International Telecommunication Union

ITU-T

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STANDARDIZATION SECTOR
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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

International Telecommunication Union

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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

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.

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[*] 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/.

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">
```

```xml
            <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">
```

```xml
        <sequence>
            <element name="AMFCapabilityProfile"
type="am2:AMFCapabilityProfileType" minOccurs="0"/>
            <element name="CaptionLanguage" type="am2:LanguageType"/>
            <element name="AudioLanguage" type="am2:LanguageType"/>
            <element name="TVInformation"
type="am2:TVandAudioAmplifierInformationType" minOccurs="0"/>
            <element name="IPTV-TVInformation"
type="am2:DeviceInformationBaseType" minOccurs="0"/>
            <element name="AudioAmplifierInformation"
type="am2:TVandAudioAmplifierInformationType" minOccurs="0"/>
            <element name="STBInformation"
type="am2:DeviceInformationBaseType" minOccurs="0"/>
            <element name="MobileDeviceInformation"
type="am2:DeviceInformationBaseType" minOccurs="0"/>
            <element name="PCInformation" type="am2:DeviceInformationBaseType"
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:ServiceInstanceIDType"
use="required"/>
    </complexType>
    <!-- ========================================= -->
    <complexType name="AMFCapabilityProfileType">
        <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>
```

```xml
        <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">
```

```
            <attribute name="sampleSetName" type="am2:CommonSampleSetNameType"
use="optional"/>
            <!-- The attribute "sampleSetName" is newly added in order to maintain
consistency. (see the element "TimeTrigger" of the type
"MeasurementScheduleType") -->
            <!-- The "use" definition of the attribute "sampleSetName" 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="LimitedSampleSetForTriggerMethodType">
            <attribute name="sampleSetName" type="am2:LimitedSampleSetNameType"
use="optional"/>
            <!-- The attribute "sampleSetName" is newly added in order to maintain
consistency. (see the element "ServiceStartTrigger" of the type
"MeasurementScheduleType") -->
            <!-- The "use" definition of the attribute "sampleSetName" 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>
    <simpleType name="CommonEventNameType">
        <restriction base="NMTOKEN">
            <enumeration value="VideoResize"/>
            <enumeration value="VideoZoom"/>
            <enumeration value="VideoObscure"/>
            <enumeration value="AudioVolume"/>
            <enumeration value="ConfigurationChange"/>
            <enumeration value="UserChange"/>
            <enumeration value="UserInfoChange"/>
            <enumeration value="AudioLanguageChange"/>
            <enumeration value="CaptionLanguageChange"/>
            <enumeration value="DisplayStatus"/>
        </restriction>
    </simpleType>
    <simpleType name="CommonSampleSetNameType">
        <restriction base="NMTOKEN">
            <enumeration value="UserPresent"/>
            <enumeration value="TDLocation"/>
            <enumeration value="DeviceInfo"/>
            <enumeration value="UserBioInfo"/>
            <enumeration value="GenericUserInfo"/>
            <enumeration value="EventCount"/>
            <enumeration value="UserList"/>
            <enumeration value="PermitBlockedInfo"/>
        </restriction>
    </simpleType>
    <simpleType name="LimitedSampleSetNameType">
        <restriction base="am2:CommonSampleSetNameType">
            <enumeration value="TDLocation"/>
            <enumeration value="DeviceInfo"/>
            <enumeration value="UserBioInfo"/>
            <enumeration value="GenericUserInfo"/>
            <enumeration value="UserList"/>
            <enumeration value="PermitBlockedInfo"/>
        </restriction>
    </simpleType>
    <complexType name="ReportDeliveryModesType">
        <sequence>
            <element name="DeliveryMode" type="am2:DeliveryModeType"
maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <simpleType name="DeliveryModeType">
        <restriction base="NMTOKEN">
            <enumeration value="ImmediatePush"/>
```

```xml
                <enumeration value="DelayedPush"/>
                <enumeration value="Pull"/>
                <enumeration value="DelayedPushAndPull"/>
            </restriction>
    </simpleType>
    <complexType name="OperationalManagementCapabilitiesType">
        <sequence>
            <element name="OperationalManagement"
type="am2:OperationalManagementType" maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <simpleType name="OperationalManagementType">
        <restriction base="NMTOKEN">
                <enumeration value="Acknowledgements"/>
                <enumeration value="MulticastThresholdRanges"/>
                <enumeration value="MulticastErrorReporting"/>
                <enumeration value="MulticastUserInfo"/>
                <enumeration value="MulticastDeviceType"/>
                <enumeration value="MulticastMAC"/>
                <enumeration value="ContentFiltering"/>
                <enumeration value="ChannelsMeasured"/>
                <enumeration value="ChannelChangeFilter"/>
                <enumeration value="NavMethodReporting"/>
                <enumeration value="ControlDeviceReporting"/>
        </restriction>
    </simpleType>
    <simpleType name="CompressionType">
        <restriction base="NMTOKEN">
                <enumeration value="BiM"/>
                <enumeration value="ZLIB"/>
                <enumeration value="Infoset"/>
                <enumeration value="EXI"/>
                <enumeration value="None"/>
                <!-- "None" is included for the "CompressionType" of Part 1. -->
        </restriction>
    </simpleType>
    <!-- ============================================= -->
    <complexType name="TVandAudioAmplifierInformationType">
        <sequence>
                <element name="Manufacturer" type="am2:EISA-PNPID" minOccurs="0"/>
                <element name="Model " type="am2:VESA-EDID-ModelCode"
minOccurs="0"/>
                <element name="SerialNum " type="am2:VESA-EDID-SerialNumCode"
minOccurs="0"/>
        </sequence>
    </complexType>
    <simpleType name="EISA-PNPID">
        <restriction base="unsignedShort"/>
    </simpleType>
    <simpleType name="VESA-EDID-ModelCode">
        <restriction base="unsignedShort"/>
    </simpleType>
    <simpleType name="VESA-EDID-SerialNumCode">
        <restriction base="unsignedInt"/>
    </simpleType>
    <!-- ============================================= -->
    <complexType name="DeviceInformationBaseType">
        <sequence>
                <element name="Manufacturer" type="am2:IEEE-OUI" minOccurs="0"/>
                <element name="Model " type="am2:NonEmptyString" minOccurs="0"/>
                <element name="SerialNum " type="am2:NonEmptyString"
minOccurs="0"/>
        </sequence>
    </complexType>
```

```xml
<simpleType name="IEEE-OUI">
    <restriction base="am2:HexBinary6"/>
</simpleType>
<!-- ============================================= -->
<simpleType name="VolumeDirectionType">
    <restriction base="NMTOKEN">
        <enumeration value="Up"/>
        <enumeration value="Down"/>
        <enumeration value="Mute"/>
        <enumeration value="Unmute"/>
    </restriction>
</simpleType>
<!-- ============================================= -->
<simpleType name="ControlDeviceType">
    <restriction base="integer">
        <enumeration value="0"/>
        <enumeration value="1"/>
        <enumeration value="2"/>
        <enumeration value="10"/>
        <enumeration value="20"/>
        <enumeration value="30"/>
        <enumeration value="40"/>
    </restriction>
</simpleType>
<!-- ============================================= -->
<!-- User information (Tables 3,4) -->
<!-- ============================================= -->
<complexType name="UserInformationType">
    <sequence>
        <element name="PermissionLevel" type="am2:PermissionLevelType"
default="0" minOccurs="0"/>
        <element name="ControlledUserInfoTypeString"
type="am2:ControlledUserInfoTypeStringType" minOccurs="0"
maxOccurs="unbounded"/>
        <element name="ControlledUserInfoTypeDate"
type="am2:ControlledUserInfoTypeDateType" minOccurs="0" maxOccurs="unbounded"/>
        <element name="ControlledUserInfoTypeAddress"
type="am2:ControlledUserInfoAddressType" minOccurs="0" maxOccurs="unbounded"/>
        <element name="GenericUserInfoType"
type="am2:GenericUserInfoTypeType" minOccurs="0" maxOccurs="unbounded"/>
        <element name="TDLocation" type="am2:PointType"/>
        <element name="UserPresent" type="am2:UserPresentType"/>
        <element name="UserList" type="am2:UserListType" minOccurs="0"/>
        <element name="PermitBlockedInfo"
type="am2:PermitBlockedInfoType"/>
    </sequence>
    <attribute name="serviceProviderId" type="am2:H770IDType"
use="required"/>
    <attribute name="subscriberId" type="am2:SubscriberIDType"
use="required"/>
</complexType>
<!-- ============================================= -->
<simpleType name="PermissionLevelType">
    <restriction base="nonNegativeInteger">
        <enumeration value="0"/>
        <enumeration value="1"/>
        <enumeration value="2"/>
        <enumeration value="3"/>
    </restriction>
</simpleType>
<simpleType name="LimitedPermissionLevelType">
    <restriction base="am2:PermissionLevelType">
        <enumeration value="0"/>
        <enumeration value="1"/>
```

```xml
            <enumeration value="2"/>
        </restriction>
    </simpleType>
    <complexType name="ControlledUserInfoTypeStringType">
        <simpleContent>
            <extension base="am2:NonEmptyString">
                <attribute name="controlledUserInfoValueString"
type="am2:NonEmptyString" use="required"/>
            </extension>
        </simpleContent>
    </complexType>
    <complexType name="ControlledUserInfoTypeDateType">
        <simpleContent>
            <extension base="am2:NonEmptyString">
                <attribute name="controlledUserInfoValueDate" type="date"
use="required"/>
            </extension>
        </simpleContent>
    </complexType>
    <complexType name="ControlledUserInfoAddressType">
        <sequence>
            <element name="controlledUserInfoTypeAddress"
type="am2:NonEmptyString"/>
            <element name="controlledUserInfoValueAddress"
type="am2:CivicAddr"/>
        </sequence>
    </complexType>
    <complexType name="GenericUserInfoTypeType">
        <simpleContent>
            <extension base="am2:NonEmptyString">
                <attribute name="genericUserInfoValue"
type="am2:NonEmptyString" use="required"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- ========================================== -->
    <complexType name="UserPresentType">
        <sequence>
            <element name="PresenceMethod" type="am2:PresenceMethodType"
default="RemoteKeyPush" minOccurs="0"/>
            <element name="PresenceTime" type="time" minOccurs="0"/>
            <element name="PresenceConfidence" type="am2:PercentageType"
minOccurs="0"/>
        </sequence>
    </complexType>
    <simpleType name="PresenceMethodType">
        <restriction base="NMTOKEN">
            <enumeration value="RemoteKeyPush"/>
        </restriction>
    </simpleType>
    <!-- ========================================== -->
    <complexType name="UserListType">
        <sequence>
            <element name="UserIdInfo" type="am2:UserIdInfoType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <complexType name="UserIdInfoType">
        <sequence>
            <element name="UserIdMethod" type="am2:NonEmptyString"
minOccurs="0"/>
            <element name="UserIdConfidence" type="am2:PercentageType"
minOccurs="0"/>
        </sequence>
```

```xml
            <attribute name="anonUserId" type="am2:AnonUserIDType"
use="optional"/>
            <attribute name="userId" type="am2:UserIDType" use="optional"/>
    </complexType>
    <!-- ===================================== -->
    <complexType name="PermitBlockedInfoType">
        <sequence>
            <element name="PermissionLevelFlag"
type="am2:LimitedPermissionLevelType" default="0" minOccurs="0"/>
            <element name="TerminalDeviceTypeFlag"
type="am2:TerminalDeviceTypeType" minOccurs="0"/>
            <element name="ChannelFlag" type="boolean" default="false"
minOccurs="0"/>
            <element name="ContentClassFlag" type="am2:ContentClassNameType"
minOccurs="0"/>
        </sequence>
    </complexType>
    <!-- ========================================================= -->
    <!-- ========================================================= -->
    <!-- Data Structures for H.741 Part.2 -->
    <!-- ========================================================= -->
    <!-- ========================================================= -->
    <!-- -->
    <!-- ========================================================= -->
    <!-- 1. Configuration Package Request (Table 18) -->
    <!-- ========================================================= -->
    <complexType name="ConfigPackageRequestType">
        <sequence>
            <element name="TerminalDeviceType"
type="am2:TerminalDeviceTypeType"/>
            <element name="UserPermitInfo" type="am2:UserPermitInfoType"
minOccurs="0" maxOccurs="unbounded"/>
            <element name="AMFCapabilityProfile"
type="am2:AMFCapabilityProfileType" minOccurs="0"/>
            <element name="CurrentMeasurement" type="am2:PackageReferenceType"
minOccurs="0"/>
            <element name="FutureMeasurement" type="am2:PackageReferenceType"
minOccurs="0"/>
        </sequence>
        <attribute name="terminalDeviceIdref" type="am2:TerminalDeviceIDType"
use="required"/>
        <attributeGroup ref="am2:SPAndSubscriberReference"/>
    </complexType>
    <complexType name="PackageReferenceType">
        <attributeGroup ref="am2:packageReference"/>
    </complexType>
    <attributeGroup name="packageReference">
        <attribute name="packageId" type="am2:PackageIDType" use="required"/>
        <attribute name="packageVersion" type="positiveInteger"
use="optional"/>
    </attributeGroup>
    <attributeGroup name="SPAndSubscriberReference">
        <attribute name="serviceProviderIdref" type="am2:H770IDType"
use="optional"/>
        <attribute name="subscriberIdref" type="am2:SubscriberIDType"
use="required"/>
    </attributeGroup>
    <!-- ========================================================= -->
    <!-- 2. Configuration Package Request Response (Tables
9,10,11,12,13,15,19,20) -->
    <!-- ========================================================= -->
    <!-- ========================================== -->
    <!-- Configuration package request response (Table 19) -->
    <!-- ========================================== -->
```

```xml
    <complexType name="ConfigPackageRequestResponseType">
        <sequence>
            <element name="ConfigurationPackageCheckDelay"
type="am2:NumOfDaysType" minOccurs="0"/>
            <element name="ImmediateMeasurementDirective"
type="am2:ImmediateMeasurementDirectiveType" minOccurs="0"/>
            <element name="FutureMeasurementDirective"
type="am2:FutureMeasurementDirectiveType" minOccurs="0"/>
        </sequence>
    </complexType>
    <!-- ============================================ -->
    <complexType name="ImmediateMeasurementDirectiveType">
        <sequence>
            <element name="Code"
type="am2:ImmediateMeasurementDirectiveCodeType" minOccurs="0"/>
            <element name="AMFConfigurationPackage"
type="am2:AMFConfigurationPackageType" minOccurs="0"/>
        </sequence>
    </complexType>
    <simpleType name="ImmediateMeasurementDirectiveCodeType">
        <restriction base="NMTOKEN">
            <enumeration value="NoAMRequired"/>
            <enumeration value="NoConfPackageChange"/>
            <enumeration value="ConfPackagePresent"/>
        </restriction>
    </simpleType>
    <!-- ============================================ -->
    <complexType name="FutureMeasurementDirectiveType">
        <sequence>
            <element name="Code" type="am2:FutureMeasurementDirectiveCodeType"
minOccurs="0"/>
            <element name="AMFConfigurationPackage"
type="am2:AMFConfigurationPackageType" minOccurs="0"/>
        </sequence>
    </complexType>
    <simpleType name="FutureMeasurementDirectiveCodeType">
        <restriction base="NMTOKEN">
            <enumeration value="NoFutureConfPackage"/>
            <enumeration value="NoConfPackageChange"/>
            <enumeration value="ConfPackagePresent"/>
        </restriction>
    </simpleType>
    <!-- ============================================ -->
    <!-- AMF Configuration Package (Tables 16) -->
    <!-- ============================================ -->
    <complexType name="AMFConfigurationPackageType">
        <sequence>
            <element name="UserPermitInfo" type="am2:UserPermitInfoType"
minOccurs="0" maxOccurs="unbounded"/>
            <element name="MeasurementRequestSet"
type="am2:MeasurementRequestSetType" maxOccurs="unbounded"/>
            <element name="MeasurementRequestSetFilter"
type="am2:MeasurementRequestSetFilterType" minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
        <attributeGroup ref="am2:packageReference"/>
        <attribute name="effectivityDateAndTime" type="dateTime"
use="optional"/>
    </complexType>
    <!-- ============================================ -->
    <!-- User Permit Info (Tables 16,20) -->
    <!-- ============================================ -->
    <!-- =============================== (Table 16) -->
    <complexType name="UserPermitInfoType">
        <sequence>
```

```
            <element name="UserPermit" type="am2:UserPermitType"/>
        </sequence>
        <attribute name="lastUpdateDateAndTime" type="dateTime"
use="optional"/>
    </complexType>
    <!-- ================================== (Table 20) -->
    <complexType name="UserPermitType">
        <sequence>
            <element name="DefaultPermissionLevel"
type="am2:PermissionLevelType" minOccurs="0"/>
            <element name="DefaultAllContentClassExceptList"
type="am2:ContentClassListType" minOccurs="0"/>
            <element name="UserPermissionSet" type="am2:UserPermissionSetType"
minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
        <attribute name="expirationDate" type="date" use="optional"/>
        <attributeGroup ref="am2:userListReference"/>
    </complexType>
    <attributeGroup name="userListReference">
        <attribute name="anonUserIdref" type="am2:AnonUserIDSType"
use="optional"/>
        <attribute name="userIdref" type="am2:UserIDSType" use="optional"/>
    </attributeGroup>
    <complexType name="UserPermissionSetType">
        <sequence>
            <element name="PermissionLevel" type="am2:PermissionLevelType"
minOccurs="0"/>
            <element name="UserPermission" type="am2:UserPermissionType"
maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <complexType name="UserPermissionType">
        <sequence>
            <!-- The element "ChannelQualifier" will be extended in the Part
3. -->
            <element name="TerminalDeviceSet" type="am2:TerminalDeviceSetType"
minOccurs="0"/>
            <element name="AllContentClassExceptList"
type="am2:ContentClassListType" minOccurs="0"/>
        </sequence>
    </complexType>
    <complexType name="TerminalDeviceSetType">
        <sequence>
            <element name="TerminalDeviceType"
type="am2:TerminalDeviceTypeType" maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <simpleType name="TerminalDeviceTypeType">
        <restriction base="hexBinary">
            <enumeration value="0000"/>
            <enumeration value="0001"/>
            <enumeration value="0002"/>
            <enumeration value="0003"/>
            <enumeration value="0004"/>
            <enumeration value="0005"/>
        </restriction>
    </simpleType>
    <!-- ========================================== -->
    <!-- Measurement Request Set (Tables 9,10,11,12,13) -->
    <!-- ========================================== -->
    <!-- ================================== (Table 13) -->
    <complexType name="MeasurementRequestSetType">
        <sequence>
            <sequence>
```

```xml
                    <element name="DefaultAllContentClassExceptList"
type="am2:ContentClassListType" minOccurs="0"/>
                    <element name="DefaultMeasurementPeriod"
type="am2:MeasurementPeriodType" minOccurs="0" maxOccurs="unbounded"/>
                    <element name="DefaultTimeDrivenMeasurementPeriodicity"
type="am2:NumOfSecondsType" minOccurs="0"/>
                    <element name="DefaultNothingNewReportMode"
type="am2:NothingNewReportModeType" minOccurs="0"/>
                    <element name="DefaultInterval" type="am2:NumOfDaysType"
minOccurs="0"/>
                    <element name="DefaultDeliveryAddress" type="am2:URL"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="DefaultRetransmitNumber"
type="positiveInteger" minOccurs="0"/>
                    <element name="DefaultStorageCongestionPolicy"
type="am2:StorageCongestionPolicyType" default="DropSufficient" minOccurs="0"/>
                    <element name="DefaultMeasurementReportNumberByPush"
type="am2:MeasurementReportNumberByPushType" default="1" minOccurs="0"/>
                    <element name="DefaultMaxTimeBetweenDelivery"
type="am2:NumOfSecondsWithZeroType" default="0" minOccurs="0"/>
                    <element name="DefaultDeliveryWindow"
type="am2:TimeWindowOfTheDayWithDefaultValueType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="DefaultServiceStartPermitBlockedInfo"
type="am2:PermitBlockedInfoType" minOccurs="0"/>
                    <element name="DefaultTimeTriggerPermitBlockedInfo"
type="am2:PermitBlockedInfoType" minOccurs="0"/>
                </sequence>
                <element name="MeasurementRequest"
type="am2:MeasurementRequestType" maxOccurs="unbounded"/>
            </sequence>
        </complexType>
        <!-- ================================== (Table 9) -->
        <complexType name="MeasurementRequestType">
            <sequence>
                <!-- The element "LinearTVQualifier" will be extended in the Part
3. -->
                <element name="AllContentClassExceptList"
type="am2:ContentClassListType" minOccurs="0"/>
                <element name="MeasurementSchedule"
type="am2:MeasurementScheduleType" maxOccurs="unbounded"/>
                <element name="MeasurementDeliverySchedule"
type="am2:MeasurementDeliveryScheduleType" minOccurs="0"/>
            </sequence>
            <attribute name="measurementRequestId"
type="am2:MeasurementRequestIDType" use="required"/>
        </complexType>
        <!-- ================================== (Table 10) -->
        <complexType name="ContentClassListType">
            <sequence>
                <element name="ContentClass" type="am2:ContentClassType"
maxOccurs="unbounded"/>
                <!-- Original definitions of the element "ContentClassDomain". -->
                <!-- element name="ContentClassDomain"
type="am2:ContentClassDomainType" maxOccurs="unbounded"/ -->
            </sequence>
        </complexType>
        <complexType name="ContentClassType">
            <simpleContent>
                <extension base="am2:ContentClassNameType">
                    <attribute name="domain" type="am2:NonEmptyString"
use="required"/>
                </extension>
            </simpleContent>
```

```xml
        </complexType>
        <simpleType name="ContentClassNameType">
            <restriction base="am2:NonEmptyString"/>
        </simpleType>
        <!-- =============================== (Table 11) -->
        <complexType name="MeasurementScheduleType">
            <sequence>
                <element name="MeasurementPeriod" type="am2:MeasurementPeriodType"
minOccurs="0" maxOccurs="unbounded"/>
                <element name="EventTrigger"
type="am2:EventTriggerForScheduleType" minOccurs="0" maxOccurs="unbounded"/>
                <element name="TimeTrigger" type="am2:TimeTriggerForScheduleType"
minOccurs="0"/>
                <element name="ServiceStartTrigger"
type="am2:ServiceStartTriggerForScheduleType" minOccurs="0"/>
            </sequence>
        </complexType>
        <!-- ========================================== -->
        <complexType name="MeasurementPeriodType">
            <sequence>
                <element name="DayOfTheWeek" type="am2:DayWithTimeWindowType"
default="0" minOccurs="0" maxOccurs="unbounded"/>
            </sequence>
        </complexType>
        <complexType name="DayWithTimeWindowType">
            <simpleContent>
                <extension base="am2:DayOfTheWeekType">
                    <attributeGroup
ref="am2:TimeWindowOfTheDayWithDefaultValue"/>
                </extension>
            </simpleContent>
        </complexType>
        <simpleType name="DayOfTheWeekType">
            <restriction base="nonNegativeInteger">
                <enumeration value="0"/>
                <enumeration value="1"/>
                <enumeration value="2"/>
                <enumeration value="3"/>
                <enumeration value="4"/>
                <enumeration value="5"/>
                <enumeration value="6"/>
                <enumeration value="7"/>
                <enumeration value="8"/>
                <enumeration value="9"/>
            </restriction>
        </simpleType>
        <!-- ========================================== -->
        <complexType name="TriggerBaseType">
            <sequence>
                <element name="Priority" type="am2:PriorityType" default="0"
minOccurs="0"/>
            </sequence>
        </complexType>
        <simpleType name="PriorityType">
            <restriction base="nonNegativeInteger">
                <minInclusive value="0"/>
                <maxInclusive value="10"/>
            </restriction>
        </simpleType>
        <!-- ========================================== -->
        <complexType name="EventTriggerForScheduleType">
            <complexContent>
                <extension base="am2:TriggerBaseType">
                    <sequence>
```

```xml
                    <element name="Event"
type="am2:CommonEventForScheduleType" minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <complexType name="CommonEventForScheduleType">
        <attribute name="eventName" type="am2:CommonEventNameType"
use="optional"/>
        <attribute name="eventParameter1" type="normalizedString"
use="optional"/>
        <!-- The attribute "eventName" is newly added in order to maintain
consistency. (see the attribute "sampleSetIdentifier" of the type
"CommonSampleSetType") -->
        <!-- The "use" definition of the attribute "eventName" should be
"required", but the value is set as "optional" for type extension (based on
restriction) in the part 3 schema. -->
    </complexType>
    <!-- ========================================= -->
    <complexType name="TimeTriggerForScheduleType">
        <complexContent>
            <extension base="am2:TriggerBaseType">
                <sequence>
                    <element name="Periodicity" type="positiveInteger"/>
                    <element name="NothingNewReportMode"
type="am2:NothingNewReportModeType" default="0" minOccurs="0"/>
                    <element name="SampleSet"
type="am2:CommonSampleSetForScheduleType" minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <simpleType name="NothingNewReportModeType">
        <restriction base="nonNegativeInteger">
            <enumeration value="0"/>
            <enumeration value="1"/>
            <enumeration value="2"/>
        </restriction>
    </simpleType>
    <complexType name="CommonSampleSetForScheduleType">
        <sequence>
            <element name="SampleSetQualifier"
type="am2:SampleSetQualifierType" minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
        <attribute name="sampleSetName" type="am2:CommonSampleSetNameType"
use="optional"/>
        <!-- The original name of the attribute "sampleSetName" is
"sampleSetIdentifier". -->
        <!-- The values of the CommonSampleSetNameType are not "idtentifiers".
They are just "names" of the sample set. -->
        <!-- Original "use" definition of the attribute "sampleSetName" should
be "required", but the value is set as "optional" for type extension (based on
restriction) in the part 3 schema. -->
    </complexType>
    <!-- ========================================= -->
    <complexType name="ServiceStartTriggerForScheduleType">
        <complexContent>
            <extension base="am2:TriggerBaseType">
                <sequence>
                    <element name="Interval" type="am2:NumOfDaysType"
minOccurs="0"/>
                    <element name="SampleSet"
type="am2:LimitedSampleSetForScheduleType" minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
```

```
                </extension>
            </complexContent>
        </complexType>
        <complexType name="LimitedSampleSetForScheduleType">
            <sequence>
                <element name="SampleSetQualifier"
type="am2:SampleSetQualifierType" minOccurs="0" maxOccurs="unbounded"/>
            </sequence>
            <attribute name="sampleSetName" type="am2:LimitedSampleSetNameType"
use="optional"/>
            <!-- The original name of the attribute "sampleSetName" is
"sampleSetIdentifier". -->
            <!-- The values of the CommonSampleSetNameType are not "idtentifiers".
They are just "names" of the sample set. -->
            <!-- Original "use" definition of the attribute "sampleSetName" should
be "required", but the value is set as "optional" for type extension (based on
restriction) in the part 3 schema. -->
        </complexType>
        <simpleType name="SampleSetQualifierType">
            <restriction base="NMTOKEN"/>
            <!-- Parameters relating to the sample set identifier attribute. -->
        </simpleType>
        <!-- ================================= (Table 12) -->
        <complexType name="MeasurementDeliveryScheduleType">
            <sequence>
                <element name="DeliveryAddress" type="am2:URL" minOccurs="0"
maxOccurs="unbounded"/>
                <element name="RetransmitNumber" type="positiveInteger"
minOccurs="0"/>
                <element name="StorageCongestionPolicy"
type="am2:StorageCongestionPolicyType" minOccurs="0"/>
                <choice>
                    <element name="ImmediatePush" type="am2:ImmediatePushType"
minOccurs="0"/>
                    <element name="DelayedDelivery"
type="am2:DelayedDeliveryType" minOccurs="0"/>
                    <element name="Pull" type="am2:PullType" minOccurs="0"/>
                    <element name="DelayedPushAndPull"
type="am2:DelayedDeliveryType" minOccurs="0"/>
                </choice>
            </sequence>
        </complexType>
        <simpleType name="StorageCongestionPolicyType">
            <restriction base="NMTOKEN">
                <enumeration value="ImmediatePush"/>
                <enumeration value="DropSufficient"/>
            </restriction>
        </simpleType>
        <!-- ========================================= -->
        <complexType name="ImmediatePushType">
            <sequence>
                <element name="MeasurementReportNumberByPush"
type="am2:MeasurementReportNumberByPushType" default="1" minOccurs="0"/>
                <element name="MaxTimeBetweenDelivery"
type="am2:NumOfSecondsWithZeroType" minOccurs="0"/>
            </sequence>
        </complexType>
        <simpleType name="MeasurementReportNumberByPushType">
            <restriction base="positiveInteger">
                <enumeration value="1"/>
            </restriction>
        </simpleType>
        <complexType name="DelayedDeliveryType">
            <sequence>
```

```xml
                <element name="DeliveryWindow" type="am2:TimeWindowOfTheDayType"
minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <complexType name="PullType">
        <!-- TBD -->
    </complexType>
    <!-- ============================================= -->
    <!-- Measurement Request Set Filter (Table 14) -->
    <!-- ============================================= -->
    <complexType name="MeasurementRequestSetFilterType">
        <sequence>
            <element name="UserInfoTargetString"
type="am2:UserInfoTargetStringType" maxOccurs="unbounded"/>
            <!-- Original definitions of the element "UserInfoTarget". -->
            <!-- element name="UserInfoTarget" type="am2:UserInfoTargetType"
maxOccurs="unbounded"/ -->
        </sequence>
        <attribute name="measurementRequestIdref"
type="am2:MeasurementRequestIDSType" use="required"/>
    </complexType>
    <complexType name="UserInfoTargetStringType">
        <simpleContent>
            <extension base="am2:NonEmptyString">
                <attribute name="type" type="am2:NonEmptyString"
use="required"/>
                <attribute name="ignoreIfUnavailable" type="boolean"
use="optional" default="false"/>
            </extension>
        </simpleContent>
        <!-- Originally defined in H.741.4, but moved to H.741.2 in order to
avoid recursive imports between the two schemas. -->
    </complexType>
    <!-- Original definitions of the type "UserInfoTargetType". -->
    <!-- complexType name="UserInfoTargetType">
        <sequence>
            <element name="UserInfoTypeString" type="am2:NonEmptyString"/>
            <element name="IgnoreIfUnavailable" type="boolean" default="false"
minOccurs="0"/>
            <element name="UserInfoValueString" type="am2:NonEmptyString"/>
        </sequence>
    </complexType -->
    <!-- ====================================================== -->
    <!-- 3. Report Package Request (Table 15) -->
    <!-- ====================================================== -->
    <complexType name="MeasurementReportRequestType">
        <attribute name="measurementRequestIdref"
type="am2:MeasurementRequestIDSType" use="optional"/>
    </complexType>
    <!-- ====================================================== -->
    <!-- 4. Report Package Request Response (Tables 21,22) -->
    <!-- ====================================================== -->
    <!-- ============================================= -->
    <!-- AM Report Package (Table 22) -->
    <!-- ============================================= -->
    <complexType name="AMReportPackageType">
        <sequence>
            <element name="StorageCongestionImpactedService"
type="am2:StorageCongestionImpactedServiceType" minOccurs="0"
maxOccurs="unbounded"/>
            <element name="MeasurementReport" type="am2:MeasurementReportType"
maxOccurs="unbounded"/>
        </sequence>
```

```
            <attribute name="subscriberIdref" type="am2:SubscriberIDType"
use="optional"/>
            <attribute name="terminalDeviceIdref" type="am2:TerminalDeviceIDType"
use="required"/>
    </complexType>
    <!-- ========================================== -->
    <complexType name="StorageCongestionImpactedServiceType">
            <attribute name="serviceStopDropped" type="boolean" use="optional"
default="false"/>
    </complexType>
    <!-- ========================================== -->
    <!-- Measurement Report (Table 21) -->
    <!-- ========================================== -->
    <complexType name="MeasurementReportType">
            <sequence>
                    <element name="DisplayStatus" type="am2:DisplayStatusType"
minOccurs="0"/>
                    <element name="AudioFocus" type="am2:AudioFocusType"
minOccurs="0"/>
                    <element name="CaptionLanguageChange"
type="am2:CaptionLanguageChangeType" minOccurs="0"/>
                    <element name="AudioLanguageChange"
type="am2:AudioLanguageChangeType" minOccurs="0"/>
                    <element name="AudioVolume" type="am2:AudioVolumeType"
minOccurs="0"/>
                    <element name="ConfigurationChange"
type="am2:ConfigurationChangeType" minOccurs="0"/>
                    <element name="VideoObscure" type="am2:VideoObscureType"
minOccurs="0"/>
                    <element name="VideoZoom" type="am2:VideoZoomType" minOccurs="0"/>
                    <element name="VideoResize" type="am2:VideoResizeType"
minOccurs="0"/>
                    <element name="EventCount" type="am2:EventCountType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="DeviceInformation" type="am2:DeviceInformationType"
minOccurs="0"/>
                    <element name="UserBiographicInformation"
type="am2:UserBiographicInformationType" minOccurs="0"/>
                    <element name="TDLocation" type="am2:PointType" minOccurs="0"/>
                    <element name="UserList" type="am2:UserListType" minOccurs="0"/>
                    <element name="UserPresent" type="am2:UserPresentType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="GenericUserInfo" type="am2:GenericUserInfoType"
minOccurs="0"/>
                    <element name="UserInfoChange" type="am2:UserInfoChangeType"
minOccurs="0"/>
                    <element name="PermitBlockedInfo" type="am2:PermitBlockedInfoType"
minOccurs="0"/>
            </sequence>
            <attribute name="measurementRequestIdref"
type="am2:MeasurementRequestIDType" use="required"/>
            <attribute name="measurementReportTriggerTime" type="dateTime"
use="required"/>
    </complexType>
    <simpleType name="DisplayStatusType">
            <restriction base="NMTOKEN">
                    <enumeration value="TurnedOff"/>
                    <enumeration value="TurnedOn"/>
            </restriction>
    </simpleType>
    <!-- ========================================== -->
    <complexType name="AudioFocusType">
            <sequence>
```

```xml
            <element name="IPTVFocus" type="boolean" default="true"
minOccurs="0"/>
        </sequence>
        <attribute name="serviceInstanceIdref"
type="am2:ServiceInstanceIDType" use="required"/>
    </complexType>
    <!-- ========================================= -->
    <complexType name="CaptionLanguageChangeType">
        <sequence>
            <element name="CaptionLanguage" type="am2:LanguageType"/>
        </sequence>
        <attribute name="serviceInstanceIdref"
type="am2:ServiceInstanceIDType" use="required"/>
    </complexType>
    <!-- ========================================= -->
    <complexType name="AudioLanguageChangeType">
        <sequence>
            <element name="AudioLanguage" type="am2:LanguageType"/>
        </sequence>
        <attribute name="serviceInstanceIdref"
type="am2:ServiceInstanceIDType" use="required"/>
    </complexType>
    <!-- ========================================= -->
    <complexType name="AudioVolumeType">
        <sequence>
            <element name="VolumeDirection" type="am2:VolumeDirectionType"/>
        </sequence>
        <attribute name="serviceInstanceIdref"
type="am2:ServiceInstanceIDType" use="required"/>
    </complexType>
    <!-- ========================================= -->
    <complexType name="ConfigurationChangeType">
        <sequence>
            <element name="AMFCapabilityProfile"
type="am2:AMFCapabilityProfileType" minOccurs="0"/>
            <element name="TVInformation"
type="am2:TVandAudioAmplifierInformationType" minOccurs="0"/>
            <element name="AudioAmplifierInformation"
type="am2:TVandAudioAmplifierInformationType" minOccurs="0"/>
        </sequence>
    </complexType>
    <!-- ========================================= -->
    <complexType name="VideoObscureType">
        <sequence>
            <element name="Obscuration" type="am2:PercentageType"/>
        </sequence>
        <attribute name="serviceInstanceIdref"
type="am2:ServiceInstanceIDType" use="required"/>
    </complexType>
    <!-- ========================================= -->
    <complexType name="VideoZoomType">
        <sequence>
            <element name="ZoomFactor" type="float"/>
        </sequence>
        <attribute name="serviceInstanceIdref"
type="am2:ServiceInstanceIDType" use="required"/>
    </complexType>
    <!-- ========================================= -->
    <complexType name="VideoResizeType">
        <sequence>
            <element name="ResizedImage" type="am2:ResolutionType"/>
        </sequence>
        <attribute name="serviceInstanceIdref"
type="am2:ServiceInstanceIDType" use="required"/>
```

```xml
        </complexType>
        <!-- ========================================= -->
        <complexType name="EventCountType">
            <sequence>
                <element name="EventsCounted" type="nonNegativeInteger"
default="0" minOccurs="0"/>
            </sequence>
            <attribute name="serviceInstanceIdref"
type="am2:ServiceInstanceIDType" use="required"/>
            <attribute name="startTime" type="time" use="required"/>
        </complexType>
        <!-- ========================================= -->
        <complexType name="DeviceInformationType">
            <sequence>
                <element name="STBInformation"
type="am2:DeviceInformationBaseType" minOccurs="0"/>
                <element name="AudioAmplifierInformation"
type="am2:TVandAudioAmplifierInformationType" minOccurs="0"/>
                <element name="TVInformation"
type="am2:TVandAudioAmplifierInformationType" minOccurs="0"/>
                <element name="IPTV-TVInformation"
type="am2:DeviceInformationBaseType" minOccurs="0"/>
                <element name="MobileDeviceInformation"
type="am2:DeviceInformationBaseType" minOccurs="0"/>
                <element name="PCInformation" type="am2:DeviceInformationBaseType"
minOccurs="0"/>
            </sequence>
        </complexType>
        <!-- ========================================= -->
        <complexType name="UserBiographicInformationType">
            <sequence>
                <element name="UserIdBioInfo" type="am2:UserIdBioInfoType"
maxOccurs="unbounded"/>
            </sequence>
        </complexType>
        <complexType name="UserIdBioInfoType">
            <sequence>
                <element name="ControlledUserInfoTypeString"
type="am2:ControlledUserInfoTypeStringType" minOccurs="0"
maxOccurs="unbounded"/>
                <element name="ControlledUserInfoTypeDate"
type="am2:ControlledUserInfoTypeDateType" minOccurs="0" maxOccurs="unbounded"/>
                <element name="ControlledUserInfoTypeAddress"
type="am2:ControlledUserInfoAddressType" minOccurs="0" maxOccurs="unbounded"/>
            </sequence>
            <attribute name="userIdref" type="am2:UserIDType" use="optional"/>
        </complexType>
        <!-- ========================================= -->
        <complexType name="GenericUserInfoType">
            <sequence>
                <element name="UserIdGenericInfo" type="am2:UserIdGenericInfoType"
maxOccurs="unbounded"/>
            </sequence>
        </complexType>
        <complexType name="UserIdGenericInfoType">
            <sequence>
                <element name="GenericUserInfoType"
type="am2:GenericUserInfoTypeType" minOccurs="0" maxOccurs="unbounded"/>
            </sequence>
            <attributeGroup ref="am2:userReference"/>
        </complexType>
        <attributeGroup name="userReference">
            <attribute name="anonUserIdref" type="am2:AnonUserIDType"
use="optional"/>
```

```xml
            <attribute name="userIdref" type="am2:UserIDType" use="optional"/>
        </attributeGroup>
        <!-- ======================================== -->
        <complexType name="UserInfoChangeType">
            <sequence>
                <element name="ControlledUserInfoTypeString"
type="am2:ControlledUserInfoTypeStringType" minOccurs="0"
maxOccurs="unbounded"/>
                <element name="ControlledUserInfoTypeDate"
type="am2:ControlledUserInfoTypeDateType" minOccurs="0" maxOccurs="unbounded"/>
                <element name="ControlledUserInfoTypeAddress"
type="am2:ControlledUserInfoAddressType" minOccurs="0" maxOccurs="unbounded"/>
                <element name="GenericUserInfoType"
type="am2:GenericUserInfoTypeType" minOccurs="0" maxOccurs="unbounded"/>
            </sequence>
            <attributeGroup ref="am2:userReference"/>
        </complexType>
        <!-- ==================================================== -->
        <!-- 5. Ack (Table 17) -->
        <!-- ==================================================== -->
        <complexType name="AckType"/>
        <!-- ==================================================== -->
        <!-- 6. Error (Table 8) -->
        <!-- ==================================================== -->
        <complexType name="ErrorType">
            <sequence>
                <element name="Accepted" type="boolean" default="true"
minOccurs="0"/>
                <element name="HighLevelError" type="am2:HighLevelErrorType"
minOccurs="0"/>
                <element name="ConfigPackageError"
type="am2:ConfigPackageErrorType" minOccurs="0"/>
                <element name="ReportRequestError"
type="am2:ReportRequestErrorType" minOccurs="0"/>
                <element name="ReportError" type="am2:ReportErrorType"
minOccurs="0"/>
                <element name="ConfigRequestError"
type="am2:ConfigRequestErrorType" minOccurs="0"/>
            </sequence>
        </complexType>
        <!-- ========================================= -->
        <complexType name="HighLevelErrorType">
            <sequence>
                <element name="ErrorCode" type="am2:HighLevelErrorCodeType"/>
                <!-- The element "HighLevelErrorCode" is changed into "ErrorCode"
in order to maintain consistency. (see "ConfigPackageErrorType",
"ReportRequestErrorType", "ReportErrorType" and "ConfigRequestErrorType") -->
                <element name="RootElement" type="NMTOKEN"/>
            </sequence>
        </complexType>
        <simpleType name="HighLevelErrorCodeType">
            <restriction base="NMTOKEN">
                <enumeration value="NotWellFormedXMLMessage"/>
                <enumeration value="InvalidXMLMessage"/>
                <enumeration value="VersionMismatch"/>
            </restriction>
        </simpleType>
        <!-- ========================================= -->
        <complexType name="ConfigPackageErrorType">
            <sequence>
                <element name="ConfigPackageErrorInfo"
type="am2:ConfigPackageErrorInfoType" maxOccurs="unbounded"/>
            </sequence>
            <attributeGroup ref="am2:packageReference"/>
```

```
        </complexType>
        <complexType name="ConfigPackageErrorInfoType">
            <sequence>
                <element name="ErrorCode"
type="am2:ConfigPackageErrorInfoCodeType"/>
                <element name="ErrorElement" type="am2:XPath" minOccurs="0"
maxOccurs="unbounded"/>
                <element name="ErrorEvent" type="am2:CommonEventNameType"
minOccurs="0" maxOccurs="unbounded"/>
            </sequence>
            <!-- The element "ConfigPackageErrorInfoType" is slightly modified in
order to maintain consistency. (see "HighLevelErrorType" and
"ReportRequestErrorInfoType") -->
        </complexType>
        <simpleType name="ConfigPackageErrorInfoCodeType">
            <restriction base="NMTOKEN">
                <enumeration value="ElementNotSupported"/>
                <enumeration value="ElementInfoNotAvailable"/>
                <enumeration value="ElementNotPermitted"/>
                <enumeration value="EventNotSupported"/>
            </restriction>
        </simpleType>
        <!-- ============================================== -->
        <complexType name="ReportRequestErrorType">
            <sequence>
                <element name="ReportRequestErrorInfo"
type="am2:ReportRequestErrorInfoType" maxOccurs="unbounded"/>
            </sequence>
        </complexType>
        <complexType name="ReportRequestErrorInfoType">
            <sequence>
                <element name="ErrorCode"
type="am2:ReportRequestErrorInfoCodeType"/>
                <element name="ErrorElement" type="am2:XPath" minOccurs="0"
maxOccurs="unbounded"/>
            </sequence>
            <attribute name="measurementRequestIdref"
type="am2:MeasurementRequestIDSType" use="optional"/>
        </complexType>
        <simpleType name="ReportRequestErrorInfoCodeType">
            <restriction base="NMTOKEN">
                <enumeration
value="RequestedMeasurementRequestIdWhichWasNotPreviouslyConfigured"/>
            </restriction>
        </simpleType>
        <!-- ============================================== -->
        <complexType name="ReportErrorType">
            <sequence>
                <element name="ReportErrorInfo" type="am2:ReportErrorInfoType"
maxOccurs="unbounded"/>
            </sequence>
        </complexType>
        <complexType name="ReportErrorInfoType">
            <sequence>
                <element name="ErrorCode" type="am2:ReportErrorInfoCodeType"/>
                <element name="ErrorElement" type="am2:XPath" minOccurs="0"
maxOccurs="unbounded"/>
            </sequence>
            <attribute name="measurementRequestIdref"
type="am2:MeasurementRequestIDSType" use="optional"/>
        </complexType>
        <simpleType name="ReportErrorInfoCodeType">
            <restriction base="NMTOKEN">
                <enumeration value="ElementOrAttributeValueUnknown"/>
```

```
                <enumeration value="KnownButUnexpectedElementOrAttributeValue"/>
        </restriction>
    </simpleType>
    <!-- ============================================= -->
    <complexType name="ConfigRequestErrorType">
        <sequence>
            <element name="ConfigRequestErrorInfo"
type="am2:ConfigRequestErrorInfoType" maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <complexType name="ConfigRequestErrorInfoType">
        <sequence>
            <element name="ErrorCode"
type="am2:ConfigRequestErrorInfoCodeType"/>
            <element name="ErrorElement" type="am2:XPath" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <simpleType name="ConfigRequestErrorInfoCodeType">
        <restriction base="NMTOKEN">
            <enumeration value="ElementOrAttributeValueUnknown"/>
        </restriction>
    </simpleType>
</schema>
```

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