3GPP TSG-SA WG4 Meeting #131-bis-eS4-250521r01

Online, 11 – 17 April 2025

**Source: InterDigital Communications**

**Title: Pseudo-CR on QoE metric reporting configuration**

**Spec: 3GPP TS 26.567 v1.0.1**

**Agenda item: 10.5**

**Document for: Discussion and agreement**

**1. Introduction**

Draft TS 26.567 specifies Processing Delay adaptation in clause 7.3.2 and defined message format in Annex A.

The processing delay adaption procedure needs additional parameters in QoE metric reporting configuration to configure the target delay range and target delay value.

**2. Reason for Change**

Add QoE metric reporting configuration to filter metric reporting and enable the processing delay adaptation:

* Add positive crossing and negative crossing thresholds properties
* Add target value for processing delay adaptation

**3. Proposal**

It is proposed to agree the following changes to 3GPP TS 26.567 v1.0.1.

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 TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[3] 3GPP TS 26.264: "IMS-based AR Real-Time Communication".

[4] 3GPP TS 23.501: "System architecture for the 5G System (5GS); Stage 2".

[5] 3GPP TS 26.565: "Split Rendering Media Service Enabler".

[6] 3GPP TS 26.119: "Device Media Capabilities for Augmented Reality Services".

[7] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction".

[8] 3GPP TS 26.565: "Split Rendering Media Service Enabler".

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

[10] 3GPP TS 28.405; "Management of Quality of Experience (QoE) measurement collection; Control and configuration"

[11] IETF RFC 3550 (2003): "RTP: A Transport Protocol for Real-Time Applications".

[12] IETF RFC 4960 (2007): "Stream Control Transmission Protocol".

[13] IETF RFC 8261 (2017): "Datagram Transport Layer Security (DTLS) Encapsulation of SCTP Packets".

[14] IETF RFC 8831 (2021): "WebRTC Data Channels".

[15] IETF RFC 2326 (1998): "Real Time Streaming Protocol (RTSP)".

second change

## 6.3 Metrics Reporting

### 6.3.1 General

The metrics reporting procedure specified in clause 16.4 of TS 26.114 [7] allows the SR-DCMTSI client to send QoE metrics reports to the QoE server.

An SR-DCMTSI Client shall report QoE metrics specified in clause 6.2 for the real-time media it has received using the protocol specified in clause 16.4 of TS 26.114 [7] according to the QoE metrics reporting configuration obtained in a 3GPP MTSIQOE (MTSI QoE metrics) management object (see clause 16.3.1 of TS 26.114 [7]) or in an RRC message (see clause 16.5.1 of TS 26.114 [7]).

The quality metrics report follows the XML-based report format defined in clause 6.3.3.

SR-DCMTSI Clients shall use the MIME type "application/3gprtc-qoe-report+xml" for an XML-formatted QoE report. The metrics report format is defined in clause 6.3.3.

### 6.3.2 QoE metric reporting configuration

The syntax of the "3GPP-QoE-Metrics" attribute specified in clause 16.3.2 of TS 26.114 [7] is extended as follows:

- QoE-Metrics = "3GPP-QoE-Metrics:" att-measure-spec \*("," att-measure-spec)) CRLF

- att-measure-spec = Metrics ";" Sending-rate [";" Measure-Range]   
 [";" Measure-Resolution] \*([";" Parameter-Ext])

- Metrics = "metrics" "=" "{"Metrics-Name \*("|" Metrics-Name) " }"

- Metrics-Name = 1\*((%x21-2b) / (%x2d-3a) / (%x3c-7a) / %x7e)   
 [";" Positive-Threshold ";" Negative-Threshold ";" Target] ;VCHAR except ";", ",", "{" or "}"

- Positive-Threshold = "positive=" (1\*DIGIT ["." 1\*DIGIT]) ; positive crossing threshold

- Negative-Threshold = "negative=" (1\*DIGIT ["." 1\*DIGIT]) ; negative crossing threshold

- Target = "target=" (1\*DIGIT ["." 1\*DIGIT]) ; target value

- Sending-Rate = "rate" "=" 1\*DIGIT / "End"

- Measure-Resolution = "resolution" "=" 1\*DIGIT ; in seconds

- Measure-Range = "range" ":" Ranges-Specifier

- Parameter-Ext = (1\*DIGIT ["." 1\*DIGIT]) / (1\*((%x21-2b) / (%x2d-3a) / (%x3c-7a) / %x7c / %x7e))

- Ranges-Specifier = as defined in RFC 2326 [15].

The "Metrics", "Sending-Rate", "Measure-Resolution" and "Measure-Range" fields are defined in clause 16.3.2 of TS 26.114 [7].

The optional "Positive-Threshold" field, if used, shall define the positive crossing threshold of a QoE metric. When present, the QoE metric shall be reported once when its value exceeds the threshold value indicated in the "Positive-Threshold" property and shall not be reported again until it falls below that threshold and subsequently exceeds it.

The optional "Negative-Threshold" field, if used, shall define the negative crossing threshold of a QoE metric. When present, the QoE metric shall be reported once when its value falls below the threshold value indicated in the "Negative-Threshold" property and shall not be reported again until it exceeds that threshold and subsequently falls below it.

The optional "Target" field, if used, shall define the target value of a QoE metric.

An example for a QoE metrics reporting configuration is as shown below:

3GPP-QoE-Metrics:metrics={Round\_Trip\_Time;positive=80;negative=20;target=50};rate=5;resolution=1

Third change

### 6.3.3 Report format

The QoE report is formatted as an XML document that complies with the XML schema in listing 16.4.1of TS 26.114 [7].

The schema in listing 6.3.3-1 allows the SR-DCMTSI client to report QoE metrics using the metrics reporting mechanism specified in clause 16.4 of TS 26.114 [7].

The filename of this schema is "TS26567\_SR\_IMSQoEMetrics.xsd".

Listing 6.3.3-1: SR\_IMS QoE Metrics XML schema

|  |
| --- |
| <?xml version="1.0" encoding="UTF-8"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"  targetNamespace="urn:3gpp:metadata:2024:RTC:SR\_IMSQoEMetrics"  xmlns="urn:3gpp:metadata:2024:RTC:SR\_IMSQoEMetrics"  xmlns:sv="urn:3gpp:metadata:2017:MTSI:schemaVersion" elementFormDefault="qualified">  <xs:element name="QoeReport" type="QoeReportType"/>  <xs:complexType name="QoeReportType">  <xs:sequence>  <xs:element name="statisticalReport" type="starType" minOccurs="0"  maxOccurs="unbounded"/>  <xs:any namespace="##other" processContents="skip" minOccurs="0"  maxOccurs="unbounded"/>  </xs:sequence>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="starType">  <xs:sequence>  <xs:element name="mediaLevelQoeMetrics" type="mediaLevelQoeMetricsType" minOccurs="1"  maxOccurs="unbounded"/>  <xs:element ref="sv:delimiter"/>  <xs:element name="latencyQoeMetric" type="QoeMetricType" minOccurs="0"  maxOccurs="unbounded"/>  <xs:element ref="sv:delimiter"/>  </xs:sequence>  <xs:attribute name="startTime" type="xs:unsignedLong" use="required"/>  <xs:attribute name="stopTime" type="xs:unsignedLong" use="required"/>  <xs:attribute name="callId" type="xs:string" use="required"/>  <xs:attribute name="clientId" type="xs:string" use="required"/>  <xs:attribute name="qoeReferenceId" type="xs:hexBinary" use="optional"/>  <xs:attribute name="recordingSessionId" type="xs:hexBinary" use="optional"/>  <xs:attribute name="dnn" type="xs:string" use="optional"/>  <xs:attribute name="snssai" type="xs:unsignedLong" use=”optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="mediaLevelQoeMetricsType">  <xs:sequence>  <xs:any namespace="##other" processContents="skip" minOccurs="0"  maxOccurs="unbounded"/>  </xs:sequence>  <xs:attribute name="mediaId" type="xs:integer" use="required"/>  <xs:attribute name="totalCorruptionDuration" type="unsignedLongVectorType"  use="optional"/>  <xs:attribute name="numberOfCorruptionEvents" type="unsignedLongVectorType"  use="optional"/>  <xs:attribute name="corruptionAlternative" type="xs:string" use="optional"/>  <xs:attribute name="totalNumberofSuccessivePacketLoss" type="unsignedLongVectorType"  use="optional"/>  <xs:attribute name="numberOfSuccessiveLossEvents" type="unsignedLongVectorType"   use="optional"/>  <xs:attribute name="numberOfReceivedPackets" type="unsignedLongVectorType"   use="optional"/>  <xs:attribute name="framerate" type="doubleVectorType" use="optional"/>  <xs:attribute name="totalJitterDuration" type="doubleVectorType" use="optional"/>  <xs:attribute name="numberOfJitterEvents" type="unsignedLongVectorType"  use="optional"/>  <xs:attribute name="totalSyncLossDuration" type="doubleVectorType" use="optional"/>  <xs:attribute name="numberOfSyncLossEvents" type="unsignedLongVectorType"  use="optional"/>  <xs:attribute name="networkRTT" type="unsignedLongVectorType" use="optional"/>  <xs:attribute name="internalRTT" type="unsignedLongVectorType" use="optional"/>  <xs:attribute name="codecInfo" type="stringVectorType" use="optional"/>  <xs:attribute name="codecProfileLevel" type="stringVectorType" use="optional"/>  <xs:attribute name="codecImageSize" type="stringVectorType" use="optional"/>  <xs:attribute name="averageCodecBitrate" type="doubleVectorType" use="optional"/>  <xs:attribute name="callSetupTime" type="xs:unsignedLong" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>    <xs:element name="latencyQoeMetric" type="QoeMetricType"/>  <xs:complexType name="QoeMetricType">  <xs:sequence>  <xs:choice>  <xs:element name="poseToRenderToPhoton" type="PoseToRenderToPhotonType"/>  <xs:element name="renderToPhoton" type="RenderToPhotonType"/>  <xs:elementname="roundTripInteractionDelay" type="RoundTripInteractionDelayType"/>  <xs:element name="userInteractionDelay" type="UserInteractionDelayType"/>  <xs:element name="ageOfContent" type="AgeOfContentType"/>  <xs:element name="sceneUpdateDelay" type="SceneUpdateDelayType"/>  <xs:element name="metadataDelay" type="MetadataDelayType"/>  <xs:element name="dataFrameDelay" type="DataFrameDelayType"/>  </xs:choice>  <xs:element ref="sv:delimiter"/>  <xs:any namespace="##other" processContents="skip" minOccurs="0" maxOccurs="unbounded"/>  </xs:sequence>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="PoseToRenderToPhotonType">  <xs:attribute name="avgPoseToRenderToPhoton" type="doubleVectorType" use="optional"/>  <xs:attribute name="minPoseToRenderToPhoton" type="unsignedIntVectorType" use=" optional"/>  <xs:attribute name="maxPoseToRenderToPhoton" type="unsignedIntVectorType" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="RenderToPhotonType">  <xs:attribute name="avgPoseToRenderToPhoton" type="doubleVectorType" use="optional"/>  <xs:attribute name="minRenderToPhoton" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="maxRenderToPhoton" type="unsignedIntVectorType" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="RoundTripInteractionDelayType">  <xs:attribute name="avgRoundTripInteractionDelay" type="doubleVectorType" use="optional"/>  <xs:attribute name="numberOfUserActions" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="minRoundTripInteractionDelay" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="minActionIds" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="maxRoundTripInteractionDelay" type="UnsignedIntVectorType" use="optional"/>  <xs:attribute name="maxActionIds" type="unsignedIntVectorType" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="UserInteractionDelayType">  <xs:attribute name="avgUserInetractionDelay" type="doubleVectorType" use="optional"/>  <xs:attribute name="numberOfUserActions" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="minUserInetractionDelay" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="minActionIds" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="maxUserInteractionDelay" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="maxActionIds" type="unsignedIntVectorType" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="AgeOfContentType">  <xs:attribute name="avgAgeOfContent" type="doubleVectorType" use="optional"/>  <xs:attribute name="mumberOfSceneEvents" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="minageOfContent" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="maxAgeOfContent" type="unsignedIntVectorType" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="SceneUpdateDelayType">  <xs:attribute name="avgSceneUpdateDelay" type="doubleVectorType" use="optional"/>  <xs:attribute name="numberOfSceneUpdates" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="minsceneUpdateDelay" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="maxsceneUpdateDelay" type="unsignedIntVectorType" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="MetadataDelayType">  <xs:attribute name="avgMetadataDelay" type="doubleVectorType" use="optional"/>  <xs:attribute name="numberOfMetadataMessages" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="minMetadataDelay" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="maxMetadataDelay" type="unsignedIntVectorType" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:complexType name="DataFrameDelayType">  <xs:attribute name="avgDataFrameDelay" type="doubleVectorType" use="optional"/>  <xs:attribute name="numberOfDataFrames" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="minDataFrameDelay" type="unsignedIntVectorType" use="optional"/>  <xs:attribute name="maxDataFrameDelay" type="unsignedIntVectorType" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>  <xs:simpleType name="doubleVectorType">  <xs:list itemType="xs:double"/>  </xs:simpleType>  <xs:simpleType name="stringVectorType">  <xs:list itemType="xs:string"/>  </xs:simpleType>  <xs:simpleType name="unsignedLongVectorType">  <xs:list itemType="xs:unsignedLong"/>  </xs:simpleType>  </xs:schema> |

End of changes