



TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

H.741.1
Amendment 1
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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

IPTV multimedia services and applications for IPTV –
IPTV application event handling

IPTV application event handling: Audience measurement operations for IPTV services

Amendment 1: New Appendices VIII and IX with XML schema on audience measurement service discovery

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Draft new Recommendation ITU-T H.741.1 Amendment 1

IPTV application event handling: Audience measurement operations for IPTV services: New Appendices VIII and IX with XML schema on audience measurement service discovery

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.

This Recommendation, ITU-T H.741.1, specifies the operations of AM, including procedures prior to configuration of terminals, configuration of terminals, reporting by terminals, security mechanisms, and recovery from abnormal situations. ~~The~~ Informative ~~A~~appendices ~~I-VII~~ discuss discovery metadata, implementation considerations, examples, permission levels, vendor considerations, alternative privacy schemes, and discuss capabilities and profiles.

Amendment 1 (2013) adds XML schema on audience measurement service discovery in new Appendix VIII and XML schema instances for TD-AMF configurations, reports and permits in new Appendix IX.

Keywords

audience measurement, audience viewership, audience rating service, contents rating, distributed content service, end-user permission, engagement metrics, interactive services, IPTV application event handling, IPTV service, linear TV, personalised service, privacy protection, configuration, monitoring, reporting, discovery metadata, implementation guidelines, service discovery XML schema, examples.

1. Appendix I Discovery of audience measurement services by terminal devices

Add the following sentence below Appendix I.

The XML schema that can be exchanged for audience measurement service discovery is in Appendix VIII.

2. Add new Appendix VIII

Appendix VIII XML schema on the data structures for audience measurement service discovery

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

This is the XML schema that can be exchanged for audience measurement service discovery.

```
<?xml version="1.0" encoding="UTF-8"?>
<schema xmlns:am1="urn:itut:iptv:am:part1:2012"
xmlns:am2="urn:itut:iptv:am:part2:2012" xmlns="http://www.w3.org/2001/XMLSchema"
targetNamespace="urn:itut:iptv:am:part1:2012" elementFormDefault="qualified"
attributeFormDefault="unqualified">
  <annotation>
    <documentation xml:lang="en"><![CDATA[
      This schema (H.770-v1.xsd) contains the elements to be
      included in [b-ITU-T H.770] for the discovery of AM services,
      which are described in Appendix I of H.741.1.doc.
      The namespace of the schema is "urn:itut:iptv:am:part1:2012", and
      its preferred namespace prefix is "am1"].]>
    </documentation>
  </annotation>
  <import namespace="urn:itut:iptv:am:part2:2012" schemaLocation="H.741.2-
v1.xsd"/>
  <import namespace="http://www.w3.org/XML/1998/namespace"
schemaLocation="http://www.w3.org/2001/03/xml.xsd"/>
  <!-- ===== -->
  <!-- ===== -->
  <!-- Data Elements for H.741 Part.1 -->
  <!-- ===== -->
  <!-- ===== -->
  <!-- ===== -->
  <!-- Elements for the discovery of AM services (Table I.1) -->
  <!-- ===== -->
  <element name="AMServiceDiscovery" type="am1:AMServiceDiscoveryType"/>
  <complexType name="AMServiceDiscoveryType">
    <sequence>
      <element name="PermissionOperationModes" type="am1:PermissionLevelType"
maxOccurs="unbounded"/>
      <element name="Addresses" type="am1:AddressesType"/>
      <element name="ConfigurationModes" type="am1:ConfigurationModesType"/>
      <element name="MeasurementReportTransportProtocol" type="am1:ProtocolType"
maxOccurs="unbounded"/>
      <element name="CryptographicProtocol"
type="am1:CryptographicProtocolWithPreferredType" maxOccurs="unbounded"/>
      <element name="Compression" type="am1:CompressionWithPreferredType"
minOccurs="0" maxOccurs="unbounded"/>
    </sequence>
```

```

    <attribute name="preferred" type="boolean" use="optional" default="false"/>
</complexType>
<!-- ===== -->
<simpleType name="PermissionLevelType">
    <restriction base="NMTOKEN">
        <enumeration value="External"/>
        <enumeration value="Internal"/>
        <enumeration value="Hybrid"/>
    </restriction>
</simpleType>
<!-- ===== -->
<complexType name="AddressesType">
    <sequence>
        <element name="Unicast" type="am1:UnicastType" minOccurs="0"/>
        <element name="Multicast" type="am1:MulticastType" minOccurs="0"/>
    </sequence>
</complexType>
<complexType name="UnicastType">
    <sequence>
        <element name="ConfigRequestAddress" type="am2:URL" minOccurs="0"/>
        <element name="ErrorAddress" type="am2:URL" minOccurs="0"/>
    </sequence>
</complexType>
<complexType name="MulticastType">
    <sequence>
        <element name="MulticastHybridAddress" type="am1:MulticastAddressType"
minOccurs="0"/>
        <element name="MulticastPushAddress" type="am1:MulticastAddressType"
minOccurs="0"/>
        <element name="ErrorAddress" type="am2:URL" minOccurs="0"/>
        <element name="AckAddress" type="am2:URL" minOccurs="0"/>
    </sequence>
</complexType>
<complexType name="MulticastAddressType">
    <simpleContent>
        <extension base="am2:IpAddressType">
            <attribute name="port" type="unsignedShort" use="required"/>
            <attribute name="sourceAddress" type="am2:IpAddressType"
use="required"/>
        </extension>
    </simpleContent>
</complexType>
<!-- ===== -->
<complexType name="ConfigurationModesType">
    <sequence>
        <element name="Push" type="am1:ConfigurationModeType" minOccurs="0"/>
        <element name="Pull" type="am1:ConfigurationModeType" minOccurs="0"/>
        <element name="Hybrid" type="am1:ConfigurationModeType" minOccurs="0"/>
    </sequence>
</complexType>
<complexType name="ConfigurationModeType">
    <sequence>
        <element name="TransportProtocol" type="am1:ProtocolType"
maxOccurs="unbounded"/>
        <!-- The element name "TransportProtocols" is changed into
"TransportProtocol" for consistency with the -->
    </sequence>
    <attribute name="preferred" type="boolean" use="optional" default="false"/>
</complexType>
<complexType name="ProtocolType">
    <simpleContent>
        <extension base="NMTOKEN">

```