**3GPP TSG-CT WG1 Meeting #123-eC1-202118**

**Electronic meeting, 16-24 April 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.587** | **CR** | **0010** | **rev** | **-** | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Non-standardized QoS characteristics over PC5-S | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | OPPO | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eV2XARC | | | | |  | ***Date:*** | | | 2020-3-30 |
|  |  | | | |  | |  | | |  |
| ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In subclause 8.4.5, there is one FFS:  Editor's note: Whether GFBR and MFBR for both uplink and downlink are necessary is FFS.  In this release, the GFBR and MFBR for both UL and DL have the same value. It seems that only one value for both UL and DL per GFBR or MFBR is possible.  However, considering the forward compatability, this CR proposes to remain one value for UL and one value for DL, i.e. just remove the above FFS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Remove the above FFS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Whether GFBR and MFBR for both uplink and downlink are necessary is not clear. | | | | | | | | |
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| ***Clauses affected:*** | | 8.4.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\* \* \* First Change \* \* \* \*

### 8.4.5 PC5 QoS flow descriptions

The purpose of the PC5 QoS flow descriptions information element is to indicate a set of PC5 QoS flow descriptions to be used by the UE over the direct link, where each PC5 QoS flow description is a set of parameters as described in clause 5.4.2 of 3GPP TS 23.287 [3].

The PC5 QoS flow descriptions is a type 6 information element with a minimum length of 6 octets. The maximum length for the information element is 65538 octets.

The PC5 QoS flow descriptions information element is coded as shown in figure 8.4.5.1, figure 8.4.5.2, figure 8.4.5.3, figure 8.4.5.4, and table 8.4.5.1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| PC5 QoS flow descriptions IEI | | | | | | | | octet 1 |
| Length of PC5 QoS flow descriptions contents | | | | | | | | octet 2  octet 3 |
| PC5 QoS flow description 1 | | | | | | | | octet 4  octet u |
| PC5 QoS flow description 2 | | | | | | | | octet u+1  octet v |
| ... | | | | | | | | octet v+1  octet w |
| PC5 QoS flow description n | | | | | | | | octet w+1  octet x |

Figure 8.4.5.1: PC5 QoS flow descriptions information element

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | | 6 | | 5 | | 4 | | 3 | 2 | | 1 |  |
| 0  Spare | | 0  Spare | PQFI | | | | | | | | | | octet 4 |
| Operation code | | | | 0  Spare | | 0  Spare | | 0  Spare | | 0  Spare | 0  Spare | | octet 5 |
| 0  Spare | | E | Number of parameters | | | | | | | | | | octet 6 |
| Parameters list | | | | | | | | | | | | | octet 7\*  octet u\* |

Figure 8.4.5.2: PC5 QoS flow description

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Parameter 1 | | | | | | | | octet 7  octet m |
| Parameter 2 | | | | | | | | octet m+1  octet n |
| ... | | | | | | | | octet n+1  octet o |
| Parameter n | | | | | | | | octet o+1  octet u |

Figure 8.4.5.3: Parameters list

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Parameter identifier | | | | | | | | octet 7 |
| Length of parameter contents | | | | | | | | octet 8 |
| Parameter contents | | | | | | | | octet 9  octet m |

Figure 8.4.5.4: Parameter

Table 8.4.4.1: PC5 QoS flow descriptions information element

|  |
| --- |
| PC5 QoS flow identifier (PQFI) (bits 6 to 1 of octet 4)  PQFI field contains the PC5 QoS flow identifier.  Bits  6 5 4 3 2 1  0 0 0 0 0 1 PQFI 1  to  1 1 1 1 1 1 PQFI 63  The UE shall not set the PQFI value to 0. |
| Operation code (bits 8 to 6 of octet 5)  Bits  8 7 6  0 0 1 Create new PC5 QoS flow description  0 1 0 Delete existing PC5 QoS flow description  0 1 1 Modify existing PC5 QoS flow description  All other values are reserved. |
| E bit (bit 7 of octet 6)  For the "create new PC5 QoS flow description" operation, the E bit is encoded as follows:  Bit 7  0 reserved  1 parameters list is included  For the "Delete existing PC5 QoS flow description" operation, the E bit is encoded as follows:  Bit 7  0 parameters list is not included  1 reserved  For the "modify existing PC5 QoS flow description" operation, the E bit is encoded as follows:  Bit 7  0 extension of previously provided parameters  1 replacement of all previously provided parameters  If the E bit is set to "parameters list is not included", the number of parameters field has zero value. If the E bit is set to "parameters list is included", the number of parameters field has non-zero value. If the E bit is set to "extension of previously provided parameters" or "replacement of all previously provided parameters", the number of parameters field has non-zero value. If the E bit is set to "extension of previously provided parameters" and one of the parameters in the new parameters list already exists in the previously provided parameters, the parameter shall be set to the new value.  Number of parameters (bits 6 to 1 of octet 6)  The number of parameters field contains the binary coding for the number of parameters in the parameters list field. The number of parameters field is encoded in bits 6 through 1 of octet 6 where bit 6 is the most significant and bit 1 is the least significant bit.  Parameters list (octets 7 to u)  The parameters list contains a variable number of parameters.  Each parameter included in the parameters list is of variable length and consists of:  - a parameter identifier (1 octet);  - the length of the parameter contents (1 octet); and - the parameter contents itself (variable amount of octets).  The parameter identifier field is used to identify each parameter included in the parameters list and it contains the hexadecimal coding of the parameter identifier. Bit 8 of the parameter identifier field contains the most significant bit and bit 1 contains the least significant bit. In this version of the protocol, the following parameter identifiers are specified:  - 01H (PQI); - 02H (GFBR);  - 03H (MFBR);  - 04H (Averaging window).  If the parameters list contains a parameter identifier that is not supported by the receiving entity the corresponding parameter shall be discarded.  The length of parameter contents field contains the binary coded representation of the length of the parameter contents field. The first bit in transmission order is the most significant bit.  When the parameter identifier indicates PQI, the parameter contents field contains the binary representation of PQI that is one octet in length.  PQI:  Bits  8 7 6 5 4 3 2 1  0 0 0 0 0 0 0 0 Reserved  0 0 0 0 0 0 0 1  to Spare  0 0 0 1 0 1 0 0  0 0 0 1 0 1 0 1 PQI 21  0 0 0 1 0 1 1 0 PQI 22  0 0 0 1 0 1 1 1 PQI 23  0 0 0 1 1 0 0 0  to Spare  0 0 1 1 0 1 1 0  0 0 1 1 0 1 1 1 PQI 55  0 0 1 1 1 0 0 0 PQI 56  0 0 1 1 1 0 0 1 PQI 57  0 0 1 1 1 0 1 0 PQI 58  0 0 1 1 1 0 1 1 PQI 59  0 0 1 1 1 1 0 0  to Spare  0 1 0 1 1 0 0 1  0 1 0 1 1 0 1 0 PQI 90  0 1 0 1 1 0 1 1 PQI 91  0 1 0 1 1 1 0 0  to Spare  0 1 1 1 1 1 1 1  1 0 0 0 0 0 0 0  to Operator-specific PQIs  1 1 1 1 1 1 1 0  1 1 1 1 1 1 1 1 Reserved  The network shall consider all other values not explicitly defined in this version of the protocol as unsupported.  When the parameter identifier indicates "GFBR", the parameter contents field contains one octet indicating the unit of the guaranteed flow bit rate followed by two octets containing the value of the guaranteed flow bit rate.  Unit of the guaranteed flow bit rate (octet 1)  Bits  8 7 6 5 4 3 2 1  0 0 0 0 0 0 0 0 value is not used  0 0 0 0 0 0 0 1 value is incremented in multiples of 1 Kbps  0 0 0 0 0 0 1 0 value is incremented in multiples of 4 Kbps  0 0 0 0 0 0 1 1 value is incremented in multiples of 16 Kbps  0 0 0 0 0 1 0 0 value is incremented in multiples of 64 Kbps  0 0 0 0 0 1 0 1 value is incremented in multiples of 256 Kbps  0 0 0 0 0 1 1 0 value is incremented in multiples of 1 Mbps  0 0 0 0 0 1 1 1 value is incremented in multiples of 4 Mbps  0 0 0 0 1 0 0 0 value is incremented in multiples of 16 Mbps  0 0 0 0 1 0 0 1 value is incremented in multiples of 64 Mbps  0 0 0 0 1 0 1 0 value is incremented in multiples of 256 Mbps  0 0 0 0 1 0 1 1 value is incremented in multiples of 1 Gbps  0 0 0 0 1 1 0 0 value is incremented in multiples of 4 Gbps  0 0 0 0 1 1 0 1 value is incremented in multiples of 16 Gbps  0 0 0 0 1 1 1 0 value is incremented in multiples of 64 Gbps  0 0 0 0 1 1 1 1 value is incremented in multiples of 256 Gbps  0 0 0 1 0 0 0 0 value is incremented in multiples of 1 Tbps  0 0 0 1 0 0 0 1 value is incremented in multiples of 4 Tbps  0 0 0 1 0 0 1 0 value is incremented in multiples of 16 Tbps  0 0 0 1 0 0 1 1 value is incremented in multiples of 64 Tbps  0 0 0 1 0 1 0 0 value is incremented in multiples of 256 Tbps  0 0 0 1 0 1 0 1 value is incremented in multiples of 1 Pbps  0 0 0 1 0 1 1 0 value is incremented in multiples of 4 Pbps  0 0 0 1 0 1 1 1 value is incremented in multiples of 16 Pbps  0 0 0 1 1 0 0 0 value is incremented in multiples of 64 Pbps  0 0 0 1 1 0 0 1 value is incremented in multiples of 256 Pbps  Other values shall be interpreted as multiples of 256 Pbps in this version of the protocol.  Value of the guaranteed flow bit rate (octets 2 and 3)  Octets 2 and 3 represent the binary coded value of the guaranteed flow bit rate in units defined by the unit of the guaranteed flow bit rate.  When the parameter identifier indicates "MFBR", the parameter contents field contains the one octet indicating the unit of the maximum flow bit rate followed by two octets containing the value of maximum flow bit rate.  Unit of the maximum flow bit rate (octet 1)  The coding is identical to that of the unit of the guaranteed flow bit rate.  Value of the maximum flow bit rate (octets 2 and 3)  Octets 2 and 3 represent the binary coded value of the maximum flow bit rate in units defined by the unit of the maximum flow bit rate.  When the parameter identifier indicates "averaging window", the parameter contents field contains the binary representation of the averaging window for both uplink and downlink in milliseconds and the parameter contents field is two octets in length. |
|  |
| NOTE: The GFBR and MFBR apply to both uplink and downlink. |

Editor's note: The details of non-standardized PC5 QoS characteristics are FFS.

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