**3GPP TSG-CT3 Meeting #120-e *C3-221199***

**E-Meeting, 17th – 25th February 2022 (Revision of C3-22xxxx)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.513** | **CR** | 0332 | **rev** | **-** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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 |  | Core Network | **X** |

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| ***Title:*** | QoS Mapping at SMF+PGW-C for interworking scenario | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | en5GPccSer17 | | | | |  | ***Date:*** | | | 2022-02-25 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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 QoS mapping at SMF+PGW-C for interworking scenario is not defined yet. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The QoS mapping at SMF+PGW-C for interworking scenario is defined. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The SMF+PGW-C can’t perform the QoS mapping correctly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 1, 2, 7.4, 7.4.1(new), 7.4.x(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[4] 3GPP TS 23.503: "Policy and Charging Control Framework for the 5G System; Stage 2".

[5] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[6] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[7] 3GPP TS 29.507: "5G System; Access and Mobility Policy Control Service; Stage 3".

[8] 3GPP TS 29.508: "5G System; Session Management Event Exposure Service; Stage 3".

[9] 3GPP TS 29.512: "5G System; Session Management Policy Control Service; Stage 3".

[10] 3GPP TS 29.514: "5G System; Policy Authorization Service; Stage 3".

[11] 3GPP TS 29.520: "5G System; Network Data Analytics Services; Stage 3".

[12] 3GPP TS 29.519: "5G System; Usage of the Unified Data Repository Service for Policy Data, Application Data and Structured Data for Exposure; Stage 3".

[13] Void

[14] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction".

[15] 3GPP TS 29.201: "Representational State Transfer (REST) reference point between Application Function (AF) and Protocol Converter (PC)".

[16] IETF RFC 4566: "SDP: Session Description Protocol".

[17] 3GPP TS 26.247: "Transparent end-to-end Packet-switched Streaming Service (PSS) Progressive Download and Dynamic Adaptive Streaming over HTTP (3GP-DASH)".

[18] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".

[19] 3GPP TS 26.234: "End-to-end transparent streaming service; Protocols and codecs".

[20] 3GPP2 C.S0046-0 v1.0: "3G Multimedia Streaming Services".

[21] 3GPP2 C.S0055-A v1.0: "Packet Switched Video Telephony Services (PSVT/MCS)".

[22] 3GPP TS 29.521: "5G System; Binding Support Management Service; Stage 3".

[23] 3GPP TS 29.594: "5G System; Spending Limit Control Service; Stage 3".

[24] 3GPP TS 29.522: "5G System; Network Exposure Function Northbound APIs; Stage 3".

[25] 3GPP TS 29.551: "5G System; Packet Flow Description Management Service; Stage 3".

[26] 3GPP TS 29.554: "5G System; Background Data Transfer Policy Control Service; Stage 3".

[27] 3GPP TS 29.504: "5G System; Unified Data Repository Services; Stage 3".

[28] 3GPP TS 32.240: "Charging management; Charging architecture and principles".

[29] IETF RFC 6733: "Diameter Base Protocol".

[30] 3GPP TS 29.213: "Policy and charging control signalling flows and Quality of Service (QoS) parameter mapping".

[31] 3GPP TS 29.525: "UE Policy Control Service; Stage 3".

[32] 3GPP TS 29.518: "Access and Mobility Management Services; Stage 3".

[33] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

[34] 3GPP TS 29.122: "T8 reference point for northbound Application Programming Interfaces (APIs)".Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

[35] 3GPP TS 24.292: "IP Multimedia (IM) Core Network (CN) subsystem Centralized Services (ICS); Stage 3".

[36] IETF RFC 3556: "Session Description Protocol (SDP) Bandwidth Modifiers for RTP Control Protocol (RTCP) Bandwidth".

[37] IETF RFC 3890: "A Transport Independent Bandwidth Modifier for the Session Description Protocol (SDP)".

[38] IETF RFC 5761: "Multiplexing RTP Data and Control Packets on a Single Port".

[39] IETF RFC 4145: "TCP-Based Media Transport in the Session Description Protocol (SDP)".

[40] IETF RFC 4975: "The Message Session Relay Protocol (MSRP)".

[41] 3GPP TS 24.229: " IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[42] IETF RFC 4412: "Communications Resource Priority for the Session Initiation Protocol (SIP)".

[43] IETF RFC 3264: "An Offer/Answer model with the Session Description Protocol (SDP)".

[44] 3GPP TS 23.216: “Single Radio Voice Call Continuity (SRVCC); Stage 2”.

[45] 3GPP TS 23.380: "IMS Restoration Procedures".

[46] 3GPP TS 23.221: "Architectural requirements".

[47] 3GPP TS 29.505: "5G System; Usage of the Unified Data Repository Service for Subscription Data; Stage 3".

[48] 3GPP TS 29.552: "5G System; Network Data Analytics signalling follows; Stage 3".

[49] 3GPP TS 29.523: "5G System; Policy Control Event Exposure Service; Stage 3".

[50] 3GPP TS 29.534: "5G System; Access and Mobility Policy Authorization Service; Stage 3".

[51] 3GPP TS 29.510: "5G System; Network function repository services; Stage 3".

[52] 3GPP TS 29.502: "5G System; Session Management Services; Stage 3".

[x] 3GPP TS 29.212: "Policy and Charging Control (PCC); Reference points".

\*\*\* Next Change \*\*\*

## 7.4 QoS parameter mapping Functions at SMF

### 7.4.1 QoS parameter mapping Functions in 5GC

Table 7.4.1.1: Rules for derivation of the Authorized QoS Parameters per QoS flow  
from the Authorized QoS Parameters in SMF

|  |  |
| --- | --- |
| Authorized QoS Parameter per QoS flow (NOTE 1) | Derivation from Authorized QoS Parameters |
| **Maximum Authorized Bandwidth DL and UL per QoS flow** | Maximum Authorized Bandwidth DL/UL per QoS flow = Sum of Maximum Authorized Data Rate DL/UL for all PCC rules bound to that Qos flow.  For PCC rules which are bound to the same QoS flow and have the same sharing key value, the highest MBR value among those PCC rules may be used as input for calculating the common MBR value based on internal logic as defined in subclause 4.2.6.2.8 of 3GPP TS 29.512 [9]. |
| **Guaranteed Authorized Data Rate DL and UL per QoS flow** | Guaranteed Authorized Data Rate DL/UL per QoS flow = Sum of Guaranteed Authorized Data Rate DL/UL for all PCC rules bound to that QoS flow.  For PCC rules which are bound to the same QoS flow and have the same sharing key value, the highest GBR value among those PCC rules shall be used as input for calculating the common GBR value as defined in subclause 4.2.6.2.8 of 3GPP TS 29.512 [9]. |
| **Session-AMBR DL and UL** | For all non-GBR QoS flows, Session-AMBR DL/UL is applied. |
| **5QI** | 5QI from PCC rules having the same value combination of 5QI/ARP/QNC/PL/AW/MDBV is used. |
| **ARP** | ARP from PCC rules having the same value combination of 5QI/ARP/QNC/PL/AW/MDBV  is used. |
| **QNC** | QNC from PCC rules having the same value combination of 5QI/ARP/QNC/PL/AW/MDBV  is used. |
| **Priority Level (PL)** | PL from PCC rules having the same value combination of 5QI/ARP/QNC/PL/AW/MDBV  is used. |
| **Averaging Window (AW)** | AW from PCC rules having the same value combination of 5QI/ARP/QNC/PL/AW/MDBV  is used. Applicable for GBR or delay critical GBR QoS flow. |
| **Maximum Data Burst Volume (MDBV)** | MDBV from PCC rules having the same value combination of 5QI/ARP/QNC/PL/AW/MDBV  is used. Applicable for delay critical GBR QoS flow. |
| **RQI** | RQI from PCC rules is used per service data flow. Applicable for non-GBR QoS flows. |
| **Maximum Packet Loss Rate DL and UL per QoS flow** | Minimum maximum packet loss rate DL/UL among all PCC rules bound to that QoS flow. Applicable for GBR QoS flows. |
| NOTE: For unstructured PDU session type, only default 5QI and ARP of the QoS Flow associated with the default QoS rule, and Session-AMBR are applicable. | |

\*\*\* Next Change \*\*\*

### 7.4.x QoS parameter mapping Functions at SMF+PGW-C for interworking scenario

Table 7.4.x.1: Rules for derivation of the Authorized QoS Parameters per EPS bearer  
from the Authorized QoS Parameters in SMF+PGW-C

|  |  |
| --- | --- |
| Authorized QoS Parameter per EPS bearer | Derivation from Authorized QoS Parameters (NOTE 2) |
| **Maximum Authorized Bandwidth DL and UL per EPS bearer** | Maximum Authorized Bandwidth DL/UL per EPS bearer = Sum of Maximum Authorized Data Rate DL/UL for all PCC rules bound to that EPS bearer as described in subclause 4.5.5.3 of 3GPP TS 29.212 [x].  For PCC rules which are bound to the same EPS bearer and have the same sharing key value, the highest MBR value among those PCC rules may be used as input for calculating the common MBR value based on internal logic as defined in subclause 4.5.5.11 of 3GPP TS 29.212 [x]. |
| **Guaranteed Authorized Data Rate DL and UL per QoS flow** | Guaranteed Authorized Data Rate DL/UL per EPS bearer = Sum of Guaranteed Authorized Data Rate DL/UL for all PCC rules bound to that EPS bearer as described in subclause 4.5.5.3 of 3GPP TS 29.212 [x].  For PCC rules which are bound to the same EPS bearer and have the same sharing key value, the highest GBR value among those PCC rules shall be used as input for calculating the common GBR value as defined in subclause 4.5.5.11 of 3GPP TS 29.212 [x]. |
| **APN-AMBR DL and UL** | Set according to the operator policy. |
| **QCI** | For standardized 5QIs, the authorized QCI is one to one mapped from the 5QI;  For non-standarized 5QIs, the authorized QCI is derived based on the authorized 5QI and operator policy;  For the subscribed default 5QI, one to one map the subscribed default QCI to the subscribed default 5QI. |
| **ARP** | One to one mapping to the value derived as described in table 7.4.1.1. |
| **Maximum Packet Loss Rate DL and UL per EPS bearer** | One to one mapping to the value derived as described in table 7.4.1.1. |
| NOTE 1 The delay critical 5QI mapping to QCI is upspecified in the present specification.  NOTE 2 Other Authorized QoS parameters that do not have a corresponding mapping in EPS remain uchanged in the SMF+PGW-C for possible future access of the UE to 5GC. | |

\*\*\* End of Changes \*\*\*