**3GPP TSG-WG SA4 Meeting #119E e-meeting  *S4-220657***

**Elbonia, May 11th – 20th, 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.247** | **CR** | **0173** | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Add DNN/Slice in the QoE report schema | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | SA4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_QoE-Core | | | | |  | ***Date:*** | | | 2022-02-08 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | In the agreed S4-220283, the report schema changes are not reflected in the latest TS 26.247. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Resubmit the changes to the report schema. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Per-slice QoE measurements are not supported. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.6.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

### 10.6.2 Report Format

The QoE report is formatted as an XML document that complies with the following XML schema:

|  |
| --- |
| <?xml version="1.0"?> <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"  targetNamespace="urn:3gpp:metadata:2011:HSD:receptionreport"  xmlns:sup="urn:3gpp:metadata:2016:PSS:SupplementQoEMetric"  xmlns:sv="urn:3gpp:metadata:2016:PSS:schemaVersion"  xmlns="urn:3gpp:metadata:2011:HSD:receptionreport" elementFormDefault="qualified">  <xs:element name="ReceptionReport" type="ReceptionReportType"/>   <xs:complexType name="ReceptionReportType">  <xs:choice>  <xs:element name="QoeReport" type="QoeReportType" minOccurs="0" maxOccurs="unbounded"/>  <xs:any namespace="##other" processContents="skip" minOccurs="0" maxOccurs="unbounded"/>  </xs:choice>  <xs:attribute name="contentURI" type="xs:anyURI" use="required"/>  <xs:attribute name="clientID" type="xs:string" use="optional"/>  </xs:complexType>   <xs:complexType name="QoeReportType">  <xs:sequence>  <xs:element name="QoeMetric" type="QoeMetricType" minOccurs="1" maxOccurs="unbounded"/>  <xs:element ref="sup:supplementQoEMetric" minOccurs="0" maxOccurs="1"/> <xs:element ref="sv:delimiter"/> <xs:any namespace="##other" processContents="skip" minOccurs="0" maxOccurs="unbounded"/>  </xs:sequence>  <xs:attribute name="periodID" type="xs:string" use="required"/>  <xs:attribute name="reportTime" type="xs:dateTime" use="required"/>  <xs:attribute name="reportPeriod" type="xs:unsignedInt" 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="QoeMetricType">  <xs:choice>  <xs:element name="HttpList" type="HttpListType"/>  <xs:element name="RepSwitchList" type="RepSwitchListType"/>  <xs:element name="AvgThroughput" type="AvgThroughputType" maxOccurs="unbounded"/>  <xs:element name="InitialPlayoutDelay" type="xs:unsignedInt"/>  <xs:element name="BufferLevel" type="BufferLevelType"/>  <xs:element name="PlayList" type="PlayListType"/>  <xs:element name="MPDInformation" type="MpdInformationType" maxOccurs="unbounded"/>  <xs:element name="PlayoutDelayforMediaStartup" type="xs:unsignedInt"/>  </xs:choice>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="HttpListType">  <xs:choice>  <xs:element name="HttpListEntry" type="HttpListEntryType" maxOccurs="unbounded"/>  </xs:choice>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="HttpListEntryType">  <xs:choice>  <xs:element name="Trace" type="HttpThroughputTraceType" maxOccurs="unbounded"/>  </xs:choice>  <xs:attribute name="tcpid" type="xs:unsignedInt" use="optional"/>  <xs:attribute name="type" type="ExtensibleHttpEntryResourceType" use="optional"/>  <xs:attribute name="url" type="xs:string" use="required"/>  <xs:attribute name="actualUrl" type="xs:string" use="optional"/>  <xs:attribute name="range" type="xs:string" use="optional"/>  <xs:attribute name="trequest" type="xs:dateTime" use="required"/>  <xs:attribute name="tresponse" type="xs:dateTime" use="required"/>  <xs:attribute name="responsecode" type="xs:unsignedInt" use="optional"/>  <xs:attribute name="interval" type="xs:unsignedInt" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:simpleType name="HttpEntryResourceType">  <xs:restriction base="xs:string">  <xs:enumeration value="MPD"/>  <xs:enumeration value="MPDDeltaFile"/>  <xs:enumeration value="XLinkExpansion"/>  <xs:enumeration value="InitializationSegment"/>  <xs:enumeration value="IndexSegment"/>  <xs:enumeration value="MediaSegment"/>  </xs:restriction>  </xs:simpleType>   <xs:simpleType name="StringPatternType">  <xs:restriction base="xs:string">  <xs:pattern value="x:\S.\*"/>  </xs:restriction>  </xs:simpleType>   <xs:simpleType name="ExtensibleHttpEntryResourceType">  <xs:union memberTypes="HttpEntryResourceType StringPatternType"/>  </xs:simpleType>   <xs:complexType name="HttpThroughputTraceType">  <xs:attribute name="s" type="xs:dateTime" use="required"/>  <xs:attribute name="d" type="xs:unsignedInt" use="required"/>  <xs:attribute name="b" type="UnsignedIntVectorType" use="required"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="RepSwitchListType">  <xs:choice>  <xs:element name="RepSwitchEvent" type="RepSwitchEventType" maxOccurs="unbounded"/>  </xs:choice>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="RepSwitchEventType">  <xs:attribute name="to" type="xs:string" use="required"/>  <xs:attribute name="mt" type="xs:duration" use="optional"/>  <xs:attribute name="t" type="xs:dateTime" use="optional"/>  <xs:attribute name="lto" type="xs:unsignedInt" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="AvgThroughputType">  <xs:attribute name="numBytes" type="xs:unsignedInt" use="required"/>  <xs:attribute name="activityTime" type="xs:unsignedInt" use="required"/>  <xs:attribute name="t" type="xs:dateTime" use="required"/>  <xs:attribute name="duration" type="xs:unsignedInt" use="required"/>  <xs:attribute name="accessbearer" type="xs:string" use="optional"/>  <xs:attribute name="inactivityType" type="InactivityType" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:simpleType name="InactivityType">  <xs:restriction base="xs:string">  <xs:enumeration value="Pause"/>  <xs:enumeration value="BufferControl"/>  <xs:enumeration value="Error"/>  </xs:restriction>  </xs:simpleType>  <xs:complexType name="BufferLevelType">  <xs:choice>  <xs:element name="BufferLevelEntry" type="BufferLevelEntryType" maxOccurs="unbounded"/>  </xs:choice>   <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="BufferLevelEntryType">  <xs:attribute name="t" type="xs:dateTime" use="required"/>  <xs:attribute name="level" type="xs:unsignedInt" use="required"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="PlayListType">  <xs:choice>  <xs:element name="Trace" type="PlayListEntryType" maxOccurs="unbounded"/>  </xs:choice>   <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="PlayListEntryType">  <xs:choice>  <xs:element name="TraceEntry" type="PlayListTraceEntryType" maxOccurs="unbounded"/>  </xs:choice>  <xs:attribute name="start" type="xs:dateTime" use="required"/>  <xs:attribute name="mstart" type="xs:duration" use="required"/>  <xs:attribute name="startType" type="StartType" use="required"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="PlayListTraceEntryType">  <xs:attribute name="representationId" type="xs:string" use="optional"/>  <xs:attribute name="subrepLevel" type="xs:unsignedInt" use="optional"/>  <xs:attribute name="start" type="xs:dateTime" use="required"/>  <xs:attribute name="sstart" type="xs:duration" use="required"/>  <xs:attribute name="duration" type="xs:unsignedInt" use="required"/>  <xs:attribute name="playbackSpeed" type="xs:double" use="optional"/>  <xs:attribute name="stopReason" type="StopReasonType" use="optional"/>  <xs:attribute name="stopReasonOther" type="xs:string" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:simpleType name="StartType">  <xs:restriction base="xs:string">  <xs:enumeration value="NewPlayoutRequest"/>  <xs:enumeration value="Resume"/>  <xs:enumeration value="OtherUserRequest"/>  <xs:enumeration value="StartOfMetricsCollectionPeriod"/>  </xs:restriction>  </xs:simpleType>  <xs:simpleType name="StopReasonType">  <xs:restriction base="xs:string">  <xs:enumeration value="RepresentationSwitch"/>  <xs:enumeration value="Rebuffering"/>  <xs:enumeration value="UserRequest"/>  <xs:enumeration value="EndOfPeriod"/>  <xs:enumeration value="EndOfContent"/>  <xs:enumeration value="EndOfMetricsCollectionPeriod"/>  <xs:enumeration value="Failure"/>  <xs:enumeration value="Other"/>  </xs:restriction>  </xs:simpleType>   <xs:complexType name="MpdInformationType">  <xs:choice>  <xs:element name="Mpdinfo" type="RepresentationType" maxOccurs="unbounded"/>  </xs:choice>  <xs:attribute name="representationId" type="xs:string" use="required"/>  <xs:attribute name="subrepLevel" type="xs:unsignedInt" use="optional"/>  <xs:anyAttribute processContents="skip"/>  </xs:complexType>   <xs:complexType name="RepresentationType">  <xs:attribute name="codecs" type="xs:string" use="required"/>  <xs:attribute name="bandwidth" type="xs:unsignedInt" use="required"/>  <xs:attribute name="qualityRanking" type="xs:unsignedInt" use="optional"/>  <xs:attribute name="frameRate" type="xs:double" use="optional"/>  <xs:attribute name="width" type="xs:unsignedInt" use="optional"/>  <xs:attribute name="height" type="xs:unsignedInt" use="optional"/>  <xs:attribute name="mimeType" type="xs:string" use="required"/>  <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="UnsignedIntVectorType">  <xs:list itemType="xs:unsignedInt"/>  </xs:simpleType>  </xs:schema> |
|  |

The following schema is an extension to allow additional QoE metrics.

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema

xmlns="urn:3gpp:metadata:2016:PSS:SupplementQoEMetric"

xmlns:xs="http://www.w3.org/2001/XMLSchema"

targetNamespace="urn:3gpp:metadata:2016:PSS:SupplementQoEMetric"

elementFormDefault="qualified">

<xs:element name="supplementQoEMetric" type="SupplementQoEMetricType"/>

<xs:complexType name="SupplementQoEMetricType">

<xs:sequence>

<xs:element name="deviceinformation" type="DeviceInformationType" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>  
 </xs:complexType>

<xs:complexType name="DeviceInformationType">  
 <xs:choice>  
 <xs:element name="Entry" type="DeviceInformationEntryType" maxOccurs="unbounded"/>  
 </xs:choice>  
 <xs:anyAttribute processContents="skip"/>  
 </xs:complexType>

<xs:complexType name="DeviceInformationEntryType">

<xs:attribute name="start" type="xs:dateTime" use="required"/>  
 <xs:attribute name="mstart" type="xs:duration" use="required"/>  
 <xs:attribute name="videoWidth" type="xs:unsignedInt" use="required"/>  
 <xs:attribute name="videoHeight" type="xs:unsignedInt" use="required"/>  
 <xs:attribute name="screenWidth" type="xs:unsignedInt" use="required"/>  
 <xs:attribute name="screenHeight" type="xs:unsignedInt" use="required"/>

<xs:attribute name="pixelWidth" type="xs:double" use="required"/>  
 <xs:attribute name="pixelHeight" type="xs:double" use="required"/>

<xs:attribute name="fieldOfView" type="xs:double" use="required"/>  
 <xs:anyAttribute processContents="skip"/>

</xs:complexType>

</xs:schema>

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema xmlns="urn:3gpp:metadata:2016:PSS:schemaVersion"

xmlns:xs="http://www.w3.org/2001/XMLSchema"

targetNamespace="urn:3gpp:metadata:2016:PSS:schemaVersion"

elementFormDefault="qualified">

<xs:element name="schemaVersion" type="xs:unsignedInt"/>

<xs:element name="delimiter" type="xs:byte"/>

</xs:schema>

Note: If a supplementQoEMetric needs to be sent when no ordinar QoEMetric are due, a dummy MPDInformation metric shall be sent with codecs="none", bandwidth=0, mimeType="none", representationId="none".

Note: If the attribute qoeReferenceId was defined in the QMC configuration (see clause L.2), the value shall be copied into each QoE report, to facilitate network-side correlation (see [63]). If this attribute was defined the attribute recordingSessionId shall also be returned for each QoE report. The recordingSessionId is a two-byte octet defined by the client. It shall remain the same for all QoE reports belonging to the same streaming session, and it should be different for QoE reports belonging to different streaming sessions.

Note: For QMC scheme, the DASH client should include the S-NSSAI and DNN that correspond to the report data for support of per-slice QoE reporting and evaluation in OAM. This information may be retrieved via the AT Command +CGDCONT [61]) or the specific traffic mapping with URSP rule[69].

\* \* \* \* End of changes \* \* \* \*