OPTIONAL,

dataForwardingResponseDRBList DataForwardingResponseDRBList OPTIONAL,

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

...

}

HandoverCommandTransfer-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

{ ID id-AdditionalDLForwardingUPTNLInformation CRITICALITY ignore EXTENSION QosFlowPerTNLInformationList PRESENCE optional }|

{ ID id-ULForwardingUP-TNLInformation CRITICALITY reject EXTENSION UPTransportLayerInformation PRESENCE optional }|

{ ID id-AdditionalULForwardingUPTNLInformation CRITICALITY reject EXTENSION UPTransportLayerInformationList PRESENCE optional }|

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

{ ID id-qosFlowFailedToSetupList CRITICALITY ignore EXTENSION QosFlowListWithCause PRESENCE optional },

...

}

*Next of Change*

### 9.4.7 Constant Definitions

-- ASN1START

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

--

-- Constant definitions

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

NGAP-Constants {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

--

-- IE parameter types from other modules.

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

IMPORTS

ProcedureCode,

ProtocolIE-ID

FROM NGAP-CommonDataTypes;

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

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-- Elementary Procedures

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

--unchanged part

id-Extended-RANNodeName ProtocolIE-ID ::= 273

id-Extended-AMFName ProtocolIE-ID ::= 274

id-GlobalCable-ID ProtocolIE-ID ::= 275

id-QosMonitoringReportingFrequency ProtocolIE-ID ::= 276

id-QosFlowParametersList ProtocolIE-ID ::= 277

id-QosFlowFeedbackList ProtocolIE-ID ::= 278

id-BurstArrivalTimeDownlink ProtocolIE-ID ::= 279

id-ExtendedUEIdentityIndexValue ProtocolIE-ID ::= 280

id-qosFlowFailedToSetupList ProtocolIE-ID ::= 281

END

-- ASN1STOP

*End of Change*