**3GPP TSG-SA WG6 Meeting #49-bis-e S6-22xxxx**

**e-meeting, 22nd June – 1st July 2022 (revision of S6-221733/1910)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.289** | **CR** | **0083** | **rev** | **2** | **Current version:** | 18.2.0 |  |
|  | | | | | | | | |
| *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 | **X** |

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| ***Title:*** | Clarification on MBS QoS | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Hisilicon | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MCOver5MBS | | | | |  | ***Date:*** | | | 2022-06-06 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | R18 |
|  | *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 handling for MBS is missing in 23.289.  The MBS QCI value is the same as unicast QCI value for MC service. | | | | | | | | |
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| ***Summary of change:*** | | Introduce the descriptions on MBS QoS handling | | | | | | | | |
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| ***Consequences if not approved:*** | | Lose the reference to MBS QoS handling defined in 23.247. | | | | | | | | |
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| ***Clauses affected:*** | | 4.3.1, 4.3.2, 4.3.3.2, 4.3.3.3, 4.3.4.2, 4.3.4.3, 4.3.5.2, 4.3.5.3 | | | | | | | | |
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|  | | **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 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**

### 4.3.1 General

In 5GS, quality of service is enforced at QoS flow level and corresponding packets are classified and marked with an identifier in accordance with 3GPP TS 23.501 [7]. Every QoS flow is characterized by a QoS profile provided by the 5GC, and can be used for all connectivity types (PDU sessions) in accordance with 3GPP TS 23.501 [7].

5G QoS characteristics, standardized or non-standardized, are indicated through the 5QI value in accordance with 3GPP TS 23.501 [7]. Standardized 5QI values have a one-to-one mapping to a standardized combination of 5G QoS characteristics and non-standardized 5QI values allows a dynamic assignment of QoS parameter values.

NOTE 1: The use of non-standardized 5QI values can be subject for harmonisation within the individual user area.

The QoS parameter Allocation Retentions Priority (ARP) determines the priority level, the pre-emption capability and the pre-emption vulnerability of each QoS flow. ARP priority level defines the relative importance of a resource request to allow in deciding whether a new QoS Flow may be accepted or needs to be rejected in the case of resource limitations in accordance with 3GPP TS 23.501 [7].

NOTE 2: The use of ARP is regulated by the individual MC service.

The use of Multicast Broadcast Services (MBS) for MC services shall apply QoS handling as determined by 3GPP TS 23.247 [15].

### 4.3.2 QoS requirements for general purposes

The selection, deployment, initiation, and termination of QoS signalling and resource allocation shall consider the QoS mechanisms described in 3GPP TS 23.501 [7], 3GPP TS 23.502 [10], 3GPP TS 23.503 [9] and 3GPP TS 23.247 [15] for MBS.

MC system as well as MC service UE may share one DNN using multiple QoS flows for the settlement of MC services, application plane and signalling plane.

For the transport of SIP-1 reference point signalling, the standardized 5QI value of 69 in accordance with 3GPP TS 23.501 [7] shall be used.

For the transport of HTTP-1 reference point signalling, the standardized 5QI value of 8 in accordance with 3GPP TS 23.501 [7] or better shall be used.

MC services shall use standardized 5QI values or may use non-standardized 5QI values in accordance with 3GPP TS 23.501.

When the MC system utilizes IMS services, at least one QoS flow shall be associated for IMS signalling. The generic mechanisms for interaction between QoS and session signalling applicable for the use of IMS in the 5GS context are defined in 3GPP TS 23.228 [2].

**/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Changes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**

#### 4.3.3.2 5QI values for MCPTT

The MCPTT system may use the N5 reference point or Rx reference point for direct interaction with 5GS PCF to determine the required QoS flow parameters. Alternatively, the MCPTT system may use the N33 reference point for indirect interaction with 5GS NEF.

For the use of MBS, the MCPTT system may interact with the PCF/MB-SMF/NEF/MBSF to provide the corresponding QoS information.

A QoS flow (unicast or multicast/broadcast) for an MCPTT voice call and MCPTT-4/MCPTT-9 reference point signalling shall utilize 5QI value 65 in accordance with 3GPP TS 23.501 [7] and 3GPP TS 23.247 [15].

#### 4.3.3.3 Use of priorities

The QoS flow (unicast or multicast/broadcast) for an MCPTT emergency call shall have highest priority level among MCPTT call types. The QoS flow (unicast or multicast/broadcast) for MCPTT imminent peril call shall have higher priority level than one for a MCPTT call.

Depending on operators' policy, the MCPTT system may be able to request modification of the priority (ARP) of an established QoS flow (unicast or multicast/broadcast).

NOTE: Operators' policy takes into account regional/national requirements.

**/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Changes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**

#### 4.3.4.2 5QI values for MCVideo

The MCVideo system may use the N5 reference point or Rx reference point for direct interaction with 5GS PCF to determine the required QoS flow parameters. Alternatively, the MCVideo system may use the N33 reference point for indirect interaction with 5GS NEF.

For the use of MBS, the MCVideo system may interact with the PCF/MB-SMF/NEF/MBSF to provide the corresponding QoS information.

Video media and control of the video media may use independent QoS flows (unicast or multicast/broadcast) and utilizes 5QI values depending on the MCVideo mode of the MCVideo call/session, as per table 4.3.4.2-1.

Table 4.3.4.2-1: MCVideo mode associated 5QI values

| MCVideo mode | 5QI value utilized (in accordance with 3GPP TS 23.501 [7]) |
| --- | --- |
| Urgent real-time mode | 67 |
| Non-urgent real-time mode | 67 |
| Non real-time mode | 4 |

For transmission and reception control signalling, the 5QI value 69 is recommended in accordance with 3GPP TS 23.501 [7] and 3GPP TS 23.247 [15].

#### 4.3.4.3 Use of priorities

The MCVideo audio media and video media may transmit over dedicated QoS flows (unicast or multicast/broadcast), in which case the priority for each QoS flow (unicast or multicast/broadcast) is determined by the operator policy.

MCVideo services shall be able to use ARP pre-emption capability and the pre-emption vulnerability of each individual QoS flow (unicast or multicast/broadcast) according to operators' policy. Depending on operators' policy, the MCVideo system may be able to request modification of the priority (ARP) of an established QoS flow (unicast or multicast/broadcast).

NOTE: Operator policy takes into account regional/national requirements.

**/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Changes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**

#### 4.3.5.2 5QI values for MCData

The MCData system may use the N5 reference point or Rx reference point for direct interaction with 5GS PCF to determine the required QoS flow parameters. Alternatively, the MCData system may use the N33 reference point for indirect interaction with 5GS NEF.

For the use of MBS, the MCData system may interact with the PCF/MB-SMF/NEF/MBSF to provide the corresponding QoS information.

A QoS flow (unicast or multicast/broadcast) for MCData media may utilize standardized 5QI value 70 or may utilize non-standardized 5QI values in accordance with 3GPP TS 23.501 [7] and 3GPP TS 23.247 [15].

#### 4.3.5.3 Use of priorities

The QoS flows (unicast or multicast/broadcast) for MCData emergency communications shall have highest priority level among MCData communication types. The QoS flow (unicast or multicast/broadcast) for MCData imminent peril call shall have higher priority level than one for a MCData communication.

MCData services shall be able to use ARP pre-emption capability and the pre-emption vulnerability of each individual QoS flow (unicast or multicast/broadcast) according to operators' policy.

NOTE: Operators' policy takes into account regional/national requirements.

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