**3GPP TSG-CT WG1 Meeting #131-eC1-214434**

**E-meeting, 19-27 August 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **27.007** | **CR** | **0744** | **rev** | **-** | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *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 |  |

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| ***Title:*** | Add the missing QCI and PTI mismatch | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | OPPO | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SAES17 | | | | |  | ***Date:*** | | | 2021-6-18 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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:*** | | 1. The QCI=80 for non-GBR QoS flow has been added to TS 23.303 and TS 24.301. But this QCI is missing in 10.1.26 and 10.1.27.  The same value of 5QI has already been in 10.1.49 Define 5GS quality of service +C5GQOS.  2. in clause 9.2.2.2.2 "Errors for EPS", the "PTI mismatch" is missing while it is one ESM cause value in TS 24.301. Also this value is present under Errors for 5GS. | | | | | | | | |
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| ***Summary of change:*** | | Add QCI=80 and "PTI mismatch". | | | | | | | | |
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| ***Consequences if not approved:*** | | QCI=80 and "PTI mismatch" are missing. | | | | | | | | |
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| ***Clauses affected:*** | | 9.2.2.2.2, 10.1.26, 10.1.27 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*\*\*

##### 9.2.2.2.2 Errors for EPS

Numeric Text

126 Insufficient resources (#26)  
127 Missing or unknown APN (#27)  
128 Unknown PDN type (#28)  
129 User authentication or authorization failed (#29)  
130 Activation rejected by Serving GW or PDN GW (#30)  
131 Request rejected, unspecified (#31)  
132 Service option not supported (#32)  
133 Requested service option not subscribed (#33)  
134 Service option temporarily out of order (#34)  
135 PTI already in use (#35)  
136 Regular deactivation (#36) NOTE 2  
137 EPS QoS not accepted (#37) NOTE 2  
141 Semantic error in the TFT operation (#41)  
142 Syntactical error in the TFT operation (#42)  
143 Invalid EPS bearer identity (#43)  
144 Semantic errors in packet filter(s) (#44)  
145 Syntactical errors in packet filter(s) (#45)  
171 Last PDN disconnection not allowed (#49) NOTE 3  
172 Semantically incorrect message (#95) NOTE 2  
173 Invalid mandatory information (#96) NOTE 2  
174 Message type non-existent or not implemented (#97) NOTE 2  
175 Conditional IE error (#100) NOTE 2  
176 Protocol error, unspecified (#111) NOTE 2  
177 Operator determined barring (#8)  
178 Maximum number of EPS bearers reached (#65)  
179 Requested APN not supported in current RAT and PLMN combination (#66)  
181 unsupported QCI value (#59)  
184 Invalid PTI value (#81)  
186 Message not compatible with protocol state (#101) NOTE 2  
190 Network failure (#38) NOTE 2  
191 Reactivation requested (#39) NOTE 2  
192 PDN type IPv4 only allowed (#50) NOTE 2  
193 PDN type IPv6 only allowed (#51) NOTE 2  
194 Single address bearers only allowed (#52) NOTE 2  
195 Collision with network initiated request (#56) NOTE 2  
196 PDN type IPv4v6 only allowed (#57) NOTE 2  
197 PDN type non IP only allowed (#58) NOTE 2  
198 Bearer handling not supported (#60) NOTE 2  
199 APN restriction value incompatible with active EPS bearer context (#112) NOTE 2  
200 Multiple accesses to a PDN connection not allowed (#113) NOTE 2  
201 ESM information not received (#53) NOTE 2  
202 PDN connection does not exist (#54) NOTE 2  
203 Multiple PDN connections for a given APN not allowed (#55) NOTE 2  
208 Message type not compatible with protocol state (#98) NOTE 2  
209 Information element non-existent or not implemented (#99) NOTE 2  
221 PTI mismatch (#47)  
230 PDN type Ethernet only allowed (#61)

NOTE 1: Values in parentheses are 3GPP TS 24.301 [83] cause codes.

NOTE 2: This error code was given a numeric value in 3GPP Rel‑15, but was introduced in an earler release.

NOTE 3: The numeric error code for "Last PDN disconnection not allowed (#49)" is returned when the MT detects an attempt to disconnect the last PDN or the network returns a response message with cause value #49. The numeric error code was changed to 171 in 3GPP Rel‑11.

\*\*\*\*\* Second change \*\*\*\*\*

### 10.1.26 Define EPS quality of service +CGEQOS

Table 10.1.26-1: +CGEQOS parameter command syntax

| Command | Possible Response(s) |
| --- | --- |
| +CGEQOS=[<cid>[,<QCI>[,<DL\_GBR>,<UL\_GBR>[,<DL\_MBR>,<UL\_MBR>]]]] | *+CME ERROR: <err>* |
| +CGEQOS? | [+CGEQOS: <cid>,<QCI>,[<DL\_GBR>,<UL\_GBR>],[<DL\_MBR>,<UL\_MBR>]]  [<CR><LF>+CGEQOS: <cid>,<QCI>,[<DL\_GBR>,<UL\_GBR>],[<DL\_MBR>,<UL\_MBR>]  [...]] |
| +CGEQOS=? | +CGEQOS: (range of supported <cid>s),(list of supported <QCI>s),(list of supported <DL\_GBR>s),(list of supported <UL\_GBR>s),(list of supported <DL\_MBR>s),(list of supported <UL\_MBR>s) |

**Description**

The set command allows the TE to specify the EPS Quality of Service parameters <cid>, <QCI>, [<DL\_GBR> and <UL\_GBR>] and [<DL\_MBR> and <UL\_MBR>] for a PDP context or Traffic Flows (see 3GPP TS 24.301 [83] and 3GPP TS 23.203 [85]). When in UMTS/GPRS the MT applies a mapping function to UTMS/GPRS Quality of Service. Refer subclause 9.2 for possible <err> values.

A special form of the set command, +CGEQOS= <cid> causes the values for context number <cid> to become undefined.

The read command returns the current settings for each defined QoS.

The test command returns the ranges of the supported parameters as compound values.

**Defined values**

<cid>: integer type; specifies a particular EPS Traffic Flows definition and a PDP Context definition (see the +CGDCONT and +CGDSCONT commands).

<QCI>: integer type; specifies a class of EPS QoS (see 3GPP TS 23.203 [85] and 3GPP TS 24.301 [83]).

0 QCI is selected by network

[1 – 4] value range for guaranteed bit rate Traffic Flows

[71 – 76] value range for guaranteed bit rate Traffic Flows

[82 – 85] value range for guaranteed bit rate Traffic Flows

[5 – 9] value range for non-guaranteed bit rate Traffic Flows

79, 80 value for non-guaranteed bit rate Traffic Flows

[128 – 254] value range for Operator-specific QCIs

The QCI values 65, 66, 67, 69 and 70 are not allowed to be requested by the UE. If the TE requests a QCI parameter 65, 66, 67, 69 or 70, the MT responds with result code +CME ERROR: 181 (unsupported QCI value).

<DL\_GBR>: integer type; indicates DL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<UL\_GBR>: integer type; indicates UL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<DL\_MBR>: integer type; indicates DL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<UL\_MBR>: integer type; indicates UL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

**Implementation**

Optional.

\*\*\*\*\* Third change \*\*\*\*\*

### 10.1.27 EPS quality of service read dynamic parameters +CGEQOSRDP

Table 10.1.27-1: +CGEQOSRDP action command syntax

| Command | Possible Response(s) |
| --- | --- |
| +CGEQOSRDP[=<cid>] | [+CGEQOSRDP: <cid>,<QCI>,[<DL\_GBR>,<UL\_GBR>],[<DL\_MBR>,<UL\_MBR>][,<DL\_AMBR>,<UL\_AMBR>]]  [<CR><LF>+CGEQOSRDP: <cid>,<QCI>,[<DL\_GBR>,<UL\_GBR>],[<DL\_MBR>,<UL\_MBR>][,<DL\_AMBR>,<UL\_AMBR>]  [...]] |
| +CGEQOSRDP=? | +CGEQOSRDP: (list of <cid>s associated with active contexts) |
| NOTE: The syntax of the AT Set Command is corrected to be according to ITU‑T Recommendation V.250 [14]. Older versions of the specification specify incorrect syntax +CGEQOSRDP=[<cid>] | |

**Description**

The execution command returns the Quality of Service parameters <QCI>, [<DL\_GBR> and <UL\_GBR>] and [<DL\_MBR> and <UL\_MBR>] of the active secondary or non secondary PDP context associated to the provided context identifier <cid>.

If the parameter <cid> is omitted, the Quality of Service parameters for all secondary and non secondary active PDP contexts are returned.

The test command returns a list of <cid>s associated with secondary or non secondary active PDP contexts.

Parameters of both network and MT/TA initiated PDP contexts will be returned.

**Defined values**

<cid>: integer type; specifies a particular Traffic Flows definition and a PDP Context definition (see the +CGDCONT and +CGDSCONT commands).

<QCI>: integer type; specifies a class of EPS QoS (see 3GPP TS 23.203 [85] and 3GPP TS 24.301 [83]).

0 QCI is selected by network

[1 – 4] value range for guaranteed bit rate Traffic Flows

65, 66, 67 values for guaranteed bit rate Traffic Flows

[71 – 76] value range for guaranteed bit rate Traffic Flows

[82 – 85] value range for guaranteed bit rate Traffic Flows

[5 – 9] value range for non-guaranteed bit rate Traffic Flows

69, 70, 79, 80 values for non-guaranteed bit rate Traffic Flows

[128 – 254] value range for Operator-specific QCIs

<DL\_GBR>: integer type; indicates DL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<UL\_GBR>: integer type; indicates UL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<DL\_MBR>: integer type; indicates DL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<UL\_MBR>: integer type; indicates UL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<DL\_AMBR>: integer type; indicates DL APN aggregate MBR (see 3GPP TS 24.301 [83]). The value is in kbit/s.

<UL\_AMBR>: integer type; indicates UL APN aggregate MBR (see 3GPP TS 24.301 [83]). The value is in kbit/s.

NOTE: If multiple lines in a response belong to the same PDN connection they contain the same <DL\_AMBR> <UL\_AMBR> values.

**Implementation**

Optional.