**3GPP TSG- Meeting #**

**, , - 2024**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  |
| *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:***  | QMC support for application session delivered via the MBS communication service |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *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 canbe 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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | RAN3 informated SA4 in S4-241805/R3-244789 about their conclusion that a UE configured to conduct QMC for application sessions delivered via the MBS communication service. RAN3 agreed that the UE should be notified whether the measurement configuration pertains to MBS broadcast or MBS multicast mode. To enable the UE to conduct QMC for the correct MBS mode cooperation with SA4 is needed. The present CR provides the addition that the UE is enabled to distinguish whether the QMC configuration pertains to MBS multicast or whether it pertains to sessions that do not use MBS at all. |
|  |  |
| ***Summary of change:*** | A new MBSCommunicationServiceType attribute is added to the DASH quality reporting scheme. This attribute indicates, whether the measurement configuration pertains to MBS broadcast or MBS multicast mode.  |
|  |  |
| ***Consequences if not approved:*** | QMC over MBS Communication cannot be supported. |
|  |  |
| ***Clauses affected:*** | 2, 10.5 |
|  |  |
|  | **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 \*\*\*\*

# 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 TS 22.233: "Transparent End-to-End Packet-switched Streaming Service; Stage 1".

[2] 3GPP TS 26.233: "Transparent end-to-end Packet-switched Streaming service (PSS); General description".

[3] 3GPP TS 26.234: "Transparent end-to-end packet switched streaming service (PSS); Protocols and codecs".

[4] 3GPP TS 26.244: "Transparent end-to-end packet switched streaming service (PSS); 3GPP file format (3GP)".

[5] 3GPP TS 26.245: "Transparent end-to-end packet switched streaming service (PSS); Timed text format".

[6] 3GPP TS 26.246: "Transparent end-to-end packet switched streaming service (PSS); 3GPP SMIL Language Profile".

[7] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[8] IETF STD 0007: "Transmission Control Protocol", Postel J., September 1981.

[9] IETF RFC 9112: "HTTP/1.1", June 2022..

[10] Open Mobile Alliance, Service and Content Protection for Mobile Broadcast Services, Approved Version 1.0, February 2009.

[11] ISO/IEC 14496-12:2012 | 15444-12:2012 "Information technology - Coding of audio-visual objects - Part 12: ISO base media file format" | "Information technology - JPEG 2000 image coding system - Part 12: ISO base media file format".

[12] IETF RFC 2818: "HTTP Over TLS", E. Rescorla, May 2000.

[13] IETF RFC 5646: "Tags for Identifying Languages", A. Phillips, M. Davis, September 2009.

[14] (void)

[15] Open Mobile Alliance: "DRM Content Format V 2.0".

[16] Open Mobile Alliance: "DRM Content Format V 2.1".

[17] IETF RFC 3986: "Uniform Resource Identifiers (URI): Generic Syntax", Berners-Lee T., Fielding R. and Masinter L., January 2005.

[18] IETF RFC 1952: "GZIP file format specification" version 4.3,P. Deutsch, May 1996.

[19] IETF RFC 1738: "Uniform Resource Locators (URL)", December 1994.

[20] (void)

[21] (void)

[22] OMA-ERELD-DM-V1\_2-20070209-A: "Enabler Release Definition for OMA Device
+Management, Approved Version 1.2"

[23] 3GPP TS 33.310: "Network Domain Security (NDS); Authentication Framework (AF)".

[24] IETF RFC 2045: "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies".

[25] IETF RFC 2231: "MIME Parameter Value and Encoded Word Extensions: Character Sets, Languages, and Continuations".

[26] IETF RFC 6381: "The 'Codecs' and 'Profiles' Parameters for "Bucket" Media Types," August 2011.

[27] Void.

[28] IEEE 1003.1-2008, IEEE Standard for Information Technology - Portable Operating System Interface (POSIX), Base Specifications, Issue 7

[29] IETF RFC 4337, "MIME Type Registration for MPEG-4," March 2006

[30] IETF RFC 3023, "XML Media Types," January 2001.

[31] 3GPP TS 23.203: "Policy and charging control architecture".

[32] 3GPP TS 29.213: "Policy and Charging Control signalling flows and Quality of Service (QoS) parameter mapping".

[33] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".

[34] void

[35] ITU-T Recommendation H.264 (04/2013): "Advanced video coding for generic audiovisual services".

[36] 3GPP TR 26.946: "Multimedia Broadcast/Multicast Service (MBMS); User service guidelines".

[37] IETF RFC 3629: "UTF-8, a transformation format of ISO 10646," November 2003.

[38] IETF RFC 4288: "Media Type Specifications and Registration Procedures," December 2005.

[39] IETF RFC 4648: "The Base16, Base32, and Base64 Data Encodings," October 2006.

[40] IETF RFC 5234: "Augmented BNF for Syntax Specifications: ABNF", Crocker D. and Overell P., January 2008.

[41] 3GPP TR 26.905: "Mobile stereoscopic 3D video".

[42] 3GPP TS 26.346: " Multimedia Broadcast/Multicast Service (MBMS);Protocols and codecs"

[43] ISO/IEC 23009-1:2020/Amd. 1" Information technology -- Dynamic adaptive streaming over HTTP (DASH) -- Part 1: Media presentation description and segment formats".

[44] ISO/IEC 23009-3 "Information technology -- Dynamic adaptive streaming over HTTP (DASH) -- Part 3: Implementation and Deployment Guidelines".

[45] ISO/IEC 23009-2 " Information technology -- Dynamic adaptive streaming over HTTP (DASH) -- Part 2: Conformance and Reference Software".

[46] 3GPP TR 26.938: "Packet-switched Streaming Service (PSS); Improved support for dynamic adaptive streaming over HTTP in 3GPP".

[47] ISO/IEC 23001-7:2015: "Information technology -- MPEG systems technologies -- Part 7: Common encryption in ISO base media file format files".

[48] IETF RFC 7164, "RTP and Leap Seconds", March 2014.

[49] ITU-T P.1203 (11/2016), "Parametric bitstream-based quality assessment of progressive download and adaptive audiovisual streaming services over reliable transport".

[50] ITU-T P.910 (04/2008), "Subjective video quality assessment methods for multimedia applications".

[51] "Mobile Location Protocol (MLP) ", Open Mobile Alliance, OMA-LIF-MLP-V3\_1, Approved Version 3.1 – 20 Sep 2011.

[52] IEEE 1003.1-2008 "IEEE Standard for Information Technology - Portable Operating System Interface (POSIX(R))".

[53] 3GPP TS 25.331 "Radio Resource Control (RRC); Protocol specification".

[54] ISO/IEC 23009-5:2017: "Information Technology — Dynamic adaptive streaming over HTTP (DASH) — Part 5: Server and network assisted DASH (SAND)".

[55] 3GPP TR 26.957: "Study on Server And Network-assisted DASH (SAND) for 3GPP Multimedia Services".

[56] IETF RFC 6455: "The WebSocket Protocol".

[57] 3GPP TS 23.003: "Numbering, addressing and identification".

[58] 3GPP TS 26.116: "Television (TV) over 3GPP services; Video profiles".

[59] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

[60] 3GPP TS 26.347: " Multimedia Broadcast/Multicast Service (MBMS); Application Programming Interface and URL".

[61] 3GPP TS 27.007: " Technical Specification Group Core Network and Terminals; AT command set for User Equipment (UE)".

[62] DASH Industry Forum: "DASH Player’s Application Events and Timed Metadata Processing Model and APIs", see under <https://dashif.org/guidelines/>.

[63] 3GPP TS 28.405; "Management of Quality of Experience (QoE) measurement collection; Control and configuration"

[64] 3GPP TS 26.501: "5G Media Streaming (5GMS); General description and architecture".

[65] 3GPP TS 26.511: "5G Media Streaming (5GMS); Profiles, codecs and formats".

[66] 3GPP TS 26.512: " 5G Media Streaming (5GMS); Protocols".

[67] ISO/IEC 23000-19: "Information Technology Multimedia Application Format (MPEG-A) – Part 19: Common Media Application Format (CMAF) for segmented media".

[68] DASH Industry Forum – Guidelines for Interoperability: "DASH Low Latency Modes", see <https://dashif.org/guidelines/>.

[69] 3GPP TS 24.526: " User Equipment (UE) policies for 5G System (5GS); Stage 3".

[70] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".

[71] 3GPP TS 38.300: "NR; NR and NG-RAN Overall description; Stage-2".

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

## 10.5 Quality Reporting Scheme for DASH

This clause specifies a 3GP-DASH quality reporting scheme.

The quality reporting scheme is signaled using in the **Reporting** element in the **Metrics** element. The URN to be used for the **Reporting**@schemeIdUri shall be "urn:3GPP:ns:PSS:DASH:QM10".

The reporting scheme shall use the quality reporting protocol defined in clause 10.6.

The semantics and XML syntax of the scheme information for the 3GP-DASH quality reporting scheme are specified in Table 34 and Table 35, respectively.

Table 34: Semantics of Quality Reporting Scheme Information

|  |  |  |
| --- | --- | --- |
| Element or Attribute Name | Use | Description |
|  | @apn | O | This attribute gives the access point that should be used for sending the QoE reports. |
|  | @format | O | This field gives the requested format for the reports. Possible formats are: "uncompressed" and "gzip". |
|  | @samplepercentage | O | Percentage of the clients that should report QoE. The client uses a random number generator with the given percentage to find out if the client should report or not. |
|  | @reportingserver | M | The reporting server URL to which the reports will be sent. |
|  | @reportinginterval | O | Indicates the time(s) reports should be sent. If not present, then the client should send a report after the streaming session has ended. If present, @reportingInterval=n indicates that the client should send a report every n-th second provided that new metrics information has become available since the previous report. For each report sent, only the newly collected information since the previous report shall be reported. |
|  | **LocationFilter** | 0..1 | When present, this element indicates the geographic area(s) or location(s) where quality metric collection is requested. When not present, quality metric collection is requested regardless of the device’s location. The LocationFilter element comprises one or more instances of any combination of targeted cell-IDs, polygons and circular areas. Each cell-ID entry in LocationFilter is announced in cellList, and each polygon and circular area entry is announced in the polygonList or and circularAreaList elements, respectively. |
|  |  cellList | 0..N | This element specifies a list of cells identified by E-UTRAN-CGI or CGI. |
|  |  shape |  | Geographic area comprising one or more instances of polygonList and/or circularAreaList elements. |
|  |  polygonList | 0..N | This element, when present, comprises a list of ‘Polygon’ shapes as defined by OMA MLP [51]. |
|  |  @confLevel | O | This attribute indicates the probability in percent that the DASH client is located in the corresponding polygon area. It is defined as ‘lev\_conf’ by OMA MLP. If not present, it has default value of 60. |
|  |  circularAreaList | 0..N | This element, when present, comprises a list of ‘CircularArea’ shapes as defined by OMA MLP [51]. |
|  |  @confLevel | O | This attribute indicates the probability in percent that the DASH client is located in the corresponding circular area. It is defined as ‘lev\_conf’ by OMA MLP. If not present, it has default value of 60. |
|  | **@sliceScope** | O | When present, this attribute indicates a list of network slices in which the QoE collection is requested. When not present, quality metric collection is requested for all network slices. The value is a list of S-NSSAIs. |
|  | **@communicationServiceType** | OD | When present, this attribute indicates in which communication service type the QoE collection is requested:- The value *mbsMulticast* refers to the *MBS Multicast* *communication service* per clause 21.1 of TS 38.300 [71]).- The value *mbsBroadcast* refers to the *MBS Broadcast communication service* per clause 21.1 of TS 38.300 [71].- The value *all* refers to all communication service types.When absent, quality metrics collection is requested for all MBS modes. |
| Legend:For attributes: M=Mandatory, O=Optional, OD=Optional with Default Value, CM=Conditionally Mandatory.For elements: <minOccurs>…<maxOccurs> (N=unbounded)Elements are bold; attributes are non-bold and preceded with an @ |

Table 35: Syntax of Quality Reporting Scheme Information

|  |
| --- |
| <?xml version="1.0"?><xs:schema targetNamespace="urn:3GPP:ns:PSS:AdaptiveHTTPStreaming:2009:qm"  attributeFormDefault="unqualified"  elementFormDefault="qualified"  xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns="urn:3GPP:ns:PSS:AdaptiveHTTPStreaming:2009:qm">  <xs:annotation> <xs:appinfo>3GPP DASH Quality Reporting</xs:appinfo> <xs:documentation xml:lang="en"> This Schema defines the quality reporting scheme information for 3GPP DASH. </xs:documentation> </xs:annotation>  <xs:element name="ThreeGPQualityReporting" type="SimpleQualityReportingType"/>  <xs:complexType name="SimpleQualityReportingType"> <xs:sequence> <xs:element name="LocationFilter" type="LocationFilterType" minOccurs="0"/> <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/> </xs:sequence> <xs:attribute name="apn" type="xs:string" use="optional"/> <xs:attribute name="format" type="FormatType" use="optional"/> <xs:attribute name="samplePercentage" type="xs:double" use="optional"/> <xs:attribute name="reportingServer" type="xs:anyURI" use="required"/> <xs:attribute name="reportingInterval" type="xs:unsignedInt" use="optional"/> <xs:attribute name="sliceScope" type="UnsignedIntVectorType" use="optional"/> <xs:attribute name="communicationServiceType" type="CommunicationServiceTypeType" use="optional" default="all"/> <xs:anyAttribute namespace="##other" processContents="lax"/> </xs:complexType>  <xs:simpleType name="FormatType"> <xs:restriction base="xs:string"> <xs:enumeration value="uncompressed" /> <xs:enumeration value="gzip" /> </xs:restriction> </xs:simpleType> <xs:simpleType name="CommunicationServiceTypeType"> <xs:restriction base="xs:string"> <xs:enumeration value="all" /> <xs:enumeration value="mbsBroadcast" /> <xs:enumeration value="mbsMulticast" /> </xs:restriction> </xs:simpleType> <xs:complexType name="LocationFilterType"> <xs:sequence> <xs:element name="cellID" type="xs:unsignedLong" minOccurs="0" maxOccurs="unbounded"/> <xs:element name="shape" type="ShapeType" minOccurs="0"/> <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/> </xs:sequence> <xs:anyAttribute namespace="##other" processContents="lax"/> </xs:complexType> <xs:complexType name="ShapeType"> <xs:sequence> <xs:element name="PolygonList" type="PolygonListType" minOccurs="0"/> <xs:element name="CircularAreaList" type="CircularAreaListType" minOccurs="0"/> <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/> </xs:sequence> <xs:anyAttribute namespace="##other" processContents="lax"/> </xs:complexType> <xs:complexType name="PolygonListType"> <xs:annotation> <xs:documentation> see [OMA MLP] </xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="Polygon" minOccurs="0" maxOccurs="unbounded"/> <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/> </xs:sequence> <xs:attribute name="ConfLevel" type="xs:unsignedInt" use="optional"/> <xs:anyAttribute namespace="##other" processContents="lax"/> </xs:complexType> <xs:complexType name="CircularAreaListType"> <xs:annotation> <xs:documentation> see [OMA MLP] </xs:documentation> </xs:annotation> <xs:sequence> <xs:element name="CircularArea" minOccurs="0" maxOccurs="unbounded"/> <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/> </xs:sequence> <xs:attribute name="ConfLevel" type="xs:unsignedInt" use="optional"/> <xs:anyAttribute namespace="##other" processContents="lax"/> </xs:complexType> <xs:simpleType name="UnsignedIntVectorType"> <xs:list itemType="xs:unsignedInt"/> </xs:simpleType></xs:schema> |

\*\*\*\* Last Change \*\*\*\*