

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

H.741.2

Corrigendum 1

(02/2015)

SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS
IPTV multimedia services and applications for IPTV –
IPTV application event handling

IPTV application event handling:
Data structures of audience measurement for IPTV
services

**Corrigendum 1: Correction on XML namespaces
in Appendix I**

Recommendation ITU-T H.741.2 (2012) –
Corrigendum 1

ITU-T H-SERIES RECOMMENDATIONS
AUDIOVISUAL AND MULTIMEDIA SYSTEMS

CHARACTERISTICS OF VISUAL TELEPHONE SYSTEMS	H.100–H.199
INFRASTRUCTURE OF AUDIOVISUAL SERVICES	
General	H.200–H.219
Transmission multiplexing and synchronization	H.220–H.229
Systems aspects	H.230–H.239
Communication procedures	H.240–H.259
Coding of moving video	H.260–H.279
Related systems aspects	H.280–H.299
Systems and terminal equipment for audiovisual services	H.300–H.349
Directory services architecture for audiovisual and multimedia services	H.350–H.359
Quality of service architecture for audiovisual and multimedia services	H.360–H.369
Telepresence	H.420–H.429
Supplementary services for multimedia	H.450–H.499
MOBILITY AND COLLABORATION PROCEDURES	
Overview of Mobility and Collaboration, definitions, protocols and procedures	H.500–H.509
Mobility for H-Series multimedia systems and services	H.510–H.519
Mobile multimedia collaboration applications and services	H.520–H.529
Security for mobile multimedia systems and services	H.530–H.539
Security for mobile multimedia collaboration applications and services	H.540–H.549
Mobility interworking procedures	H.550–H.559
Mobile multimedia collaboration inter-working procedures	H.560–H.569
BROADBAND, TRIPLE-PLAY AND ADVANCED MULTIMEDIA SERVICES	
Broadband multimedia services over VDSL	H.610–H.619
Advanced multimedia services and applications	H.620–H.629
Ubiquitous sensor network applications and Internet of Things	H.640–H.649
IPTV MULTIMEDIA SERVICES AND APPLICATIONS FOR IPTV	
General aspects	H.700–H.719
IPTV terminal devices	H.720–H.729
IPTV middleware	H.730–H.739
IPTV application event handling	H.740–H.749
IPTV metadata	H.750–H.759
IPTV multimedia application frameworks	H.760–H.769
IPTV service discovery up to consumption	H.770–H.779
Digital Signage	H.780–H.789
E-HEALTH MULTIMEDIA SERVICES AND APPLICATIONS	
Interoperability compliance testing of personal health systems (HRN, PAN, LAN, TAN and WAN)	H.820–H.859
Multimedia e-health data exchange services	H.860–H.869

For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T H.741.2

IPTV application event handling: Data structures of audience measurement for IPTV services

Corrigendum 1

Correction on XML namespaces in Appendix I

Summary

The ITU-T H.741.x series of Recommendations defines a foundational platform for audience measurement (AM) of IPTV services. They focus on the interface between terminal devices and an audience measurement aggregation function.

The AM platform integrates a method for end users to report personal information, and is designed to easily add time-shifted and interactive services, and non-terminal device measurement points. While the ITU-T H.741.x series allows the implementation of audience measurement for IPTV services, its mechanism may be equally applicable to non-IPTV services.

The design philosophy in the ITU-T H.741.x series is focused on scalability, minimizing the use of resources, security, flexibility to support a variety of service provider deployments, and rich privacy support to meet emerging regulations and legislation.

Recommendation ITU-T H.741.2 specifies the data elements and structures of the payloads used in audience measurement messages.

Amendment 1 adds an XML schema on the data structures of audience measurement for IPTV services.

Corrigendum 1 replaces the XML namespaces for audience measurement data structures in Appendix I. The namespaces were defined as URNs but should adopt the format of URLs, according to the ITU-T Authors' Guide for drafting ITU-T Recommendations.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T H.741.2	2012-06-29	16	11.1002/1000/11661
1.1	ITU-T H.741.2 (2012) Amd. 1	2013-11-08	16	11.1002/1000/12066
1.2	ITU-T H.741.2 (2012) Cor. 1	2015-02-20	16	11.1002/1000/12461

Keywords

Audience measurement, audience rating service, audience viewership, contents rating, data structures, distributed content service, end-user permission, engagement metrics, interactive services, IPTV application event handling, IPTV service, linear TV, metadata, monitoring, personalized service, privacy protection, XML schema.

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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Recommendation ITU-T H.741.2

IPTV application event handling: Data structures of audience measurement for IPTV services

Corrigendum 1

Correction on XML namespaces in Appendix I

1) Appendix I

Modify Appendix I as shown:

Appendix I

XML schema on the data structures of audience measurement for IPTV services

(This appendix does not form an integral part of this Recommendation.)

This is the XML schema that can be exchanged for IPTV services.

```
<?xml version="1.0" encoding="UTF-8"?>
<schema xmlns:am2="http://www.itu.int/xml-namespace/itu-t/h.741.2/datastructure
urn:itut:iptv:am:part2:2012" xmlns:mpeg7="urn:mpeg:mpeg7:schema:2004"
xmlns:ca="urn:ietf:params:xml:ns:pidf:geopriv10:civicAddr"
xmlns:gml="http://www.opengis.net/gml"
xmlns="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://www.itu.int/xml-namespace/itu-t/h.741.2/datastructure
urn:itut:iptv:am:part2:2012" elementFormDefault="qualified"
attributeFormDefault="unqualified">
  <annotation>
    <documentation xml:lang="en"><![CDATA[
      This schema (H.741.2-v1.xsd) is the ITU-T H.741 Part.2 Metadata,
      Version 1 (for H.741.2-201206.doc).
      The namespace of the schema is "http://www.itu.int/xml-
      namespace/itu-t/h.741.2/datastructureurn:itut:iptv:am:part2:2012", and
      its preferred namespace prefix is "am2".]]></documentation>
    </annotation>
    <import namespace="http://www.w3.org/XML/1998/namespace"
      schemaLocation="http://www.w3.org/2001/03/xml.xsd"/>
    <import namespace="urn:mpeg:mpeg7:schema:2004" schemaLocation="mpeg7-
      mds.xsd"/>
    <import namespace="urn:ietf:params:xml:ns:pidf:geopriv10:civicAddr"
      schemaLocation="rfc5139.xsd"/>
    <import namespace="http://www.opengis.net/gml"
      schemaLocation="./gml/2.1.2/gml.xsd"/>

    <!-- ===== -->
    <!-- ===== -->
    <!-- Primitive Data Types for H.741 Part.2 -->
    <!-- ===== -->
    <!-- ===== -->

    <simpleType name="NonEmptyString">
      <restriction base="string">
```

```

        <minLength value="1"/>
    </restriction>
</simpleType>
<complexType name="PointType">
    <complexContent>
        <extension base="gml:PointType"/>
    </complexContent>
</complexType>
<simpleType name="XPath">
    <restriction base="mpeg7:xPathRefType"/>
    <!-- Defined in MPEG-7 MDS. -->
</simpleType>
<complexType name="CivicAddr">
    <complexContent>
        <extension base="ca:civicAddress"/>
    </complexContent>
    <!-- Defined in IETF RFC 5139. -->
</complexType>
<simpleType name="URL">
    <restriction base="anyURI"/>
</simpleType>
<simpleType name="IpAddressType">
    <restriction base="string">
        <pattern value="( (1?[0-9]?[0-9]|2[0-4][0-9]|25[0-5])\.){3}(1?[0-9]?[0-9]|2[0-4][0-9]|25[0-5])"/>
    </restriction>
    <!-- Defined in "ATIS-0800026.xsd". -->
</simpleType>
<simpleType name="IIFIDType">
    <restriction base="string">
        <whiteSpace value="collapse"/>
    </restriction>
    <!-- Defined in "ATIS-0800026.xsd". -->
</simpleType>
<simpleType name="H770IDType">
    <union memberTypes="am2:IIFIDType am2:IpAddressType"/>
    <!-- Defined in ITU-T MDSD. -->
</simpleType>
<!-- ===== -->
<simpleType name="HexBinary6">
    <restriction base="hexBinary">
        <maxLength value="6"/>
    </restriction>
</simpleType>
<simpleType name="HexBinary8">
    <restriction base="hexBinary">
        <maxLength value="8"/>
    </restriction>
</simpleType>
<simpleType name="HexBinary16">
    <restriction base="hexBinary">
        <maxLength value="16"/>
    </restriction>
</simpleType>
<simpleType name="PercentageType">
    <restriction base="float">
        <minInclusive value="0.0"/>
        <maxInclusive value="100.0"/>
    </restriction>
</simpleType>
<simpleType name="NumOfDaysType">
    <restriction base="positiveInteger"/>
</simpleType>
<simpleType name="NumOfSecondsType">

```

```

        <restriction base="positiveInteger"/>
    </simpleType>
    <simpleType name="NumOfSecondsWithZeroType">
        <restriction base="nonNegativeInteger"/>
    </simpleType>
    <complexType name="LanguageType">
        <attribute ref="xml:lang" use="optional"/>
    </complexType>
    <complexType name="ResolutionType">
        <attribute name="width" type="positiveInteger" use="required"/>
        <attribute name="height" type="positiveInteger" use="required"/>
    </complexType>
    <complexType name="TimeWindowOfTheDayType">
        <attribute name="startTime" type="time" use="optional"/>
        <attribute name="endTime" type="time" use="optional"/>
    </complexType>
    <complexType name="TimeWindowOfTheDayWithDefaultValueType">
        <attributeGroup ref="am2:TimeWindowOfTheDayWithDefaultValue"/>
    </complexType>
    <attributeGroup name="TimeWindowOfTheDayWithDefaultValue">
        <attribute name="startTime" type="time" use="optional"
default="00:00:00.00"/>
        <attribute name="endTime" type="time" use="optional"
default="23:59:59.99"/>
    </attributeGroup>
    <!-- ===== -->
    <simpleType name="AnonUserIDSType">
        <list itemType="am2:AnonUserIDType"/>
    </simpleType>
    <simpleType name="AnonUserIDType">
        <restriction base="positiveInteger"/>
    </simpleType>
    <simpleType name="UserIDSType">
        <list itemType="am2:UserIDType"/>
    </simpleType>
    <simpleType name="UserIDType">
        <restriction base="am2:NonEmptyString"/>
    </simpleType>
    <simpleType name="MeasurementRequestIDSType">
        <list itemType="am2:MeasurementRequestIDType"/>
    </simpleType>
    <simpleType name="MeasurementRequestIDType">
        <restriction base="positiveInteger"/>
    </simpleType>
    <simpleType name="ServiceInstanceIDType">
        <restriction base="integer"/>
    </simpleType>
    <simpleType name="TerminalDeviceIDType">
        <restriction base="am2:HexBinary16"/>
    </simpleType>
    <simpleType name="SubscriberIDType">
        <restriction base="am2:NonEmptyString"/>
    </simpleType>
    <simpleType name="PackageIDType">
        <restriction base="positiveInteger"/>
    </simpleType>
    <!-- ===== -->
    <!-- ===== -->
    <!-- Data Elements for H.741 Part.2 -->
    <!-- ===== -->
    <!-- ===== -->
    <!-- User Device Information (Tables 2,5,6) -->
    <!-- ===== -->
    <complexType name="UserDeviceInformationType">

```

```

    <sequence>
      <element name="AMF CapabilityProfile"
type="am2:AMF CapabilityProfileType" minOccurs="0"/>
      <element name="CaptionLanguage" type="am2:LanguageType"/>
      <element name="AudioLanguage" type="am2:LanguageType"/>
      <element name="TVInformation"
type="am2:TV and Audio Amplifier InformationType" minOccurs="0"/>
      <element name="IPTV-TVInformation"
type="am2:Device Information BaseType" minOccurs="0"/>
      <element name="AudioAmplifierInformation"
type="am2:TV and Audio Amplifier InformationType" minOccurs="0"/>
      <element name="STBInformation"
type="am2:Device Information BaseType" minOccurs="0"/>
      <element name="MobileDeviceInformation"
type="am2:Device Information BaseType" minOccurs="0"/>
      <element name="PCInformation" type="am2:Device Information BaseType"
minOccurs="0"/>
      <element name="ImageSize" type="am2:ResolutionType"
minOccurs="0"/>
      <element name="ZoomFactor" type="float" minOccurs="0"/>
      <element name="Obscuration" type="am2:PercentageType"
minOccurs="0"/>
      <element name="VolumeDirection" type="am2:VolumeDirectionType"
minOccurs="0"/>
      <element name="ControlDevice" type="am2:ControlDeviceType"
minOccurs="0"/>
    </sequence>
    <attribute name="serviceInstanceId" type="am2:Service Instance IDType"
use="required"/>
  </complexType>
  <!-- ===== -->
  <complexType name="AMF CapabilityProfileType">
    <sequence>
      <element name="TransportCapabilitiesList"
type="am2:TransportCapabilitiesListType"/>
      <element name="SecurityCapabilities"
type="am2:SecurityCapabilitiesType"/>
      <element name="PermissionOperationModes"
type="am2:PermissionOperationModesType"/>
      <element name="ConfigurationPackageDelivery"
type="am2:ConfigurationPackageDeliveryType"/>
      <element name="MeasurementTriggerMethod"
type="am2:MeasurementTriggerMethodType"/>
      <element name="ReportDeliveryModes"
type="am2:ReportDeliveryModesType"/>
      <element name="OperationalManagementCapabilities"
type="am2:OperationalManagementCapabilitiesType"/>
      <element name="Compression" type="am2:CompressionType"
minOccurs="0" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
  <complexType name="TransportCapabilitiesListType">
    <sequence>
      <element name="TransportProtocolMode"
type="am2:TransportProtocolModeType" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
  <simpleType name="TransportProtocolModeType">
    <restriction base="NMTOKEN"/>
    <!-- Values are out of scope of AM. -->
  </simpleType>
  <complexType name="SecurityCapabilitiesType">
    <sequence>

```

```

        <element name="CryptographicProtocol"
type="am2:CryptographicProtocolType" maxOccurs="unbounded"/>
    </sequence>
</complexType>
<simpleType name="CryptographicProtocolType">
    <restriction base="NMTOKEN">
        <enumeration value="TLS"/>
        <enumeration value="TLS-SRP"/>
        <enumeration value="OTP"/>
        <enumeration value="HMAC"/>
    </restriction>
</simpleType>
<complexType name="PermissionOperationModesType">
    <sequence>
        <element name="PermissionMode" type="am2:PermissionModeType"
maxOccurs="unbounded"/>
    </sequence>
</complexType>
<simpleType name="PermissionModeType">
    <restriction base="NMTOKEN">
        <enumeration value="External"/>
        <enumeration value="Internal"/>
        <enumeration value="Hybrid"/>
    </restriction>
</simpleType>
<complexType name="ConfigurationPackageDeliveryType">
    <sequence>
        <element name="ConfigurationMode" type="am2:ConfigurationModeType"
maxOccurs="unbounded"/>
    </sequence>
</complexType>
<simpleType name="ConfigurationModeType">
    <restriction base="NMTOKEN">
        <enumeration value="Push"/>
        <enumeration value="Pull"/>
        <enumeration value="Hybrid"/>
    </restriction>
</simpleType>
<complexType name="MeasurementTriggerMethodType">
    <sequence>
        <element name="EventTrigger"
type="am2:CommonEventForTriggerMethodType" minOccurs="0" maxOccurs="unbounded"/>
        <element name="TimeTrigger"
type="am2:CommonSampleSetForTriggerMethodType" minOccurs="0"
maxOccurs="unbounded"/>
        <element name="ServiceStartTrigger"
type="am2:LimitedSampleSetForTriggerMethodType" minOccurs="0"
maxOccurs="unbounded"/>
        <!-- The element name "TimeSampleTrigger" is changed into
"TimeTrigger" in order to maintain consistency. (see the element "TimeTrigger"
of the type "MeasurementScheduleType") -->
    </sequence>
</complexType>
<complexType name="CommonEventForTriggerMethodType">
    <attribute name="eventName" type="am2:CommonEventNameType"
use="optional"/>
    <!-- The attribute "eventName" is newly added in order to maintain
consistency. (see the element "EventTrigger" of the type
"MeasurementScheduleType") -->
    <!-- The "use" definition of the attribute "eventName" should be
"required" according to the spec, but the value is set as "optional" for type
extension (based on restriction) in the part 3 schema. -->
</complexType>
<complexType name="CommonSampleSetForTriggerMethodType">

```

