TECHNICAL REPORT

ISO/IEC TR 15938-11

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2005-07-01

Information technology — Multimedia content description interface —

Part 11: MPEG-7 profile schemas

Technologies de l'information — Interface de description du contenu multimédia —

Partie 11: Schémas du profil MPEG-7

Reference number
ISO/IEC TR 15938-11:2005(E)



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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In exceptional circumstances, the joint technical committee may propose the publication of a Technical Report of one of the following types:

— type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;

— type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;

— type 3, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard (“state of the art”, for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

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ISO/IEC TR 15938-11, which is a Technical Report of type [3], was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

ISO/IEC TR 15938 consists of the following parts, under the general title *Information technology — Multimedia content description interface*:

— *Part 1: Systems*

— *Part 2: Description definition language*

— *Part 3: Visual*

— *Part 4: Audio*

— *Part 5: Multimedia description schemes*

— *Part 6: Reference software*

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— *Part 7: Conformance testing*

— *Part 8: Extraction and use of MPEG-7 descriptions* [Technical Report]

— *Part 9: Profiles and levels*

— *Part 10: Schema definition*

— *Part 11: MPEG-7 profile schemas* [Technical Report]

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Introduction

This Technical Report, also known as “Multimedia Content Description Interface”, provides a standardized set of technologies for describing multimedia content. It addresses a broad spectrum of multimedia applications and requirements by providing a metadata system for describing the features of multimedia content.

The following are specified in this International Standard:

Description schemes (DS) describe entities or relationships pertaining to multimedia content. Description schemes specify the structure and semantics of their components, which may be Description Schemes, descriptors, or datatypes.

Descriptors (D) describe features, attributes, or groups of attributes of multimedia content.

Datatypes are the basic reusable datatypes employed by description schemes and descriptors

Systems tools support delivery of descriptions, multiplexing of descriptions with multimedia content, synchronization, file format, and so forth.

This International Standard is subdivided into 10 parts:

Part 1 – Systems: specifies the tools for preparing descriptions for efficient transport and storage, compressing descriptions, and allowing synchronization between content and descriptions.

Part 2 – Description definition language: specifies the language for defining the International Standard set of description tools (DSs, Ds, and datatypes) and for defining new description tools.

Part 3 – Visual: specifies the description tools pertaining to visual content.

Part 4 – Audio: specifies the description tools pertaining to audio content.

Part 5 – Multimedia description schemes: specifies the generic description tools pertaining to multimedia including audio and visual content.

Part 6 – Reference software: provides a software implementation of the International Standard.

Part 7 – Conformance testing: specifies the guidelines and procedures for testing conformance of implementations of the International Standard.

Part 8 – Extraction and use of MPEG-7 descriptions: provides guidelines and examples of the extraction and use of descriptions.

Part 9 – Profiles and levels: provides guidelines and standard profiles.

Part 10 – Schema definition: specifies the schema using description definition language.

Part 11 – Profile Schemas: listing of profile schemas using description definition language.

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Information technology — Multimedia content description interface —

Part 11: MPEG-7 profile schemas

1 Scope

This Technical Report specifies the actual schema in XSD form for each of the ISO/IEC 15938-9 standard description profiles, namely the Simple Metadata Profile (SMP), User Description Profile (UDP), and the Core Description Profile (CDP).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 15938-9, *Information technology — Multimedia content description interface — Part 9: Profiles and levels*

3 Description Profile Schema

3.1 General

This clause contains actual schema in XSD form for each of the ISO/IEC 15938-9 standard profiles.

3.2 SMP Profile Schema

```
<?xml version="1.0" encoding="iso-8859-1"?>
<!-- ********************************************************************************

   This XML document was originally developed in the course of development of the
   ISO/IEC 15938 standard (MPEG-7). This XML document contains either a part of
   the MPEG-7 schema implementation for one or more MPEG-7 tools as specified by
   the MPEG-7 Requirements or MPEG-7 description examples conformant to the
   MPEG-7 schema.

   ISO/IEC gives users of MPEG-7 free license to this XML document or modifications
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   products.
```

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```
   Copyright (c) 1999-2003 ISO/IEC.

   This XML document is provided for informative purposes only. If any parts of this
   XML document contradict the normative part of the corresponding standard document
   then the normative part should be used as the definitive specification.

   This notice must be included in all copies or derivative works.
******************************************************************************** -->
<!-- ############################################################################ -->
<!-- ISO/IEC 15938 Information Technology-Multimedia Content Description Interface -->
<!-- Part 9: MPEG-7 Profiles and Levels (ISO/IEC 15938-9)                         -->
<!-- Simple Meatadata Profile                                                     -->
<!--                                                                              -->
<!-- Last updated:  22 July 2004                                                  -->
<!-- ############################################################################ -->

<!-- SMP-Light, version:1, date:July 23, 2003 -->
<schema targetNamespace="urn:mpeg:mpeg7:schema:2001"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:mpeg7="urn:mpeg:mpeg7:schema:2001"
  xmlns:xml="http://www.w3.org/XML/1998/namespace"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <annotation>

    <documentation>
      This document contains MDS tools defined in ISO/IEC 15938-5
    </documentation>
  </annotation>
  <!-- ########################################################## -->
  <!--  import xml components                                     -->
  <!-- ########################################################## -->
  <import namespace="http://www.w3.org/XML/1998/namespace"
          schemaLocation="xml-1998.xsd"/>
  <!-- ########################################################## -->
  <!-- include MPEG-7 specific extensions for DDL(ISO/IEC 15938-2) -->
  <!-- ########################################################## -->

  <element name="Mpeg7">
    <complexType>
      <complexContent>
        <extension base="mpeg7:Mpeg7Type">
          <choice>
            <element name="Description" type="mpeg7:CompleteDescriptionType"
minOccurs="1" maxOccurs="unbounded"/>
          </choice>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <!-- Definition of Mpeg7Type datatype -->
    <complexType name="Mpeg7Type" abstract="true">
      <sequence>
    <!-- DescriptionProfile element added per ISO/IEC 15938 Part 5 Cor1 - July 2004 -->
        <element name="DescriptionProfile" type="mpeg7:DescriptionProfileType"
minOccurs="0"/>
     </sequence>
      <attribute ref="xml:lang" use="optional"/>
  </complexType>

  <!-- DescriptionProfileType datatype added per ISO/IEC 15938 Part 5 Cor1 - July 2004 -->
  <!-- Definition of DescriptionProfileType datatype -->
  <complexType name="DescriptionProfileType">
    <attribute name="profileAndLevelIndication" use="required">
      <simpleType>
        <list itemType="anyURI"/>
          </simpleType>
    </attribute>
  </complexType>

  <complexType name="Mpeg7BaseType" abstract="true">
```


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```
    <complexContent>
      <restriction base="anyType"/>
    </complexContent>
  </complexType>

  <simpleType name="timePointType">
    <restriction base="mpeg7:basicTimePointType">
      <pattern value="(\-?\d+(\-\d{2}(\-
\d{2})?)?)?(T\d{2}(:\d{2}(:\d{2}(:\d+)?)?)?)?(F\d+)?((\-|\+)\d{2}:\d{2})?"/>
    </restriction>
  </simpleType>

  <simpleType name="basicTimePointType">
    <restriction base="string">
      <pattern value="\-?(\d+(\-\d{2}(\-
\d{2})?)?)?(T\d{2}(:\d{2}(:\d{2}(:\d+(\.\d{2})?)?)?)?)?(F\d+)?((\-|\+)\d{2}:\d{2})?"/>
    </restriction>
  </simpleType>

  <complexType name="TextAnnotationType">
    <choice minOccurs="1" maxOccurs="unbounded">
      <element name="FreeTextAnnotation" type="mpeg7:TextualType"/>
      <element name="StructuredAnnotation" type="mpeg7:StructuredAnnotationType"/>
    </choice>
    <attribute ref="xml:lang"/>
  </complexType>

  <complexType name="TextualType">
    <simpleContent>
      <extension base="mpeg7:TextualBaseType"/>
    </simpleContent>
  </complexType>

  <complexType name="TextualBaseType" abstract="true">
    <simpleContent>
      <extension base="string">
        <attribute ref="xml:lang" use="optional"/>
      </extension>
    </simpleContent>
  </complexType>

  <complexType name="StructuredAnnotationType">
    <sequence>
      <element name="Who" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
      <element name="WhatObject" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
      <element name="WhatAction" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
      <element name="Where" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
      <element name="When" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
      <element name="Why" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
      <element name="How" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
    </sequence>
    <attribute ref="xml:lang" use="optional"/>
  </complexType>

  <complexType name="TermUseType">
    <complexContent>
      <extension base="mpeg7:InlineTermDefinitionType">
        <attribute name="href" type="mpeg7:termReferenceType" use="optional"/>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="InlineTermDefinitionType" abstract="true">
    <sequence>
```

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```
      <element name="Name" minOccurs="0" maxOccurs="unbounded">
        <complexType>
          <simpleContent>
            <extension base="mpeg7:TextualType">
              <attribute name="preferred" type="boolean" use="optional"/>
            </extension>
          </simpleContent>
        </complexType>
      </element>
      <element name="Definition" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
    </sequence>
  </complexType>

  <simpleType name="termRelationQualifierType">
    <union>
      <simpleType>
        <restriction base="NMTOKEN">
          <enumeration value="NT"/>
          <enumeration value="BT"/>
          <enumeration value="RT"/>
          <enumeration value="US"/>
          <enumeration value="UF"/>
        </restriction>
      </simpleType>
      <simpleType>
        <restriction base="mpeg7:termReferenceType"/>
      </simpleType>
    </union>
  </simpleType>

  <simpleType name="termReferenceType">
    <union>
      <simpleType>
        <restriction base="NMTOKEN">
          <whiteSpace value="collapse"/>
          <pattern value=":[^:]+:[^:]+"/>
        </restriction>
      </simpleType>
      <simpleType>
        <restriction base="anyURI"/>
      </simpleType>
    </union>
  </simpleType>

  <complexType name="CreatorType">
    <complexContent>
      <extension base="mpeg7:MediaAgentType">
      </extension>
    </complexContent>
  </complexType>

  <complexType name="MediaAgentType">
    <sequence>
      <element name="Role" type="mpeg7:ControlledTermUseType"/>
      <choice>
        <element name="Agent" type="mpeg7:AgentType"/>
      </choice>
    </sequence>
  </complexType>

  <complexType name="ControlledTermUseType">
    <complexContent>
      <extension base="mpeg7:InlineTermDefinitionType">
        <attribute name="href" type="mpeg7:termReferenceType" use="required"/>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="AgentType" abstract="true">
    <complexContent>
```


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```
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Icon" type="mpeg7:MediaLocatorType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="PersonType">
    <complexContent>
      <extension base="mpeg7:AgentType">
        <sequence>
          <choice minOccurs="1" maxOccurs="unbounded">
            <element name="Name" type="mpeg7:PersonNameType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="DSType" abstract="true">
    <complexContent>
      <extension base="mpeg7:Mpeg7BaseType">
        <attribute name="id" type="ID" use="optional"/>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="MediaLocatorType">
    <sequence>
      <choice minOccurs="0">
        <element name="MediaUri" type="anyURI"/>
      </choice>
      <element name="StreamID" type="nonNegativeInteger" minOccurs="0"/>
    </sequence>
  </complexType>

  <complexType name="PersonNameType">
    <sequence>
      <choice minOccurs="1" maxOccurs="unbounded">
        <element name="GivenName" type="mpeg7:NameComponentType"/>
        <element name="FamilyName" type="mpeg7:NameComponentType" minOccurs="0"/>
      </choice>
    </sequence>
    <attribute ref="xml:lang" use="optional"/>
  </complexType>

  <complexType name="NameComponentType">
    <simpleContent>
      <extension base="mpeg7:TextualBaseType">
        <attribute name="initial" type="string" use="optional"/>
        <attribute name="abbrev" type="string" use="optional"/>
      </extension>
    </simpleContent>
  </complexType>

  <complexType name="CreationToolType">
    <sequence>
      <element name="Tool" type="mpeg7:TermUseType"/>
      <element name="Setting" minOccurs="0" maxOccurs="unbounded">
        <complexType>
          <attribute name="name" type="string" use="required"/>
          <attribute name="value" type="string" use="required"/>
        </complexType>
      </element>
    </sequence>
  </complexType>

  <complexType name="PlaceType">
    <complexContent>
```

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```
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="GeographicPosition" minOccurs="0">
            <complexType>
              <sequence>
                <element name="Point" type="mpeg7:GeographicPointType"/>
              </sequence>
              <attribute name="datum" type="string" use="optional"/>
            </complexType>
          </element>
        </sequence>
        <attribute ref="xml:lang" use="optional"/>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="GeographicPointType">
    <attribute name="longitude" use="required">
      <simpleType>
        <restriction base="double">
          <minInclusive value="-180.0"/>
          <maxInclusive value="180.0"/>
        </restriction>
      </simpleType>
    </attribute>
    <attribute name="latitude" use="required">
      <simpleType>
        <restriction base="double">
          <minInclusive value="-90.0"/>
          <maxInclusive value="90.0"/>
        </restriction>
      </simpleType>
    </attribute>
    <attribute name="altitude" type="double" use="optional"/>
  </complexType>

  <complexType name="CompleteDescriptionType" abstract="true">
    <sequence>
<!--
      <element name="DescriptionMetadata" type="mpeg7:DescriptionMetadataType"
minOccurs="0"/>
      <element name="Relationships" type="mpeg7:GraphType" minOccurs="0"
maxOccurs="unbounded"/>
      <element name="OrderingKey" type="mpeg7:OrderingKeyType" minOccurs="0"
maxOccurs="unbounded"/>
-->
    </sequence>
  </complexType>

  <complexType name="ContentManagementType" abstract="true">
    <complexContent>
      <extension base="mpeg7:CompleteDescriptionType"/>
    </complexContent>
  </complexType>

  <complexType name="RatingType">
    <sequence>
      <element name="RatingValue" type="float"/>
      <element name="RatingScheme">
        <complexType>
          <complexContent>
            <extension base="mpeg7:TermUseType">
              <attribute name="best" type="float" use="optional"/>
              <attribute name="worst" type="float" use="optional"/>
              <attribute name="style" use="required">
                <simpleType>
                  <restriction base="NMTOKEN">
                    <enumeration value="higherBetter"/>
                    <enumeration value="lowerBetter"/>
                  </restriction>
                </simpleType>
```


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```
              </attribute>
            </extension>
          </complexContent>
        </complexType>
      </element>
    </sequence>
  </complexType>

  <complexType name="MediaInstanceType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <choice>
            <element name="MediaLocator" type="mpeg7:MediaLocatorType"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
  <complexType name="CreationDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <sequence>
          <element name="CreationInformation" type="mpeg7:CreationInformationType"
minOccurs="1" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="CreationInformationType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Creation" type="mpeg7:CreationType"/>
          <element name="Classification" type="mpeg7:ClassificationType"
minOccurs="0"/>
          <element name="RelatedMaterial" type="mpeg7:RelatedMaterialType"
minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="CreationType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Title" type="mpeg7:TitleType" minOccurs="1"
maxOccurs="unbounded"/>
          <element name="TitleMedia" type="mpeg7:TitleMediaType" minOccurs="0"/>
          <element name="Abstract" type="mpeg7:TextAnnotationType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="Creator" type="mpeg7:CreatorType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="CreationCoordinates" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <sequence>
                <element name="Location" type="mpeg7:PlaceType" minOccurs="0"/>
                <element name="Date" type="mpeg7:TimeType" minOccurs="0"/>
              </sequence>
            </complexType>
          </element>
          <element name="CreationTool" type="mpeg7:CreationToolType" minOccurs="0"
maxOccurs="unbounded"/>
          <element name="CopyrightString" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
```

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```
<complexType name="TitleType">
  <simpleContent>
    <extension base="mpeg7:TextualBaseType">
      <attribute name="type" use="optional" default="main">
        <simpleType>
          <union>
            <simpleType>
              <restriction base="NMTOKEN">
                <enumeration value="main"/>
                <enumeration value="secondary"/>
                <enumeration value="alternative"/>
                <enumeration value="original"/>
                <enumeration value="popular"/>
                <enumeration value="opusNumber"/>
                <enumeration value="songTitle"/>
                <enumeration value="albumTitle"/>
                <enumeration value="seriesTitle"/>
                <enumeration value="episodeTitle"/>
              </restriction>
            </simpleType>
            <simpleType>
              <restriction base="mpeg7:termReferenceType"/>
            </simpleType>
          </union>
        </simpleType>
      </attribute>
    </extension>
  </simpleContent>
</complexType>

<complexType name="TitleMediaType">
  <sequence>
    <element name="TitleImage" type="mpeg7:ImageLocatorType" minOccurs="0"/>
  </sequence>
</complexType>

<complexType name="ImageLocatorType">
  <complexContent>
    <extension base="mpeg7:MediaLocatorType">
    </extension>
  </complexContent>
</complexType>

<complexType name="TimeType">
  <sequence>
    <choice>
      <element name="TimePoint" type="mpeg7:timePointType"/>
    </choice>
  </sequence>
</complexType>

<complexType name="ClassificationType">
  <complexContent>
    <extension base="mpeg7:DSType">
      <sequence>
        <element name="Genre" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <complexContent>
              <extension base="mpeg7:ControlledTermUseType">
                <attribute name="type" use="optional" default="main">
                  <simpleType>
                    <restriction base="NMTOKEN">
                      <enumeration value="main"/>
                      <enumeration value="secondary"/>
                    </restriction>
                  </simpleType>
                </attribute>
              </extension>
            </complexContent>
          </complexType>
        </element>
```

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```
          <element name="ParentalGuidance" type="mpeg7:ParentalGuidanceType"
minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="ParentalGuidanceType">
    <sequence>
      <choice>
        <element name="ParentalRating" type="mpeg7:ControlledTermUseType"/>
      </choice>
    </sequence>
  </complexType>

  <complexType name="RelatedMaterialType">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="DisseminationFormat" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
          <element name="MaterialType" type="mpeg7:TermUseType" minOccurs="0"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="ClassificationSchemeDescriptionType">
    <complexContent>
      <extension base="mpeg7:ContentManagementType">
        <choice>
          <element name="ClassificationScheme" type="mpeg7:ClassificationSchemeType"
minOccurs="1" maxOccurs="unbounded"/>
          <element name="ClassificationSchemeBase"
type="mpeg7:ClassificationSchemeBaseType" minOccurs="1" maxOccurs="unbounded"/>
        </choice>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="ClassificationSchemeType">
    <complexContent>
      <extension base="mpeg7:ClassificationSchemeBaseType">
        <sequence>
          <element name="Term" type="mpeg7:TermDefinitionType" minOccurs="1"
maxOccurs="unbounded"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="ClassificationSchemeBaseType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <attribute name="uri" type="anyURI" use="required"/>
        <attribute name="domain" use="optional">
        </attribute>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="TermDefinitionType">
    <complexContent>
      <extension base="mpeg7:TermDefinitionBaseType">
        <sequence>
          <element name="Term" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <complexContent>
                <extension base="mpeg7:TermDefinitionType">
                  <attribute name="relation" type="mpeg7:termRelationQualifierType"
use="optional" default="NT"/>
```

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```
                </extension>
              </complexContent>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>

  <complexType name="TermDefinitionBaseType" abstract="true">
    <complexContent>
      <extension base="mpeg7:DSType">
        <sequence>
          <element name="Name" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <simpleContent>
                <extension base="mpeg7:TextualType">
                  <attribute name="preferred" type="boolean" use="optional"/>
                </extension>
              </simpleContent>
            </complexType>
          </element>
        </sequence>
        <attribute name="termID" type="NMTOKEN"/>
      </extension>
    </complexContent>
  </complexType>

</schema>
```

3.3 UDP Profile Schema

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

   This XML document was originally developed in the course of development of the
   ISO/IEC 15938 standard (MPEG-7). This XML document contains either a part of
   the MPEG-7 schema implementation for one or more MPEG-7 tools as specified by
   the MPEG-7 Requirements or MPEG-7 description examples conformant to the
   MPEG-7 schema.

   ISO/IEC gives users of MPEG-7 free license to this XML document or modifications
   Thereof for use in hardware or software products claiming conformance to MPEG-7.

   Those intending to use this XML document in hardware or software products are
   advised that its use may infringe existing patents. The original developers of
   this XML document and his/her company, the subsequent editors and their companies,
   and ISO/IEC have no liability for use of this XML document or modifications
   thereof in an implementation.

   Copyright is not released for non MPEG-7 conforming products. The organizations
   Who contributed to this XML document retain the full right to use the code for
   their own purpose, assign or donate their contribution to a third party and
   inhibit third parties from using their contribution for non MPEG-7 conforming
   products.

   Copyright (c) 1999-2003 ISO/IEC.

   This XML document is provided for informative purposes only. If any parts of this
   XML document contradict the normative part of the corresponding standard document
   then the normative part should be used as the definitive specification.
```


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```
   This notice must be included in all copies or derivative works.
******************************************************************************** -->
<!-- ################################################################################ -->
<!-- ISO/IEC 15938 Information Technology -Multimedia Content Description Interface -->
<!-- Part 9: MPEG-7 Profiles and Levels (ISO/IEC 15938-9)                           -->
<!-- User Description Profile                                                       -->
<!--                                                                                -->
<!-- Last updated:  2 July 2004                                                     -->
<!-- Peter van Beek, Sharp Laboratories of America, pvanbeek@sharplabs.com          -->
<!-- ################################################################################ -->

<schema targetNamespace="urn:mpeg:mpeg7:schema:2001"
xmlns="http://www.w3.org/2001/XMLSchema" xmlns:mpeg7="urn:mpeg:mpeg7:schema:2001"
xmlns:xml="http://www.w3.org/XML/1998/namespace" elementFormDefault="qualified"
attributeFormDefault="unqualified">

    <annotation>
        <documentation>
            This document contains MPEG-7 tools defined in ISO/IEC 15938 that are in the
User Description profile
         </documentation>
    </annotation>

    <!-- ############################################################ -->
    <!--  Import xml tools not defined by MPEG-7                      -->
    <!-- ############################################################ -->

    <import namespace="http://www.w3.org/XML/1998/namespace" schemaLocation="./xml-
1998.xsd"/>

    <!-- ############################################################ -->
    <!--  Tools from ISO/IEC 15938-2 (DDL)                            -->
    <!-- ############################################################ -->

    <annotation>
        <documentation>
            This section contains tools defined in ISO/IEC 15938-2 (DDL)
        </documentation>
    </annotation>

    <!-- definition of listOfPositiveIntegerForDim datatype (DIA only) -->
    <simpleType name="listOfPositiveIntegerForDim">
        <list itemType="positiveInteger"/>
    </simpleType>

    <!-- definition of mpeg7:dim attribute (DIA only) -->
    <attribute name="dim">
        <simpleType>
            <restriction base="mpeg7:listOfPositiveIntegerForDim">
                <minLength value="1"/>
            </restriction>
        </simpleType>
    </attribute>

    <!-- definition of basicTimePoint dataype -->
    <simpleType name="basicTimePointType">
        <restriction base="string">
            <pattern value="\-?(\d+(\-\d{2}(\-
\d{2})?)?)?(T\d{2}(:\d{2}(:\d{2}(:\d+(\.\d{2})?)?)?)?)?(F\d+)?((\-|\+)\d{2}:\d{2})?"/>
        </restriction>
    </simpleType>

    <!-- definition of basicDuration dataype -->
    <simpleType name="basicDurationType">
        <restriction base="string">
            <pattern value="\-
?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?(\d{2}f)?)?(\d+F)?((\-|\+)\d{2}:\d{2}Z)?"/>
        </restriction>
    </simpleType>
```

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```
    <!-- ############################################################ -->
    <!--  Tools from ISO/IEC 15938-5 (MDS)                            -->
    <!-- ############################################################ -->

    <annotation>
        <documentation>
            This section contains tools defined in ISO/IEC 15938-5 (MDS)
        </documentation>
    </annotation>

    <!-- ############################################################ -->
    <!--  Tools from ISO/IEC 15938-5 (MDS) Clause 4                   -->
    <!-- ############################################################ -->

    <!-- Definition of MPEG-7 base type -->
    <complexType name="Mpeg7BaseType" abstract="true">
        <complexContent>
            <restriction base="anyType"/>
        </complexContent>
    </complexType>

    <!-- Definition of generic D -->
    <complexType name="DType" abstract="true">
        <complexContent>
            <extension base="mpeg7:Mpeg7BaseType"/>
        </complexContent>
    </complexType>

    <!-- Definition of generic DS -->
    <complexType name="DSType" abstract="true">
        <complexContent>
            <extension base="mpeg7:Mpeg7BaseType">
                <sequence>
                    <element name="Header" type="mpeg7:HeaderType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
                <attribute name="id" type="ID" use="optional"/>
                <attributeGroup ref="mpeg7:timePropertyGrp"/>
                <attributeGroup ref="mpeg7:mediaTimePropertyGrp"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of Header datatype -->
    <complexType name="HeaderType" abstract="true">
        <complexContent>
            <extension base="mpeg7:Mpeg7BaseType">
                <attribute name="id" type="ID" use="optional"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of Mpeg7Type datatype -->
    <complexType name="Mpeg7Type" abstract="true">
        <sequence>
            <!-- DescriptionProfile element added per ISO/IEC 15938 Part 5 Cor1 - July
2004 -->
            <element name="DescriptionProfile" type="mpeg7:DescriptionProfileType"
minOccurs="0"/>
            <!-- DescriptionMetadata element excluded
            <element name="DescriptionMetadata" type="mpeg7:DescriptionMetadataType"
minOccurs="0"/>
            -->
        </sequence>
        <attribute ref="xml:lang" use="optional"/>
        <attributeGroup ref="mpeg7:timePropertyGrp"/>
        <attributeGroup ref="mpeg7:mediaTimePropertyGrp"/>
    </complexType>
```


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```
    <!-- DescriptionProfileType datatype added per ISO/IEC 15938 Part 5 Cor1 - July
2004 -->
    <!-- Definition of DescriptionProfileType datatype -->
    <complexType name="DescriptionProfileType">
        <attribute name="profileAndLevelIndication" use="required">
            <simpleType>
                <list itemType="anyURI"/>
            </simpleType>
        </attribute>
    </complexType>

    <!-- Definition of Mpeg7 Element -->
    <element name="Mpeg7">
        <complexType>
            <complexContent>
                <extension base="mpeg7:Mpeg7Type">
                    <choice>
                        <element name="DescriptionUnit" type="mpeg7:Mpeg7BaseType"/>
                        <element name="Description" type="mpeg7:CompleteDescriptionType"
minOccurs="1" maxOccurs="unbounded"/>
                    </choice>
                </extension>
            </complexContent>
        </complexType>
    </element>

    <!-- Definition of CompleteDescription Top-level Type -->
    <complexType name="CompleteDescriptionType" abstract="true">
        <sequence>
            <!-- DescriptionMetadata element excluded
            <element name="DescriptionMetadata" type="mpeg7:DescriptionMetadataType"
minOccurs="0"/>
            -->
            <!-- Relationships element excluded
            <element name="Relationships" type="mpeg7:GraphType" minOccurs="0"
maxOccurs="unbounded"/>
            -->
            <!-- OrderingKey element excluded
            <element name="OrderingKey" type="mpeg7:OrderingKeyType" minOccurs="0"
maxOccurs="unbounded"/>
            -->
        </sequence>
    </complexType>

    <!-- Definition of ContentManagement Top-level Type -->
    <complexType name="ContentManagementType" abstract="true">
        <complexContent>
            <extension base="mpeg7:CompleteDescriptionType"/>
        </complexContent>
    </complexType>

    <!-- Definition of UserDescription Top-level Type -->
    <complexType name="UserDescriptionType">
        <complexContent>
            <extension base="mpeg7:ContentManagementType">
                <sequence>
                    <element name="User" type="mpeg7:AgentType" minOccurs="0"/>
                    <element name="UserPreferences" type="mpeg7:UserPreferencesType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="UsageHistory" type="mpeg7:UsageHistoryType"
minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of ClassificationSchemeDescription Top-level Type -->
    <complexType name="ClassificationSchemeDescriptionType">
        <complexContent>
            <extension base="mpeg7:ContentManagementType">
                <choice>
```

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```
                    <element name="ClassificationScheme"
type="mpeg7:ClassificationSchemeType" minOccurs="1" maxOccurs="unbounded"/>
                    <!-- ClassificationSchemeBase element excluded
                    <element name="ClassificationSchemeBase"
type="mpeg7:ClassificationSchemeBaseType" minOccurs="1" maxOccurs="unbounded"/>
                    -->
                </choice>
            </extension>
        </complexContent>
    </complexType>

    <!-- ################################################################ -->
    <!--  Tools from ISO/IEC 15938-5 (MDS) Clause 5                       -->
    <!-- ################################################################ -->

    <!-- Definition of unsigned8 datatype (DIA only) -->
    <simpleType name="unsigned8">
        <restriction base="nonNegativeInteger">
            <minInclusive value="0"/>
            <maxInclusive value="255"/>
        </restriction>
    </simpleType>

    <!-- Definition of unsigned12 datatype (DIA only) -->
    <simpleType name="unsigned12">
        <restriction base="nonNegativeInteger">
            <minInclusive value="0"/>
            <maxInclusive value="4095"/>
        </restriction>
    </simpleType>

    <!-- Definition of zeroToOne datatype (DIA only) -->
    <simpleType name="zeroToOneType">
        <restriction base="float">
            <minInclusive value="0.0"/>
            <maxInclusive value="1.0"/>
        </restriction>
    </simpleType>

    <!-- Definition of nonNegativeReal datatype -->
    <simpleType name="nonNegativeReal">
        <restriction base="double">
            <minInclusive value="0.0"/>
        </restriction>
    </simpleType>

    <!-- Definition of integerVector datatype (DIA only) -->
    <simpleType name="integerVector">
        <list itemType="integer"/>
    </simpleType>

    <!-- Definition of floatVector datatype (DIA only) -->
    <simpleType name="floatVector">
        <list itemType="float"/>
    </simpleType>

    <!-- Definition of probabilityVector datatype (DIA only) -->
    <simpleType name="probabilityVector">
        <list>
            <simpleType>
                <restriction base="float">
                    <minInclusive value="0.0"/>
                    <maxInclusive value="1.0"/>
                </restriction>
            </simpleType>
        </list>
    </simpleType>

    <!-- Definition of characterSetCode datatype (DIA only) -->
    <simpleType name="characterSetCode">
        <restriction base="string"/>
    </simpleType>
```


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```
    <!-- Definition of mimeType datatype -->
    <simpleType name="mimeType">
        <restriction base="string">
            <whiteSpace value="collapse"/>
            <pattern value='[&#x21;-&#x7f;-[\(\)&lt;&gt;@,;:\\"/\[\]\?=]]+/[&#x21;-
&#x7f;-[\(\)&lt;&gt;@,;:\\"/\[\]\?=]]+'/>
        </restriction>
    </simpleType>

    <!-- Definition of countryCode datatype -->
    <simpleType name="countryCode">
        <restriction base="string">
            <whiteSpace value="collapse"/>
            <pattern value="[a-zA-Z]{2}"/>
        </restriction>
    </simpleType>

    <!-- Definition of regionCode datatype -->
    <simpleType name="regionCode">
        <restriction base="string">
            <whiteSpace value="collapse"/>
            <pattern value="[a-zA-Z]{2}(-[a-zA-Z0-9]{1,3})?"/>
        </restriction>
    </simpleType>

    <!-- ############################################################ -->
    <!--  Tools from ISO/IEC 15938-5 (MDS) Clause 6                   -->
    <!-- ############################################################ -->

    <!-- Definition of referenceGrp attribute group -->
    <attributeGroup name="referenceGrp">
        <attribute name="idref" type="IDREF" use="optional"/>
        <attribute name="xpath" type="mpeg7:xPathRefType" use="optional"/>
        <attribute name="href" type="anyURI" use="optional"/>
    </attributeGroup>

    <!-- Definition of Reference datatype -->
    <complexType name="ReferenceType">
        <attributeGroup ref="mpeg7:referenceGrp"/>
    </complexType>

    <!-- Definition of xPath datatype -->
    <simpleType name="xPathType">
        <restriction base="token"/>
    </simpleType>

    <!-- Definition of xPathRef datatype -->
    <simpleType name="xPathRefType">
        <restriction base="mpeg7:xPathType">
            <pattern
value="/?((((child::)?((\i\c*:)?(\i\c*)(\[\d+\])?))|\.|(\.\.))/)*((((child::)?((\i\c*:)
?(\i\c*)(\[\d+\])?))|\.)|((attribute::|@)((\i\c*:)?(\i\c*|\*))))"/>
        </restriction>
    </simpleType>

    <!-- Definition of xPathSelector datatype -->
    <simpleType name="xPathSelectorType">
        <restriction base="mpeg7:xPathType">
            <pattern
value="(/|(((//|/)?(((child::)?((\i\c*:)?(\i\c*|\*)))|\.|\.\.)(((//|/)(((child::)?((\i\c*
:)?(\i\c*|\*)))|\.|\.\.))*))(\|/|(((//|/)?(((child::)?((\i\c*:)?(\i\c*|\*)))|\.|\.\.)(((/
/|/)(((child::)?((\i\c*:)?(\i\c*|\*)))|\.|\.\.))*))*"/>
        </restriction>
    </simpleType>

    <!-- Definition of xPathAbsoluteSelector datatype -->
    <simpleType name="xPathAbsoluteSelectorType">
        <restriction base="mpeg7:xPathSelectorType">
            <pattern
value="(/|(((//|/)(((child::)?((\i\c*:)?(\i\c*|\*)))|\.))*)(\|(/|(((//|/)(((child::)?((\i
\c*:)?(\i\c*|\*)))|\.))*))*"/>
```

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```
        </restriction>
    </simpleType>

    <!-- Definition of UniqueID datatype -->
    <complexType name="UniqueIDType">
        <simpleContent>
            <extension base="string">
                <attribute name="type" type="NMTOKEN" use="optional" default="URI"/>
                <attribute name="organization" type="NMTOKEN" use="optional"/>
                <attribute name="authority" type="NMTOKEN" use="optional"/>
                <attribute name="encoding" use="optional" default="text">
                    <simpleType>
                        <restriction base="string">
                            <enumeration value="text"/>
                            <enumeration value="base16"/>
                            <enumeration value="base64"/>
                        </restriction>
                    </simpleType>
                </attribute>
            </extension>
        </simpleContent>
    </complexType>

    <!-- Definition of Time datatype -->
    <complexType name="TimeType">
        <sequence>
            <choice>
                <element name="TimePoint" type="mpeg7:timePointType"/>
                <element name="RelTimePoint" type="mpeg7:RelTimePointType"/>
                <element name="RelIncrTimePoint" type="mpeg7:RelIncrTimePointType"/>
            </choice>
            <choice minOccurs="0">
                <element name="Duration" type="mpeg7:durationType"/>
                <element name="IncrDuration" type="mpeg7:IncrDurationType"/>
            </choice>
        </sequence>
    </complexType>

    <!-- Definition of timePoint datatype -->
    <simpleType name="timePointType">
        <restriction base="mpeg7:basicTimePointType">
            <pattern value="(\-?\d+(\-\d{2}(\-
\d{2})?)?)?(T\d{2}(:\d{2}(:\d{2}(:\d+)?)?)?)?(F\d+)?((\-|\+)\d{2}:\d{2})?"/>
        </restriction>
    </simpleType>

    <!-- Definition of duration datatype -->
    <simpleType name="durationType">
        <restriction base="mpeg7:basicDurationType">
            <pattern value="\-?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?)?(\d+F)?((\-
|\+)\d{2}:\d{2}Z)?"/>
        </restriction>
    </simpleType>

    <!-- Definition of IncrDuration datatype -->
    <complexType name="IncrDurationType">
        <simpleContent>
            <extension base="integer">
                <attribute name="timeUnit" type="mpeg7:durationType" use="optional"/>
            </extension>
        </simpleContent>
    </complexType>

    <!-- Definition of timeOffsetType datatype -->
    <simpleType name="timeOffsetType">
        <restriction base="mpeg7:basicDurationType">
            <pattern value="\-?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?)?(\d+F)?((\-
|\+)\d{2}:\d{2}Z)?"/>
        </restriction>
    </simpleType>
```


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```
    <!-- Definition of RelTimePointType datatype -->
    <complexType name="RelTimePointType">
        <simpleContent>
            <extension base="mpeg7:timeOffsetType">
                <attribute name="timeBase" type="mpeg7:xPathRefType" use="optional"/>
            </extension>
        </simpleContent>
    </complexType>

    <!-- Definition of RelIncrTimePointType datatype -->
    <complexType name="RelIncrTimePointType">
        <simpleContent>
            <extension base="integer">
                <attribute name="timeUnit" type="mpeg7:durationType" use="optional"/>
                <attribute name="timeBase" type="mpeg7:xPathRefType" use="optional"/>
            </extension>
        </simpleContent>
    </complexType>

    <!-- Definition of timePropertyGrp attribute group -->
    <attributeGroup name="timePropertyGrp">
        <attribute name="timeBase" type="mpeg7:xPathRefType" use="optional"/>
        <attribute name="timeUnit" type="mpeg7:durationType" use="optional"/>
    </attributeGroup>

    <!-- Definition of MediaTime datatype -->
    <complexType name="MediaTimeType">
        <sequence>
            <choice>
                <element name="MediaTimePoint" type="mpeg7:mediaTimePointType"/>
                <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType"/>
                <element name="MediaRelIncrTimePoint"
type="mpeg7:MediaRelIncrTimePointType"/>
            </choice>
            <choice minOccurs="0">
                <element name="MediaDuration" type="mpeg7:mediaDurationType"/>
                <element name="MediaIncrDuration" type="mpeg7:MediaIncrDurationType"/>
            </choice>
        </sequence>
    </complexType>

    <!-- Definition of mediaTimePoint datatype -->
    <simpleType name="mediaTimePointType">
        <restriction base="mpeg7:basicTimePointType">
            <pattern value="(\-?\d+(\-\d{2}(\-
\d{2})?)?)?(T\d{2}(:\d{2}(:\d{2}(:\d+)?)?)?)?(F\d+)?"/>
        </restriction>
    </simpleType>

    <!-- Definition of mediaDuration datatype -->
    <simpleType name="mediaDurationType">
        <restriction base="mpeg7:basicDurationType">
            <pattern value="\-?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?)?(\d+F)?"/>
        </restriction>
    </simpleType>
7
    <!-- Definition of MediaIncrDuration datatype -->
    <complexType name="MediaIncrDurationType">
        <simpleContent>
            <extension base="integer">
                <attribute name="mediaTimeUnit" type="mpeg7:mediaDurationType"
use="optional"/>
            </extension>
        </simpleContent>
    </complexType>

    <!-- Definition of mediaTimeOffset datatype -->
    <simpleType name="mediaTimeOffsetType">
        <restriction base="mpeg7:basicDurationType">
            <pattern value="\-?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?)?(\d+F)?"/>
        </restriction>
```

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```
    </simpleType>

    <!-- Definition of MediaRelTimePoint datatype -->
    <complexType name="MediaRelTimePointType">
        <simpleContent>
            <extension base="mpeg7:mediaTimeOffsetType">
                <attribute name="mediaTimeBase" type="mpeg7:xPathRefType"
use="optional"/>
            </extension>
        </simpleContent>
    </complexType>

    <!-- Definition of MediaRelIncrTimePoint datatype -->
    <complexType name="MediaRelIncrTimePointType">
        <simpleContent>
            <extension base="integer">
                <attribute name="mediaTimeUnit" type="mpeg7:mediaDurationType"
use="optional"/>
                <attribute name="mediaTimeBase" type="mpeg7:xPathRefType"
use="optional"/>
            </extension>
        </simpleContent>
    </complexType>

    <!-- Definition of mediaTimePropertyGrp attribute group -->
    <attributeGroup name="mediaTimePropertyGrp">
        <attribute name="mediaTimeBase" type="mpeg7:xPathRefType" use="optional"/>
        <attribute name="mediaTimeUnit" type="mpeg7:mediaDurationType" use="optional"/>
    </attributeGroup>

    <!-- Definition of MediaLocator datatype -->
    <complexType name="MediaLocatorType">
        <sequence>
            <choice minOccurs="0">
                <element name="MediaUri" type="anyURI"/>
                <element name="InlineMedia" type="mpeg7:InlineMediaType"/>
            </choice>
            <element name="StreamID" type="nonNegativeInteger" minOccurs="0"/>
        </sequence>
    </complexType>

    <!-- Definition of InlineMedia datatype -->
    <complexType name="InlineMediaType">
        <choice>
            <element name="MediaData16" type="hexBinary"/>
            <element name="MediaData64" type="base64Binary"/>
        </choice>
        <attribute name="type" type="mpeg7:mimeType" use="required"/>
    </complexType>

    <!-- Definition of TemporalSegmentLocator datatype -->
    <complexType name="TemporalSegmentLocatorType">
        <complexContent>
            <extension base="mpeg7:MediaLocatorType">
                <choice minOccurs="0">
                    <element name="MediaTime" type="mpeg7:MediaTimeType"/>
                    <element name="BytePosition">
                        <complexType>
                            <attribute name="offset" type="nonNegativeInteger"
use="required"/>
                            <attribute name="length" type="positiveInteger"
use="optional"/>
                        </complexType>
                    </element>
                </choice>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of ImageLocator datatype -->
    <complexType name="ImageLocatorType">
        <complexContent>
```


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```
            <extension base="mpeg7:MediaLocatorType">
                <choice minOccurs="0">
                    <element name="MediaTimePoint" type="mpeg7:mediaTimePointType"/>
                    <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType"/>
                    <element name="MediaRelIncrTimePoint"
type="mpeg7:MediaRelIncrTimePointType"/>
                    <element name="BytePosition">
                        <complexType>
                            <attribute name="offset" type="nonNegativeInteger"
use="required"/>
                            <attribute name="length" type="positiveInteger"
use="optional"/>
                        </complexType>
                    </element>
                </choice>
            </extension>
        </complexContent>
    </complexType>

    <!-- ############################################################ -->
    <!--  Tools from ISO/IEC 15938-5 (MDS) Clause 7                   -->
    <!-- ############################################################ -->

    <!-- Definition of TextualBase datatype -->
    <complexType name="TextualBaseType" abstract="true">
        <simpleContent>
            <extension base="string">
                <attribute ref="xml:lang" use="optional"/>
                <!-- phoneticTranscription attribute excluded -->
                <!--
                <attribute name="phoneticTranscription" use="optional">
                    <simpleType>
                        <list itemType="mpeg7:PhoneType"/>
                    </simpleType>
                </attribute>
                -->
                <!-- phoneticAlphabet attribute excluded -->
                <!--
                <attribute name="phoneticAlphabet" type="mpeg7:phoneticAlphabetType"
use="optional" default="sampa"/>
                -->
            </extension>
        </simpleContent>
    </complexType>

    <!-- Definition of Textual datatype -->
    <complexType name="TextualType">
        <simpleContent>
            <extension base="mpeg7:TextualBaseType"/>
        </simpleContent>
    </complexType>

    <!-- Definition of ClassificationSchemeBase DS  -->
    <complexType name="ClassificationSchemeBaseType" abstract="true">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="Import" type="mpeg7:ReferenceType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
                <attribute name="uri" type="anyURI" use="required"/>
                <attribute name="domain" use="optional">
                    <simpleType>
                        <list itemType="mpeg7:xPathAbsoluteSelectorType"/>
                    </simpleType>
                </attribute>
            </extension>
        </complexContent>
    </complexType>
```

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```
    <!-- Definition of ClassificationScheme DS  -->
    <complexType name="ClassificationSchemeType">
        <complexContent>
            <extension base="mpeg7:ClassificationSchemeBaseType">
                <sequence>
                    <element name="Term" type="mpeg7:TermDefinitionType" minOccurs="1"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of TermDefinitionBase DS  -->
    <complexType name="TermDefinitionBaseType" abstract="true">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="Name" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <simpleContent>
                                <extension base="mpeg7:TextualType">
                                    <attribute name="preferred" type="boolean"
use="optional"/>
                                </extension>
                            </simpleContent>
                        </complexType>
                    </element>
                    <element name="Definition" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
                <attribute name="termID" type="NMTOKEN"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of TermDefinition DS  -->
    <complexType name="TermDefinitionType">
        <complexContent>
            <extension base="mpeg7:TermDefinitionBaseType">
                <sequence>
                    <element name="Term" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:TermDefinitionType">
                                    <attribute name="relation"
type="mpeg7:termRelationQualifierType" use="optional" default="NT"/>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                </sequence>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of termRelationQualifier datatype  -->
    <simpleType name="termRelationQualifierType">
        <union>
            <simpleType>
                <restriction base="NMTOKEN">
                    <enumeration value="NT"/>
                    <enumeration value="BT"/>
                    <enumeration value="RT"/>
                    <enumeration value="US"/>
                    <enumeration value="UF"/>
                </restriction>
            </simpleType>
            <simpleType>
                <restriction base="mpeg7:termReferenceType"/>
            </simpleType>
        </union>
```

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```
    </simpleType>

    <!-- Definition of InlineTermDefinition datatype  -->
    <complexType name="InlineTermDefinitionType" abstract="true">
        <sequence>
            <element name="Name" minOccurs="0" maxOccurs="unbounded">
                <complexType>
                    <simpleContent>
                        <extension base="mpeg7:TextualType">
                            <attribute name="preferred" type="boolean" use="optional"/>
                        </extension>
                    </simpleContent>
                </complexType>
            </element>
            <element name="Definition" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
            <!-- Term element excluded
            <element name="Term" minOccurs="0" maxOccurs="unbounded">
                <complexType>
                    <complexContent>
                        <extension base="mpeg7:InlineTermDefinitionType">
                            <attribute name="relation"
type="mpeg7:termRelationQualifierType" use="optional" default="NT"/>
                            <attribute name="termID" type="NMTOKEN"/>
                        </extension>
                    </complexContent>
                </complexType>
            </element>
            -->
        </sequence>
    </complexType>

    <!-- Definition of TermUse datatype  -->
    <complexType name="TermUseType">
        <complexContent>
            <extension base="mpeg7:InlineTermDefinitionType">
                <attribute name="href" type="mpeg7:termReferenceType" use="optional"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of ControlledTermUse datatype  -->
    <complexType name="ControlledTermUseType">
        <complexContent>
            <extension base="mpeg7:InlineTermDefinitionType">
                <attribute name="href" type="mpeg7:termReferenceType" use="required"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of termReference datatype  -->
    <simpleType name="termReferenceType">
        <union>
            <simpleType>
                <restriction base="NMTOKEN">
                    <whiteSpace value="collapse"/>
                    <pattern value=":[^:]+:[^:]+"/>
                </restriction>
            </simpleType>
            <simpleType>
                <restriction base="anyURI"/>
            </simpleType>
        </union>
    </simpleType>

    <!-- Definition of ClassificationSchemeAlias datatype  -->
    <complexType name="ClassificationSchemeAliasType">
        <complexContent>
            <extension base="mpeg7:HeaderType">
                <attribute name="alias" type="NMTOKEN" use="required"/>
                <attribute name="href" type="anyURI" use="required"/>
```

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```
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of Agent DS  -->
    <complexType name="AgentType" abstract="true">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="Icon" type="mpeg7:MediaLocatorType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of Person DS  -->
    <complexType name="PersonType">
        <complexContent>
            <extension base="mpeg7:AgentType">
                <sequence>
                    <choice minOccurs="1" maxOccurs="unbounded">
                        <element name="Name" type="mpeg7:PersonNameType"/>
                        <element name="NameTerm" type="mpeg7:ControlledTermUseType"/>
                    </choice>
                    <element name="Affiliation" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <choice>
                                <element name="Organization" type="mpeg7:OrganizationType"/>
                                <element name="OrganizationRef" type="mpeg7:ReferenceType"/>
                                <element name="PersonGroup" type="mpeg7:PersonGroupType"/>
                                <element name="PersonGroupRef" type="mpeg7:ReferenceType"/>
                            </choice>
                        </complexType>
                    </element>
                    <element name="Citizenship" type="mpeg7:countryCode" minOccurs="0"
maxOccurs="unbounded"/>
                    <choice minOccurs="0">
                        <element name="Address" type="mpeg7:PlaceType"/>
                        <element name="AddressRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <element name="ElectronicAddress" type="mpeg7:ElectronicAddressType"
minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of PersonGroup DS  -->
    <complexType name="PersonGroupType">
        <complexContent>
            <extension base="mpeg7:AgentType">
                <sequence>
                    <element name="Name" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <simpleContent>
                                <extension base="mpeg7:TextualType">
                                    <attribute name="type" use="optional">
                                        <simpleType>
                                            <restriction base="NMTOKEN">
                                                <enumeration value="former"/>
                                                <enumeration value="variant"/>
                                                <enumeration value="main"/>
                                            </restriction>
                                        </simpleType>
                                    </attribute>
                                </extension>
                            </simpleContent>
                        </complexType>
                    </element>
                    <element name="NameTerm" minOccurs="0" maxOccurs="unbounded">
```


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```
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:ControlledTermUseType">
                                    <attribute name="type" use="optional">
                                        <simpleType>
                                            <restriction base="NMTOKEN">
                                                <enumeration value="former"/>
                                                <enumeration value="variant"/>
                                                <enumeration value="main"/>
                                            </restriction>
                                        </simpleType>
                                    </attribute>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                    <element name="Kind" type="mpeg7:TermUseType" minOccurs="0"/>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="Member" type="mpeg7:PersonType"/>
                        <element name="MemberRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <choice minOccurs="0">
                        <element name="Jurisdiction" type="mpeg7:PlaceType"/>
                        <element name="JurisdictionRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <choice minOccurs="0">
                        <element name="Address" type="mpeg7:PlaceType"/>
                        <element name="AddressRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <element name="ElectronicAddress" type="mpeg7:ElectronicAddressType"
minOccurs="0"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of Organization DS  -->
    <complexType name="OrganizationType">
        <complexContent>
            <extension base="mpeg7:AgentType">
                <sequence>
                    <element name="Name" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <simpleContent>
                                <extension base="mpeg7:TextualType">
                                    <attribute name="type" use="optional">
                                        <simpleType>
                                            <restriction base="NMTOKEN">
                                                <enumeration value="former"/>
                                                <enumeration value="variant"/>
                                                <enumeration value="main"/>
                                            </restriction>
                                        </simpleType>
                                    </attribute>
                                </extension>
                            </simpleContent>
                        </complexType>
                    </element>
                    <element name="NameTerm" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:ControlledTermUseType">
                                    <attribute name="type" use="optional">
                                        <simpleType>
                                            <restriction base="NMTOKEN">
                                                <enumeration value="former"/>
                                                <enumeration value="variant"/>
                                                <enumeration value="main"/>
                                            </restriction>
                                        </simpleType>
                                    </attribute>
```

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```
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="Kind" type="mpeg7:TermUseType" minOccurs="0"/>
                <choice minOccurs="0" maxOccurs="unbounded">
                    <element name="Contact" type="mpeg7:AgentType"/>
                    <element name="ContactRef" type="mpeg7:ReferenceType"/>
                </choice>
                <choice minOccurs="0">
                    <element name="Jurisdiction" type="mpeg7:PlaceType"/>
                    <element name="JurisdictionRef" type="mpeg7:ReferenceType"/>
                </choice>
                <choice minOccurs="0">
                    <element name="Address" type="mpeg7:PlaceType"/>
                    <element name="AddressRef" type="mpeg7:ReferenceType"/>
                </choice>
                <element name="ElectronicAddress" type="mpeg7:ElectronicAddressType"
minOccurs="0"/>
            </sequence>
        </extension>
    </complexContent>
</complexType>

<!-- Definition of PersonaName datatype  -->
<complexType name="PersonNameType">
    <sequence>
        <choice minOccurs="1" maxOccurs="unbounded">
            <element name="GivenName" type="mpeg7:NameComponentType"/>
            <element name="FamilyName" type="mpeg7:NameComponentType" minOccurs="0"/>
            <element name="Title" type="mpeg7:NameComponentType" minOccurs="0"/>
            <element name="Numeration" type="string" minOccurs="0"/>
        </choice>
    </sequence>
    <attribute name="dateFrom" type="mpeg7:timePointType" use="optional"/>
    <attribute name="dateTo" type="mpeg7:timePointType" use="optional"/>
    <attribute name="type" use="optional">
        <simpleType>
            <restriction base="NMTOKEN">
                <enumeration value="former"/>
                <enumeration value="variant"/>
                <enumeration value="main"/>
            </restriction>
        </simpleType>
    </attribute>
    <attribute ref="xml:lang" use="optional"/>
</complexType>

<!-- Definition of NameComponent datatype -->
<complexType name="NameComponentType">
    <simpleContent>
        <extension base="mpeg7:TextualBaseType">
            <attribute name="initial" type="string" use="optional"/>
            <attribute name="abbrev" type="string" use="optional"/>
        </extension>
    </simpleContent>
</complexType>

<!-- Definition of ElectronicAddress datatype -->
<complexType name="ElectronicAddressType">
    <sequence>
        <element name="Telephone" type="string" minOccurs="0" maxOccurs="unbounded"/>
        <element name="Fax" type="string" minOccurs="0" maxOccurs="unbounded"/>
        <element name="Email" type="string" minOccurs="0" maxOccurs="unbounded"/>
        <element name="Url" type="anyURI" minOccurs="0" maxOccurs="unbounded"/>
    </sequence>
</complexType>

<!-- Definition of Place DS -->
<complexType name="PlaceType">
    <complexContent>
        <extension base="mpeg7:DSType">
```


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```
                <sequence>
                    <element name="Name" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="NameTerm" type="mpeg7:ControlledTermUseType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="Role" type="mpeg7:TermUseType" minOccurs="0"/>
                    <element name="GeographicPosition" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="Point" type="mpeg7:GeographicPointType"/>
                            </sequence>
                            <attribute name="datum" type="string" use="optional"/>
                        </complexType>
                    </element>
                    <!-- AstronomicalBody element excluded
                    <element name="AstronomicalBody" type="mpeg7:TermUseType"
minOccurs="0" maxOccurs="unbounded"/>
                    -->
                    <element name="Region" type="mpeg7:regionCode" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="AdministrativeUnit" minOccurs="0"
maxOccurs="unbounded">
                        <complexType>
                            <simpleContent>
                                <extension base="string">
                                    <attribute name="type" type="string" use="optional"/>
                                </extension>
                            </simpleContent>
                        </complexType>
                    </element>
                    <element name="PostalAddress" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="AddressLine" type="mpeg7:TextualType"
minOccurs="1" maxOccurs="unbounded"/>
                                <element name="PostingIdentifier" type="mpeg7:TextualType"
minOccurs="0"/>
                            </sequence>
                            <attribute ref="xml:lang" use="optional"/>
                        </complexType>
                    </element>
                    <element name="InternalCoordinates" type="string" minOccurs="0"/>
                </sequence>
                <attribute ref="xml:lang" use="optional"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of GeographicPoint datatype -->
    <complexType name="GeographicPointType">
        <attribute name="longitude" use="required">
            <simpleType>
                <restriction base="double">
                    <minInclusive value="-180.0"/>
                    <maxInclusive value="180.0"/>
                </restriction>
            </simpleType>
        </attribute>
        <attribute name="latitude" use="required">
            <simpleType>
                <restriction base="double">
                    <minInclusive value="-90.0"/>
                    <maxInclusive value="90.0"/>
                </restriction>
            </simpleType>
        </attribute>
        <attribute name="altitude" type="double" use="optional"/>
    </complexType>

    <!-- Definition of MediaFormat D -->
    <complexType name="MediaFormatType">
```

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```
        <complexContent>
            <extension base="mpeg7:DType">
                <sequence>
                    <element name="Content" type="mpeg7:ControlledTermUseType"/>
                    <element name="Medium" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                    <element name="FileFormat" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                    <element name="FileSize" type="nonNegativeInteger" minOccurs="0"/>
                    <element name="System" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                    <!-- Bandwidth element excluded
                    <element name="Bandwidth" type="float" minOccurs="0"/>
                    -->
                    <element name="BitRate" minOccurs="0">
                        <complexType>
                            <simpleContent>
                                <extension base="nonNegativeInteger">
                                    <attribute name="variable" type="boolean" use="optional"
default="false"/>
                                    <attribute name="minimum" type="nonNegativeInteger"
use="optional"/>
                                    <attribute name="average" type="nonNegativeInteger"
use="optional"/>
                                    <attribute name="maximum" type="nonNegativeInteger"
use="optional"/>
                                </extension>
                            </simpleContent>
                        </complexType>
                    </element>
                    <!-- TargetChannelBitRate element excluded
                    <element name="TargetChannelBitRate" type="nonNegativeInteger"
minOccurs="0"/>
                    -->
                    <!-- ScalableCoding element excluded
                    <element name="ScalableCoding" minOccurs="0">
                        <simpleType>
                            <union>
                                <simpleType>
                                    <restriction base="NMTOKEN">
                                        <enumeration value="spatial"/>
                                        <enumeration value="temporal"/>
                                        <enumeration value="snr"/>
                                        <enumeration value="fgs"/>
                                    </restriction>
                                </simpleType>
                                <simpleType>
                                    <restriction base="mpeg7:termReferenceType"/>
                                </simpleType>
                            </union>
                        </simpleType>
                    </element>
                    -->
                    <element name="VisualCoding" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="Format" minOccurs="0">
                                    <complexType>
                                        <complexContent>
                                            <extension base="mpeg7:ControlledTermUseType">
                                                <attribute name="colorDomain" use="optional"
default="color">
                                                    <simpleType>
                                                        <union>
                                                            <simpleType>
                                                                <restriction base="NMTOKEN">
                                                                    <enumeration
value="binary"/>
                                                                    <enumeration
value="color"/>
```


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```
                                                                    <enumeration
value="graylevel"/>
                                                                    <enumeration
value="colorized"/>
                                                                </restriction>
                                                            </simpleType>
                                                            <simpleType>
                                                                <restriction
base="mpeg7:termReferenceType"/>
                                                            </simpleType>
                                                        </union>
                                                    </simpleType>
                                                </attribute>
                                            </extension>
                                        </complexContent>
                                    </complexType>
                                </element>
                                <element name="Pixel" minOccurs="0">
                                    <complexType>
                                        <attribute name="resolution"
type="nonNegativeInteger" use="optional"/>
                                        <attribute name="aspectRatio"
type="mpeg7:nonNegativeReal" use="optional"/>
                                        <attribute name="bitsPer" type="nonNegativeInteger"
use="optional"/>
                                    </complexType>
                                </element>
                                <element name="Frame" minOccurs="0">
                                    <complexType>
                                        <attribute name="height" type="nonNegativeInteger"
use="optional"/>
                                        <attribute name="width" type="nonNegativeInteger"
use="optional"/>
                                        <attribute name="aspectRatio"
type="mpeg7:nonNegativeReal" use="optional"/>
                                        <attribute name="rate" type="mpeg7:nonNegativeReal"
use="optional"/>
                                        <attribute name="structure" use="optional">
                                            <simpleType>
                                                <restriction base="NMTOKEN">
                                                    <enumeration value="progressive"/>
                                                    <enumeration value="interlaced"/>
                                                </restriction>
                                            </simpleType>
                                        </attribute>
                                    </complexType>
                                </element>
                                <!-- ColorSampling element excluded
                                <element name="ColorSampling" type="mpeg7:ColorSamplingType"
minOccurs="0"/>
                                -->
                            </sequence>
                        </complexType>
                    </element>
                    <element name="AudioCoding" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="Format" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                                <element name="AudioChannels" minOccurs="0">
                                    <complexType>
                                        <simpleContent>
                                            <extension base="nonNegativeInteger">
                                                <attribute name="front"
type="nonNegativeInteger" use="optional"/>
                                                <attribute name="side"
type="nonNegativeInteger" use="optional"/>
                                                <attribute name="rear"
type="nonNegativeInteger" use="optional"/>
                                                <attribute name="lfe"
type="nonNegativeInteger" use="optional"/>
```

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```
                                        <attribute name="track"
type="nonNegativeInteger" use="optional"/>
                                    </extension>
                                </simpleContent>
                            </complexType>
                        </element>
                        <element name="Sample" minOccurs="0">
                            <complexType>
                                <attribute name="rate" type="mpeg7:nonNegativeReal"
use="optional"/>
                                <attribute name="bitsPer" type="nonNegativeInteger"
use="optional"/>
                            </complexType>
                        </element>
                        <element name="Emphasis" minOccurs="0">
                            <simpleType>
                                <union>
                                    <simpleType>
                                        <restriction base="NMTOKEN">
                                            <enumeration value="none"/>
                                            <enumeration
value="50over15Microseconds"/>
                                            <enumeration value="ccittJ17"/>
                                        </restriction>
                                    </simpleType>
                                    <simpleType>
                                        <restriction base="mpeg7:termReferenceType"/>
                                    </simpleType>
                                </union>
                            </simpleType>
                        </element>
                        <element name="Presentation"
type="mpeg7:ControlledTermUseType" minOccurs="0"/>
                    </sequence>
                </complexType>
            </element>
            <element name="SceneCodingFormat" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
            <element name="GraphicsCodingFormat"
type="mpeg7:ControlledTermUseType" minOccurs="0"/>
            <element name="OtherCodingFormat" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
        </sequence>
    </extension>
</complexContent>
</complexType>

<!-- ########################################################## -->
<!--  Tools from ISO/IEC 15938-5 (MDS) Clause 8                 -->
<!-- ########################################################## -->

<!-- Definition of Rating datatype -->
<complexType name="RatingType">
    <sequence>
        <element name="RatingValue" type="float"/>
        <element name="RatingScheme">
            <complexType>
                <complexContent>
                    <extension base="mpeg7:TermUseType">
                        <attribute name="best" type="float" use="optional"/>
                        <attribute name="worst" type="float" use="optional"/>
                        <attribute name="style" use="required">
                            <simpleType>
                                <restriction base="NMTOKEN">
                                    <enumeration value="higherBetter"/>
                                    <enumeration value="lowerBetter"/>
                                </restriction>
                            </simpleType>
                        </attribute>
                    </extension>
                </complexContent>
```

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```
            </complexType>
        </element>
    </sequence>
</complexType>

<!-- ############################################################ -->
<!--  Tools from ISO/IEC 15938-5 (MDS) Clause 9                   -->
<!-- ############################################################ -->

<!-- Definition of Title datatype  -->
<complexType name="TitleType">
    <simpleContent>
        <extension base="mpeg7:TextualBaseType">
            <attribute name="type" use="optional" default="main">
                <simpleType>
                    <union>
                        <simpleType>
                            <restriction base="NMTOKEN">
                                <enumeration value="main"/>
                                <enumeration value="secondary"/>
                                <enumeration value="alternative"/>
                                <enumeration value="original"/>
                                <enumeration value="popular"/>
                                <enumeration value="opusNumber"/>
                                <enumeration value="songTitle"/>
                                <enumeration value="albumTitle"/>
                                <enumeration value="seriesTitle"/>
                                <enumeration value="episodeTitle"/>
                            </restriction>
                        </simpleType>
                        <simpleType>
                            <restriction base="mpeg7:termReferenceType"/>
                        </simpleType>
                    </union>
                </simpleType>
            </attribute>
        </extension>
    </simpleContent>
</complexType>

<!-- Definition of TitleMedia datatype -->
<complexType name="TitleMediaType">
    <sequence>
        <element name="TitleImage" type="mpeg7:ImageLocatorType" minOccurs="0"/>
        <element name="TitleVideo" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
        <element name="TitleAudio" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
    </sequence>
</complexType>

<!-- Definition of Creator datatype -->
<complexType name="CreatorType">
    <complexContent>
        <extension base="mpeg7:MediaAgentType">
            <sequence>
                <element name="Character" type="mpeg7:PersonNameType" minOccurs="0"
maxOccurs="unbounded"/>
                <!-- Instrument element excluded
                <element name="Instrument" type="mpeg7:CreationToolType" minOccurs="0"
maxOccurs="unbounded"/>
                -->
            </sequence>
        </extension>
    </complexContent>
</complexType>

<!-- Definition of MediaAgent datatype  -->
<complexType name="MediaAgentType">
    <sequence>
        <element name="Role" type="mpeg7:ControlledTermUseType"/>
```

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```
            <choice>
                <element name="Agent" type="mpeg7:AgentType"/>
                <element name="AgentRef" type="mpeg7:ReferenceType"/>
            </choice>
        </sequence>
    </complexType>

    <!-- Definition of ExtendedLanguage datatype -->
    <complexType name="ExtendedLanguageType">
        <simpleContent>
            <extension base="language">
                <attribute name="type" use="optional" default="original">
                    <simpleType>
                        <restriction base="NMTOKEN">
                            <enumeration value="original"/>
                            <enumeration value="dubbed"/>
                            <enumeration value="background"/>
                        </restriction>
                    </simpleType>
                </attribute>
                <attribute name="supplemental" type="boolean" use="optional"
default="false"/>
            </extension>
        </simpleContent>
    </complexType>

    <!-- Definition of ParentalGuidance datatype -->
    <complexType name="ParentalGuidanceType">
        <sequence>
            <choice>
                <element name="ParentalRating" type="mpeg7:ControlledTermUseType"/>
                <element name="MinimumAge" type="nonNegativeInteger"/>
            </choice>
            <element name="Region" type="mpeg7:regionCode" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
    </complexType>

    <!-- ################################################################ -->
    <!--  Tools from ISO/IEC 15938-5 (MDS) Clause 15                      -->
    <!-- ################################################################ -->

    <!-- Definition of PreferenceCondition D -->
    <complexType name="PreferenceConditionType">
        <complexContent>
            <extension base="mpeg7:DType">
                <sequence>
                    <element name="Place" type="mpeg7:PlaceType" minOccurs="0"/>
                    <element name="Time" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:TimeType">
                                    <attribute name="recurrence" use="optional"
default="none">
                                        <simpleType>
                                            <union>
                                                <simpleType>
                                                    <restriction base="NMTOKEN">
                                                        <enumeration value="none"/>
                                                        <enumeration value="daily"/>
                                                        <enumeration value="weekly"/>
                                                        <enumeration value="monthly"/>
                                                        <enumeration value="annually"/>
                                                    </restriction>
                                                </simpleType>
                                                <simpleType>
                                                    <restriction
base="mpeg7:termReferenceType"/>
                                                </simpleType>
                                            </union>
                                        </simpleType>
```


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```
                                    </attribute>
                                    <attribute name="numOfRecurrences" type="positiveInteger"
use="optional"/>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                </sequence>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of userChoice datatype -->
    <simpleType name="userChoiceType">
        <restriction base="NMTOKEN">
            <enumeration value="true"/>
            <enumeration value="false"/>
            <enumeration value="user"/>
        </restriction>
    </simpleType>

    <!-- Definition of preferenceValue datatype -->
    <simpleType name="preferenceValueType">
        <restriction base="integer">
            <minInclusive value="-100"/>
            <maxInclusive value="100"/>
        </restriction>
    </simpleType>

    <!-- Definition of UserPreferences DS -->
    <complexType name="UserPreferencesType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="UserIdentifier" type="mpeg7:UserIdentifierType"
minOccurs="0"/>
                    <element name="FilteringAndSearchPreferences"
type="mpeg7:FilteringAndSearchPreferencesType" minOccurs="0" maxOccurs="unbounded"/>
                    <element name="BrowsingPreferences"
type="mpeg7:BrowsingPreferencesType" minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
                <attribute name="allowAutomaticUpdate" type="mpeg7:userChoiceType"
use="optional" default="false"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of UserIdentifier datatype -->
    <complexType name="UserIdentifierType">
        <sequence>
            <element name="Name" type="mpeg7:TextualType"/>
        </sequence>
        <attribute name="protected" type="mpeg7:userChoiceType" use="optional"
default="true"/>
    </complexType>

    <!-- Definition of FilteringAndSearchPreferences DS -->
    <complexType name="FilteringAndSearchPreferencesType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="CreationPreferences"
type="mpeg7:CreationPreferencesType" minOccurs="0" maxOccurs="unbounded"/>
                    <element name="ClassificationPreferences"
type="mpeg7:ClassificationPreferencesType" minOccurs="0" maxOccurs="unbounded"/>
                    <element name="SourcePreferences" type="mpeg7:SourcePreferencesType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="PreferenceCondition"
type="mpeg7:PreferenceConditionType" minOccurs="0" maxOccurs="unbounded"/>
                    <element name="FilteringAndSearchPreferences"
type="mpeg7:FilteringAndSearchPreferencesType" minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
```

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```
            <attribute name="protected" type="mpeg7:userChoiceType" use="optional"
default="true"/>
            <attribute name="preferenceValue" type="mpeg7:preferenceValueType"
use="optional" default="10"/>
        </extension>
    </complexContent>
</complexType>

<!-- Definition of CreationPreferences DS -->
<complexType name="CreationPreferencesType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="Title" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:TitleType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="Creator" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:CreatorType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="Keyword" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:TextualType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="Location" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:PlaceType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="DatePeriod" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:TimeType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="Tool" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:TermUseType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </complexContent>
```


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```
                    </complexType>
                </element>
            </sequence>
            <attribute name="preferenceValue" type="mpeg7:preferenceValueType"
use="optional" default="10"/>
        </extension>
    </complexContent>
</complexType>

<!-- Definition of ClassificationPreferences DS -->
<complexType name="ClassificationPreferencesType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="Country" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:countryCode">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="DatePeriod" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:TimeType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="LanguageFormat" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:auxiliaryLanguageType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="Language" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:ExtendedLanguageType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="CaptionLanguage" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="language">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="Form" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:TermUseType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
```

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```
                        </complexContent>
                    </complexType>
                </element>
                <element name="Genre" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:TermUseType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="Subject" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:TextualType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="Review" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <sequence>
                            <element name="Rating" type="mpeg7:RatingType"
minOccurs="0"/>
                            <element name="Reviewer" type="mpeg7:AgentType"
minOccurs="0"/>
                        </sequence>
                        <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                    </complexType>
                </element>
                <element name="ParentalGuidance" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:ParentalGuidanceType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
            </sequence>
            <attribute name="preferenceValue" type="mpeg7:preferenceValueType"
use="optional" default="10"/>
        </extension>
    </complexContent>
</complexType>

<!-- Definition of auxiliaryLanguage datatype -->
<simpleType name="auxiliaryLanguageType">
    <union>
        <simpleType>
            <restriction base="NMTOKEN">
                <enumeration value="dubbed"/>
                <enumeration value="closedCaptions"/>
                <enumeration value="subTitles"/>
                <enumeration value="signLanguage"/>
                <enumeration value="audioDescription"/>
            </restriction>
        </simpleType>
        <simpleType>
            <restriction base="mpeg7:termReferenceType"/>
        </simpleType>
    </union>
</simpleType>

<!-- Definition of SourcePreferences DS -->
```


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```
    <complexType name="SourcePreferencesType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="DisseminationFormat" minOccurs="0"
maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:TermUseType">
                                    <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                    <element name="DisseminationSource" minOccurs="0"
maxOccurs="unbounded">
                        <complexType>
                            <simpleContent>
                                <extension base="mpeg7:TextualType">
                                    <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                                </extension>
                            </simpleContent>
                        </complexType>
                    </element>
                    <element name="DisseminationLocation" minOccurs="0"
maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:PlaceType">
                                    <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                    <element name="DisseminationDate" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:TimeType">
                                    <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                    <element name="Disseminator" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:MediaAgentType">
                                    <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                    <element name="MediaFormat" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:MediaFormatType">
                                    <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                </sequence>
                <attribute name="noRepeat" type="boolean" use="optional"/>
                <attribute name="noEncryption" type="boolean" use="optional"/>
                <attribute name="noPayPerUse" type="boolean" use="optional"/>
```

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```
            <attribute name="preferenceValue" type="mpeg7:preferenceValueType"
use="optional" default="10"/>
        </extension>
    </complexContent>
</complexType>

<!-- Definition of BrowsingPreferences DS -->
<complexType name="BrowsingPreferencesType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="SummaryPreferences" type="mpeg7:SummaryPreferencesType"
minOccurs="0" maxOccurs="unbounded"/>
                <element name="PreferenceCondition" minOccurs="0"
maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:PreferenceConditionType">
                                <sequence>
                                    <element name="Genre" type="mpeg7:TermUseType"
minOccurs="0"/>
                                </sequence>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
            </sequence>
            <attribute name="protected" type="mpeg7:userChoiceType" use="optional"
default="true"/>
            <attribute name="preferenceValue" type="mpeg7:preferenceValueType"
use="optional" default="10"/>
        </extension>
    </complexContent>
</complexType>

<!-- Definition of SummaryPreferences DS -->
<complexType name="SummaryPreferencesType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="SummaryType" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:summaryComponentType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="SummaryTheme" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:TextualType">
                                <attribute name="preferenceValue"
type="mpeg7:preferenceValueType" use="optional" default="10"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="SummaryDuration" type="mpeg7:mediaDurationType"
minOccurs="0"/>
                <element name="MinSummaryDuration" type="mpeg7:mediaDurationType"
minOccurs="0"/>
                <element name="MaxSummaryDuration" type="mpeg7:mediaDurationType"
minOccurs="0"/>
                <element name="NumOfKeyFrames" type="positiveInteger" minOccurs="0"/>
                <element name="MinNumOfKeyFrames" type="positiveInteger"
minOccurs="0"/>
                <element name="MaxNumOfKeyFrames" type="positiveInteger"
minOccurs="0"/>
```


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```
                    <element name="NumOfChars" type="positiveInteger" minOccurs="0"/>
                    <element name="MinNumOfChars" type="positiveInteger" minOccurs="0"/>
                    <element name="MaxNumOfChars" type="positiveInteger" minOccurs="0"/>
                </sequence>
                <attribute name="preferenceValue" type="mpeg7:preferenceValueType"
use="optional" default="10"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of summaryComponent datatype -->
    <simpleType name="summaryComponentType">
        <union>
            <simpleType>
                <restriction base="NMTOKEN">
                    <enumeration value="audio"/>
                    <enumeration value="visual"/>
                    <enumeration value="audioVisual"/>
                    <enumeration value="textual"/>
                    <enumeration value="keyAudioClips"/>
                    <enumeration value="keyVideoClips"/>
                    <enumeration value="keyAudioVisualClips"/>
                    <enumeration value="keyFrames"/>
                    <enumeration value="keySounds"/>
                    <enumeration value="keyThemes"/>
                </restriction>
            </simpleType>
            <simpleType>
                <restriction base="mpeg7:termReferenceType"/>
            </simpleType>
        </union>
    </simpleType>

    <!-- Definition of UsageHistory DS -->
    <complexType name="UsageHistoryType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="UserIdentifier" type="mpeg7:UserIdentifierType"
minOccurs="0"/>
                    <element name="UserActionHistory" type="mpeg7:UserActionHistoryType"
minOccurs="1" maxOccurs="unbounded"/>
                </sequence>
                <attribute name="allowCollection" type="mpeg7:userChoiceType"
use="optional" default="false"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of UserActionHistory DS -->
    <complexType name="UserActionHistoryType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="ObservationPeriod" type="mpeg7:TimeType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="UserActionList" type="mpeg7:UserActionListType"
minOccurs="1" maxOccurs="unbounded"/>
                </sequence>
                <attribute name="protected" type="mpeg7:userChoiceType" use="optional"
default="true"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of UserActionList DS -->
    <complexType name="UserActionListType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence minOccurs="0">
                    <element name="ActionType" type="mpeg7:TermUseType"/>
```

--`,,`-`-`,,`,,`,`,,`---

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```
                    <element name="UserAction" type="mpeg7:UserActionType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
                <attribute name="numOfInstances" type="nonNegativeInteger"
use="optional"/>
                <attribute name="totalDuration" type="mpeg7:durationType"
use="optional"/>
            </extension>
        </complexContent>
    </complexType>

    <!-- Definition of UserAction DS -->
    <complexType name="UserActionType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="ActionTime" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="MediaTime" type="mpeg7:MediaTimeType"
minOccurs="0"/>
                                <element name="GeneralTime" type="mpeg7:TimeType"
minOccurs="0"/>
                            </sequence>
                        </complexType>
                    </element>
                    <element name="ProgramIdentifier" type="mpeg7:UniqueIDType"/>
                    <element name="ActionDataItem" type="mpeg7:ReferenceType"
minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>

</schema>
```

3.4 CDP Profile Schema

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

<!-- ################################################################################

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```


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```
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******************************************************************************** -->
<!-- ############################################################################ -->
<!-- ISO/IEC 15938 Information Technology-Multimedia Content Description Interface -->
<!-- Part 9: MPEG-7 Profiles and Levels (ISO/IEC 15938-9)                         -->
<!-- Core Description Profile                                                     -->
<!--                                                                              -->
<!-- Last updated:  22 July 2004                                                  -->
<!-- ############################################################################ -->

<schema targetNamespace="urn:mpeg:mpeg7:schema:2001"
xmlns:mpeg7="urn:mpeg:mpeg7:schema:2001" xmlns="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified" attributeFormDefault="unqualified">
    <import namespace="http://www.w3.org/XML/1998/namespace" schemaLocation="./xml-
1998.xsd"/>
    <!-- Mpeg7BaseType -->
    <complexType name="Mpeg7BaseType" abstract="true">
        <complexContent>
            <restriction base="anyType"/>
        </complexContent>
    </complexType>
    <!-- DType -->
    <complexType name="DType" abstract="true">
        <complexContent>
            <extension base="mpeg7:Mpeg7BaseType"/>
        </complexContent>
    </complexType>
    <!-- DSType -->
    <complexType name="DSType" abstract="true">
        <complexContent>
            <extension base="mpeg7:Mpeg7BaseType">
                <sequence>
                    <element name="Header" type="mpeg7:HeaderType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
                <attribute name="id" type="ID" use="optional"/>
                <attributeGroup ref="mpeg7:timePropertyGrp"/>
                <attributeGroup ref="mpeg7:mediaTimePropertyGrp"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- HeaderType -->
    <complexType name="HeaderType" abstract="true">
        <complexContent>
            <extension base="mpeg7:Mpeg7BaseType">
                <attribute name="id" type="ID" use="optional"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- Mpeg7Type -->
    <complexType name="Mpeg7Type" abstract="true">
        <sequence>
            <element name="DescriptionProfile" type="mpeg7:DescriptionProfileType"
minOccurs="0"/>
            <element name="DescriptionMetadata" type="mpeg7:DescriptionMetadataType"
minOccurs="0"/>
        </sequence>
        <attribute ref="xml:lang" use="optional"/>
        <attributeGroup ref="mpeg7:timePropertyGrp"/>
        <attributeGroup ref="mpeg7:mediaTimePropertyGrp"/>
    </complexType>
    <!-- DescriptionProfileType -->
    <complexType name="DescriptionProfileType">
        <attribute name="profileAndLevelIndication" use="required">
            <simpleType>
                <list itemType="anyURI"/>
            </simpleType>
        </attribute>
    </complexType>
    <!-- Mpeg7 -->
    <element name="Mpeg7">
```

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```
        <complexType>
            <complexContent>
                <extension base="mpeg7:Mpeg7Type">
                    <sequence>
                        <element name="Description" type="mpeg7:CompleteDescriptionType"
maxOccurs="unbounded"/>
                    </sequence>
                </extension>
            </complexContent>
        </complexType>
    </element>
    <!-- CompleteDescriptionType -->
    <complexType name="CompleteDescriptionType" abstract="true">
        <sequence>
            <element name="DescriptionMetadata" type="mpeg7:DescriptionMetadataType"
minOccurs="0"/>
            <element name="Relationships" type="mpeg7:GraphType" minOccurs="0"
maxOccurs="unbounded"/>
            <element name="OrderingKey" type="mpeg7:OrderingKeyType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <!-- ContentDescriptionType -->
    <complexType name="ContentDescriptionType" abstract="true">
        <complexContent>
            <extension base="mpeg7:CompleteDescriptionType">
                <sequence>
                    <element name="Affective" type="mpeg7:AffectiveType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- ContentEntityType -->
    <complexType name="ContentEntityType">
        <complexContent>
            <extension base="mpeg7:ContentDescriptionType">
                <sequence>
                    <element name="MultimediaContent" type="mpeg7:MultimediaContentType"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- MultimediaContentType -->
    <complexType name="MultimediaContentType" abstract="true">
        <complexContent>
            <extension base="mpeg7:DSType"/>
        </complexContent>
    </complexType>
    <!-- ImageType -->
    <complexType name="ImageType">
        <complexContent>
            <extension base="mpeg7:MultimediaContentType">
                <sequence>
                    <element name="Image" type="mpeg7:StillRegionType"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- VideoType -->
    <complexType name="VideoType">
        <complexContent>
            <extension base="mpeg7:MultimediaContentType">
                <sequence>
                    <element name="Video" type="mpeg7:VideoSegmentType"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- AudioType -->
```


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```
    <complexType name="AudioType">
        <complexContent>
            <extension base="mpeg7:MultimediaContentType">
                <sequence>
                    <element name="Audio" type="mpeg7:AudioSegmentType"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- AudioVisualType -->
    <complexType name="AudioVisualType">
        <complexContent>
            <extension base="mpeg7:MultimediaContentType">
                <sequence>
                    <element name="AudioVisual" type="mpeg7:AudioVisualSegmentType"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- MultimediaCollectionType -->
    <complexType name="MultimediaCollectionType">
        <complexContent>
            <extension base="mpeg7:MultimediaContentType">
                <choice>
                    <element name="Collection" type="mpeg7:CollectionType"
maxOccurs="unbounded"/>
                    <element name="StructuredCollection"
type="mpeg7:StructuredCollectionType" maxOccurs="unbounded"/>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- DescriptionMetadataType -->
    <complexType name="DescriptionMetadataType">
        <complexContent>
            <extension base="mpeg7:HeaderType">
                <sequence>
                    <element name="Confidence" type="mpeg7:zeroToOneType" minOccurs="0"/>
                    <element name="Version" type="string" minOccurs="0"/>
                    <element name="LastUpdate" type="mpeg7:timePointType" minOccurs="0"/>
                    <element name="Comment" type="mpeg7:TextAnnotationType"
minOccurs="0"/>
                    <element name="PublicIdentifier" type="mpeg7:UniqueIDType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="PrivateIdentifier" type="string" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="Creator" type="mpeg7:CreatorType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="CreationLocation" type="mpeg7:PlaceType"
minOccurs="0"/>
                    <element name="CreationTime" type="mpeg7:timePointType"
minOccurs="0"/>
                    <element name="Instrument" type="mpeg7:CreationToolType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="Rights" type="mpeg7:RightsType" minOccurs="0"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- zeroToOneType -->
    <simpleType name="zeroToOneType">
        <restriction base="float">
            <minInclusive value="0.0"/>
            <maxInclusive value="1.0"/>
        </restriction>
    </simpleType>
    <!-- minusOneToOneType -->
    <simpleType name="minusOneToOneType">
        <restriction base="float">
            <minInclusive value="-1.0"/>
            <maxInclusive value="+1.0"/>
```

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```
        </restriction>
    </simpleType>
    <!-- nonNegativeReal -->
    <simpleType name="nonNegativeReal">
        <restriction base="double">
            <minInclusive value="0.0"/>
        </restriction>
    </simpleType>
    <!-- integerVector -->
    <simpleType name="integerVector">
        <list itemType="integer"/>
    </simpleType>
    <!-- floatVector -->
    <simpleType name="floatVector">
        <list itemType="float"/>
    </simpleType>
    <!-- IntegerMatrixType -->
    <complexType name="IntegerMatrixType">
        <simpleContent>
            <extension base="mpeg7:integerVector">
                <attribute ref="mpeg7:dim" use="required"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- FloatMatrixType -->
    <complexType name="FloatMatrixType">
        <simpleContent>
            <extension base="mpeg7:floatVector">
                <attribute ref="mpeg7:dim" use="required"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- mimeType -->
    <simpleType name="mimeType">
        <restriction base="string">
            <whiteSpace value="collapse"/>
            <pattern value='[&#x21;-&#x7f;-[\(\)&lt;&gt;@,;:\\"/\[\]\?=]]+/[&#x21;-
&#x7f;-[\(\)&lt;&gt;@,;:\\"/\[\]\?=]]+'/>
        </restriction>
    </simpleType>
    <!-- countryCode -->
    <simpleType name="countryCode">
        <restriction base="string">
            <whiteSpace value="collapse"/>
            <pattern value="[a-zA-Z]{2}"/>
        </restriction>
    </simpleType>
    <!-- regionCode -->
    <simpleType name="regionCode">
        <restriction base="string">
            <whiteSpace value="collapse"/>
            <pattern value="[a-zA-Z]{2}(-[a-zA-Z0-9]{1,3})?"/>
        </restriction>
    </simpleType>
    <!-- currencyCode -->
    <simpleType name="currencyCode">
        <restriction base="string">
            <whiteSpace value="collapse"/>
            <pattern value="[a-zA-Z]{3}"/>
        </restriction>
    </simpleType>
    <!-- referenceGrp -->
    <attributeGroup name="referenceGrp">
        <attribute name="idref" type="IDREF" use="optional"/>
        <attribute name="xpath" type="mpeg7:xPathRefType" use="optional"/>
        <attribute name="href" type="anyURI" use="optional"/>
    </attributeGroup>
    <!-- ReferenceType -->
    <complexType name="ReferenceType">
        <attributeGroup ref="mpeg7:referenceGrp"/>
    </complexType>
```


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```
    <!-- xPathType -->
    <simpleType name="xPathType">
        <restriction base="token"/>
    </simpleType>
    <!-- xPathRefType -->
    <simpleType name="xPathRefType">
        <restriction base="mpeg7:xPathType">
            <pattern
value="/?((((child::)?((\i\c*:)?(\i\c*)(\[\d+\])?))|\.|(\.\.))/)*((((child::)?((\i\c*:)
?(\i\c*)(\[\d+\])?))|\.)|((attribute::|@)((\i\c*:)?(\i\c*|\*))))"/>
        </restriction>
    </simpleType>
    <!-- xPathSelectorType -->
    <simpleType name="xPathSelectorType">
        <restriction base="mpeg7:xPathType">
            <pattern
value="(/|(((//|/)?(((child::)?((\i\c*:)?(\i\c*|\*)))|\.|\.\.)(((//|/)(((child::)?((\i\c*
:)?(\i\c*|\*)))|\.|\.\.))*))(\|/|(((//|/)?(((child::)?((\i\c*:)?(\i\c*|\*)))|\.|\.\.)(((/
/|/)(((child::)?((\i\c*:)?(\i\c*|\*)))|\.|\.\.))*))*"/>
        </restriction>
    </simpleType>
    <!-- Definition of xPathAbsoluteSelector datatype -->
    <simpleType name="xPathAbsoluteSelectorType">
        <restriction base="mpeg7:xPathSelectorType">
            <pattern
value="(/|(((//|/)(((child::)?((\i\c*:)?(\i\c*|\*)))|\.))*)(\|(/|(((//|/)(((child::)?((\i
\c*:)?(\i\c*|\*)))|\.))*))*"/>
        </restriction>
    </simpleType>
    <!-- xPathFieldType -->
    <simpleType name="xPathFieldType">
        <restriction base="mpeg7:xPathType">
            <pattern
value="(\.//)?((((child::)?((\i\c*:)?(\i\c*|\*)))|\.)/)*((((child::)?((\i\c*:)?(\i\c*|\
*)))|\.)|((attribute::|@)((\i\c*:)?(\i\c*|\*))))(\|(\.//)?((((child::)?((\i\c*:)?(\i\c*
|\*)))|\.)/)*((((child::)?((\i\c*:)?(\i\c*|\*)))|\.)|((attribute::|@)((\i\c*:)?(\i\c*|\
*)))))*"/>
        </restriction>
    </simpleType>

    <!-- Definition of xPathAbsoluteSelector datatype -->
    <simpleType name="xPathAbsoluteSelectorType">
        <restriction base="mpeg7:xPathSelectorType">
            <pattern
value="(/|(((//|/)(((child::)?((\i\c*:)?(\i\c*|\*)))|\.))*)(\|(/|(((//|/)(((child::)?((\i
\c*:)?(\i\c*|\*)))|\.))*))*"/>
        </restriction>
    </simpleType>

    <!-- UniqueIDType -->
    <complexType name="UniqueIDType">
        <simpleContent>
            <extension base="string">
                <attribute name="type" type="NMTOKEN" use="optional" default="URI"/>
                <attribute name="organization" type="NMTOKEN" use="optional"/>
                <attribute name="authority" type="NMTOKEN" use="optional"/>
                <attribute name="encoding" use="optional" default="text">
                    <simpleType>
                        <restriction base="string">
                            <enumeration value="text"/>
                            <enumeration value="base16"/>
                            <enumeration value="base64"/>
                        </restriction>
                    </simpleType>
                </attribute>
            </extension>
        </simpleContent>
    </complexType>
    <!-- TimeType -->
    <complexType name="TimeType">
        <sequence>
```

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```
            <choice>
                <element name="TimePoint" type="mpeg7:timePointType"/>
                <element name="RelTimePoint" type="mpeg7:RelTimePointType"/>
                <element name="RelIncrTimePoint" type="mpeg7:RelIncrTimePointType"/>
            </choice>
            <choice minOccurs="0">
                <element name="Duration" type="mpeg7:durationType"/>
                <element name="IncrDuration" type="mpeg7:IncrDurationType"/>
            </choice>
        </sequence>
    </complexType>
    <!-- timePointType -->
    <simpleType name="timePointType">
        <restriction base="mpeg7:basicTimePointType">
            <pattern value="(\-?\d+(\-\d{2}(\-
\d{2})?)?)?(T\d{2}(:\d{2}(:\d{2}(:\d+)?)?)?)?(F\d+)?((\-|\+)\d{2}:\d{2})?"/>
        </restriction>
    </simpleType>
    <!-- durationType -->
    <simpleType name="durationType">
        <restriction base="mpeg7:basicDurationType">
            <pattern value="\-?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?)?(\d+F)?((\-
|\+)\d{2}:\d{2}Z)?"/>
        </restriction>
    </simpleType>
    <!-- IncrDurationType -->
    <complexType name="IncrDurationType">
        <simpleContent>
            <extension base="integer">
                <attribute name="timeUnit" type="mpeg7:durationType" use="optional"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- timeOffsetType -->
    <simpleType name="timeOffsetType">
        <restriction base="mpeg7:basicDurationType">
            <pattern value="\-?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?)?(\d+F)?((\-
|\+)\d{2}:\d{2}Z)?"/>
        </restriction>
    </simpleType>
    <!-- RelTimePointType -->
    <complexType name="RelTimePointType">
        <simpleContent>
            <extension base="mpeg7:timeOffsetType">
                <attribute name="timeBase" type="mpeg7:xPathRefType" use="optional"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- RelIncrTimePointType -->
    <complexType name="RelIncrTimePointType">
        <simpleContent>
            <extension base="integer">
                <attribute name="timeUnit" type="mpeg7:durationType" use="optional"/>
                <attribute name="timeBase" type="mpeg7:xPathRefType" use="optional"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- timePropertyGrp -->
    <attributeGroup name="timePropertyGrp">
        <attribute name="timeBase" type="mpeg7:xPathRefType" use="optional"/>
        <attribute name="timeUnit" type="mpeg7:durationType" use="optional"/>
    </attributeGroup>
    <!-- MediaTimeType -->
    <complexType name="MediaTimeType">
        <sequence>
            <choice>
                <element name="MediaTimePoint" type="mpeg7:mediaTimePointType"/>
                <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType"/>
                <element name="MediaRelIncrTimePoint"
type="mpeg7:MediaRelIncrTimePointType"/>
            </choice>
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```
            <choice minOccurs="0">
                <element name="MediaDuration" type="mpeg7:mediaDurationType"/>
                <element name="MediaIncrDuration" type="mpeg7:MediaIncrDurationType"/>
            </choice>
        </sequence>
    </complexType>
    <!-- mediaTimePointType -->
    <simpleType name="mediaTimePointType">
        <restriction base="mpeg7:basicTimePointType">
            <pattern value="(\-?\d+(\-\d{2}(\-
\d{2})?)?)?(T\d{2}(:\d{2}(:\d{2}(:\d+)?)?)?)?(F\d+)?"/>
        </restriction>
    </simpleType>
    <!-- mediaDurationType -->
    <simpleType name="mediaDurationType">
        <restriction base="mpeg7:basicDurationType">
            <pattern value="\-?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?)?(\d+F)?"/>
        </restriction>
    </simpleType>
    <!-- MediaIncrDurationType -->
    <complexType name="MediaIncrDurationType">
        <simpleContent>
            <extension base="integer">
                <attribute name="mediaTimeUnit" type="mpeg7:mediaDurationType"
use="optional"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- mediaTimeOffsetType -->
    <simpleType name="mediaTimeOffsetType">
        <restriction base="mpeg7:basicDurationType">
            <pattern value="\-?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?)?(\d+F)?"/>
        </restriction>
    </simpleType>
    <!-- MediaRelTimePointType -->
    <complexType name="MediaRelTimePointType">
        <simpleContent>
            <extension base="mpeg7:mediaTimeOffsetType">
                <attribute name="mediaTimeBase" type="mpeg7:xPathRefType"
use="optional"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- MediaRelIncrTimePointType -->
    <complexType name="MediaRelIncrTimePointType">
        <simpleContent>
            <extension base="integer">
                <attribute name="mediaTimeUnit" type="mpeg7:mediaDurationType"
use="optional"/>
                <attribute name="mediaTimeBase" type="mpeg7:xPathRefType"
use="optional"/>
            </extension>
        </simpleContent>
    </complexType>

    <!-- ########################################################## -->
    <!--  Definition of mediaTimeProperty attribute group (6.4.16)  -->
    <!-- ########################################################## -->

    <!-- Definition of mediaTimePropertyGrp attribute group -->
    <attributeGroup name="mediaTimePropertyGrp">
        <attribute name="mediaTimeBase" type="mpeg7:xPathRefType" use="optional"/>
        <attribute name="mediaTimeUnit" type="mpeg7:mediaDurationType" use="optional"/>
    </attributeGroup>
    <!-- MediaLocatorType -->
    <complexType name="MediaLocatorType">
        <sequence>
            <choice minOccurs="0">
                <element name="MediaUri" type="anyURI"/>
                <element name="InlineMedia" type="mpeg7:InlineMediaType"/>
            </choice>
```

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```
            <element name="StreamID" type="nonNegativeInteger" minOccurs="0"/>
        </sequence>
    </complexType>
    <!-- InlineMediaType -->
    <complexType name="InlineMediaType">
        <choice>
            <element name="MediaData16" type="hexBinary"/>
            <element name="MediaData64" type="base64Binary"/>
        </choice>
        <attribute name="type" type="mpeg7:mimeType" use="required"/>
    </complexType>
    <!-- TemporalSegmentLocatorType -->
    <complexType name="TemporalSegmentLocatorType">
        <complexContent>
            <extension base="mpeg7:MediaLocatorType">
                <choice minOccurs="0">
                    <element name="MediaTime" type="mpeg7:MediaTimeType"/>
                    <element name="BytePosition">
                        <complexType>
                            <attribute name="offset" type="nonNegativeInteger"
use="required"/>
                            <attribute name="length" type="positiveInteger"
use="optional"/>
                        </complexType>
                    </element>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- ImageLocatorType -->
    <complexType name="ImageLocatorType">
        <complexContent>
            <extension base="mpeg7:MediaLocatorType">
                <choice minOccurs="0">
                    <element name="MediaTimePoint" type="mpeg7:mediaTimePointType"/>
                    <element name="MediaRelTimePoint" type="mpeg7:MediaRelTimePointType"/>
                    <element name="MediaRelIncrTimePoint"
type="mpeg7:MediaRelIncrTimePointType"/>
                    <element name="BytePosition">
                        <complexType>
                            <attribute name="offset" type="nonNegativeInteger"
use="required"/>
                            <attribute name="length" type="positiveInteger"
use="optional"/>
                        </complexType>
                    </element>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- TextualBaseType -->
    <complexType name="TextualBaseType" abstract="true">
        <simpleContent>
            <extension base="string">
                <attribute ref="xml:lang" use="optional"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- TextualType -->
    <complexType name="TextualType">
        <simpleContent>
            <extension base="mpeg7:TextualBaseType"/>
        </simpleContent>
    </complexType>
    <!-- TextAnnotationType -->
    <complexType name="TextAnnotationType">
        <choice maxOccurs="unbounded">
            <element name="FreeTextAnnotation" type="mpeg7:TextualType"/>
            <element name="StructuredAnnotation" type="mpeg7:StructuredAnnotationType"/>
            <element name="DependencyStructure" type="mpeg7:DependencyStructureType"/>
            <element name="KeywordAnnotation" type="mpeg7:KeywordAnnotationType"/>
```


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```
        </choice>
        <attribute name="relevance" type="mpeg7:zeroToOneType" use="optional"/>
        <attribute name="confidence" type="mpeg7:zeroToOneType" use="optional"/>
        <attribute ref="xml:lang"/>
    </complexType>
    <!-- StructuredAnnotationType -->
    <complexType name="StructuredAnnotationType">
        <sequence>
            <element name="Who" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
            <element name="WhatObject" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
            <element name="WhatAction" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
            <element name="Where" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
            <element name="When" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
            <element name="Why" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
            <element name="How" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
        <attribute ref="xml:lang" use="optional"/>
    </complexType>
    <!-- KeywordAnnotationType -->
    <complexType name="KeywordAnnotationType">
        <sequence>
            <element name="Keyword" maxOccurs="unbounded">
                <complexType>
                    <simpleContent>
                        <extension base="mpeg7:TextualType">
                            <attribute name="type" use="optional" default="main">
                                <simpleType>
                                    <restriction base="NMTOKEN">
                                        <enumeration value="main"/>
                                        <enumeration value="secondary"/>
                                        <enumeration value="other"/>
                                    </restriction>
                                </simpleType>
                            </attribute>
                        </extension>
                    </simpleContent>
                </complexType>
            </element>
        </sequence>
        <attribute ref="xml:lang" use="optional"/>
    </complexType>
    <!-- DependencyStructureType -->
    <complexType name="DependencyStructureType">
        <sequence>
            <element name="Sentence" type="mpeg7:DependencyStructurePhraseType"
maxOccurs="unbounded"/>
        </sequence>
        <attribute ref="xml:lang" use="optional"/>
    </complexType>
    <!-- DependencyStructurePhraseType -->
    <complexType name="DependencyStructurePhraseType">
        <sequence>
            <choice minOccurs="0" maxOccurs="unbounded">
                <element name="Quotation" type="mpeg7:DependencyStructurePhraseType"/>
                <element name="Phrase" type="mpeg7:DependencyStructurePhraseType"/>
            </choice>
            <choice>
                <element name="Head" type="mpeg7:WordFormType"/>
                <element name="CompoundHead"
type="mpeg7:NonDependencyStructurePhraseType"/>
            </choice>
            <choice minOccurs="0" maxOccurs="unbounded">
                <element name="Quotation" type="mpeg7:DependencyStructurePhraseType"/>
                <element name="Phrase" type="mpeg7:DependencyStructurePhraseType"/>
```

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```
            </choice>
        </sequence>
        <attribute name="id" type="ID" use="optional"/>
        <attribute name="equal" type="IDREF" use="optional"/>
        <attribute name="operator" use="optional">
            <simpleType>
                <union memberTypes="mpeg7:dependencyOperatorType
mpeg7:termReferenceType"/>
            </simpleType>
        </attribute>
        <attribute name="functionWord" type="string" use="optional"/>
        <attribute name="synthesis" type="NMTOKEN" use="optional" fixed="dependency"/>
    </complexType>
    <!-- WordFormType -->
    <complexType name="WordFormType">
        <simpleContent>
            <extension base="string">
                <attribute name="terms" use="optional">
                    <simpleType>
                        <list itemType="mpeg7:termReferenceType"/>
                    </simpleType>
                </attribute>
                <attribute name="id" type="ID" use="optional"/>
                <attribute name="equal" type="IDREF" use="optional"/>
                <attribute name="type" use="optional">
                    <simpleType>
                        <list>
                            <simpleType>
                                <union>
                                    <simpleType>
                                        <restriction base="NMTOKEN">
                                            <enumeration value="noun"/>
                                            <enumeration value="pronoun"/>
                                            <enumeration value="adjective"/>
                                            <enumeration value="verb"/>
                                            <enumeration value="adverb"/>
                                            <enumeration value="conjunction"/>
                                            <enumeration value="preposition"/>
                                            <enumeration value="postposition"/>
                                            <enumeration value="article"/>
                                            <enumeration value="interjection"/>
                                        </restriction>
                                    </simpleType>
                                    <simpleType>
                                        <restriction base="mpeg7:termReferenceType"/>
                                    </simpleType>
                                </union>
                            </simpleType>
                        </list>
                    </simpleType>
                </attribute>
                <attribute name="baseForm" type="string" use="optional"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- NonDependencyStructurePhraseType -->
    <complexType name="NonDependencyStructurePhraseType">
        <choice minOccurs="2" maxOccurs="unbounded">
            <element name="Quotation" type="mpeg7:DependencyStructurePhraseType"/>
            <element name="Phrase" type="mpeg7:DependencyStructurePhraseType"/>
            <element name="Word" type="mpeg7:WordFormType"/>
            <element name="NonDependencyPhrase"
type="mpeg7:NonDependencyStructurePhraseType"/>
        </choice>
        <attribute name="id" type="ID" use="optional"/>
        <attribute name="equal" type="IDREF" use="optional"/>
        <attribute name="synthesis" use="optional" default="unspecified">
            <simpleType>
                <restriction base="NMTOKEN">
                    <enumeration value="unspecified"/>
                    <enumeration value="coordination"/>
```


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```
            </restriction>
        </simpleType>
    </attribute>
</complexType>
<!-- dependencyOperatorType -->
<simpleType name="dependencyOperatorType">
    <union>
        <simpleType>
            <restriction base="NMTOKEN">
                <enumeration value="subject"/>
                <enumeration value="object"/>
                <enumeration value="indirectObject"/>
                <enumeration value="predicate"/>
                <enumeration value="expletive"/>
                <enumeration value="nonRestrictive"/>
            </restriction>
        </simpleType>
    </union>
</simpleType>
<!-- termRelationQualifierType -->
<simpleType name="termRelationQualifierType">
    <union>
        <simpleType>
            <restriction base="NMTOKEN">
                <enumeration value="NT"/>
                <enumeration value="BT"/>
                <enumeration value="RT"/>
                <enumeration value="US"/>
                <enumeration value="UF"/>
            </restriction>
        </simpleType>
        <simpleType>
            <restriction base="mpeg7:termReferenceType"/>
        </simpleType>
    </union>
</simpleType>
<!-- InlineTermDefinitionType -->
<complexType name="InlineTermDefinitionType" abstract="true">
    <sequence>
        <element name="Name" minOccurs="0" maxOccurs="unbounded">
            <complexType>
                <simpleContent>
                    <extension base="mpeg7:TextualType">
                        <attribute name="preferred" type="boolean" use="optional"/>
                    </extension>
                </simpleContent>
            </complexType>
        </element>
        <element name="Definition" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
        <element name="Term" minOccurs="0" maxOccurs="unbounded">
            <complexType>
                <complexContent>
                    <extension base="mpeg7:InlineTermDefinitionType">
                        <attribute name="relation"
type="mpeg7:termRelationQualifierType" use="optional" default="NT"/>
                        <attribute name="termID" type="NMTOKEN"/>
                    </extension>
                </complexContent>
            </complexType>
        </element>
    </sequence>
</complexType>
<!-- TermUseType -->
<complexType name="TermUseType">
    <complexContent>
        <extension base="mpeg7:InlineTermDefinitionType">
            <attribute name="href" type="mpeg7:termReferenceType" use="optional"/>
        </extension>
    </complexContent>
</complexType>
```

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```
    <!-- ControlledTermUseType -->
    <complexType name="ControlledTermUseType">
        <complexContent>
            <extension base="mpeg7:InlineTermDefinitionType">
                <attribute name="href" type="mpeg7:termReferenceType" use="required"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- termReferenceType -->
    <simpleType name="termReferenceType">
        <union>
            <simpleType>
                <restriction base="NMTOKEN">
                    <whiteSpace value="collapse"/>
                    <pattern value=":[^:]+:[^:]+"/>
                </restriction>
            </simpleType>
            <simpleType>
                <restriction base="anyURI"/>
            </simpleType>
        </union>
    </simpleType>
    <!-- AgentType -->
    <complexType name="AgentType" abstract="true">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="Icon" type="mpeg7:MediaLocatorType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- PersonType -->
    <complexType name="PersonType">
        <complexContent>
            <extension base="mpeg7:AgentType">
                <sequence>
                    <choice maxOccurs="unbounded">
                        <element name="Name" type="mpeg7:PersonNameType"/>
                        <element name="NameTerm" type="mpeg7:ControlledTermUseType"/>
                    </choice>
                    <element name="Affiliation" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <choice>
                                <element name="Organization" type="mpeg7:OrganizationType"/>
                                <element name="OrganizationRef" type="mpeg7:ReferenceType"/>
                                <element name="PersonGroup" type="mpeg7:PersonGroupType"/>
                                <element name="PersonGroupRef" type="mpeg7:ReferenceType"/>
                            </choice>
                        </complexType>
                    </element>
                    <element name="Citizenship" type="mpeg7:countryCode" minOccurs="0"
maxOccurs="unbounded"/>
                    <choice minOccurs="0">
                        <element name="Address" type="mpeg7:PlaceType"/>
                        <element name="AddressRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <element name="ElectronicAddress" type="mpeg7:ElectronicAddressType"
minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- PersonGroupType -->
    <complexType name="PersonGroupType">
        <complexContent>
            <extension base="mpeg7:AgentType">
                <sequence>
                    <element name="Name" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
```

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```
                        <simpleContent>
                            <extension base="mpeg7:TextualType">
                                <attribute name="type" use="optional">
                                    <simpleType>
                                        <restriction base="NMTOKEN">
                                            <enumeration value="former"/>
                                            <enumeration value="variant"/>
                                            <enumeration value="main"/>
                                        </restriction>
                                    </simpleType>
                                </attribute>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="NameTerm" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:ControlledTermUseType">
                                <attribute name="type" use="optional">
                                    <simpleType>
                                        <restriction base="NMTOKEN">
                                            <enumeration value="former"/>
                                            <enumeration value="variant"/>
                                            <enumeration value="main"/>
                                        </restriction>
                                    </simpleType>
                                </attribute>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="Kind" type="mpeg7:TermUseType" minOccurs="0"/>
                <choice minOccurs="0" maxOccurs="unbounded">
                    <element name="Member" type="mpeg7:PersonType"/>
                    <element name="MemberRef" type="mpeg7:ReferenceType"/>
                </choice>
                <choice minOccurs="0">
                    <element name="Jurisdiction" type="mpeg7:PlaceType"/>
                    <element name="JurisdictionRef" type="mpeg7:ReferenceType"/>
                </choice>
                <choice minOccurs="0">
                    <element name="Address" type="mpeg7:PlaceType"/>
                    <element name="AddressRef" type="mpeg7:ReferenceType"/>
                </choice>
                <element name="ElectronicAddress" type="mpeg7:ElectronicAddressType"
minOccurs="0"/>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- OrganizationType -->
<complexType name="OrganizationType">
    <complexContent>
        <extension base="mpeg7:AgentType">
            <sequence>
                <element name="Name" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:TextualType">
                                <attribute name="type" use="optional">
                                    <simpleType>
                                        <restriction base="NMTOKEN">
                                            <enumeration value="former"/>
                                            <enumeration value="variant"/>
                                            <enumeration value="main"/>
                                        </restriction>
                                    </simpleType>
                                </attribute>
                            </extension>
                        </simpleContent>
```

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```
                    </complexType>
                </element>
                <element name="NameTerm" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:ControlledTermUseType">
                                <attribute name="type" use="optional">
                                    <simpleType>
                                        <restriction base="NMTOKEN">
                                            <enumeration value="former"/>
                                            <enumeration value="variant"/>
                                            <enumeration value="main"/>
                                        </restriction>
                                    </simpleType>
                                </attribute>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="Kind" type="mpeg7:TermUseType" minOccurs="0"/>
                <choice minOccurs="0" maxOccurs="unbounded">
                    <element name="Contact" type="mpeg7:AgentType"/>
                    <element name="ContactRef" type="mpeg7:ReferenceType"/>
                </choice>
                <choice minOccurs="0">
                    <element name="Jurisdiction" type="mpeg7:PlaceType"/>
                    <element name="JurisdictionRef" type="mpeg7:ReferenceType"/>
                </choice>
                <choice minOccurs="0">
                    <element name="Address" type="mpeg7:PlaceType"/>
                    <element name="AddressRef" type="mpeg7:ReferenceType"/>
                </choice>
                <element name="ElectronicAddress" type="mpeg7:ElectronicAddressType"
minOccurs="0"/>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- PersonNameType -->
<complexType name="PersonNameType">
    <sequence>
        <choice maxOccurs="unbounded">
            <element name="GivenName" type="mpeg7:NameComponentType"/>
            <element name="FamilyName" type="mpeg7:NameComponentType" minOccurs="0"/>
            <element name="Title" type="mpeg7:NameComponentType" minOccurs="0"/>
            <element name="Numeration" type="string" minOccurs="0"/>
        </choice>
    </sequence>
    <attribute name="dateFrom" type="mpeg7:timePointType" use="optional"/>
    <attribute name="dateTo" type="mpeg7:timePointType" use="optional"/>
    <attribute name="type" use="optional">
        <simpleType>
            <restriction base="NMTOKEN">
                <enumeration value="former"/>
                <enumeration value="variant"/>
                <enumeration value="main"/>
            </restriction>
        </simpleType>
    </attribute>
    <attribute ref="xml:lang" use="optional"/>
</complexType>
<!-- NameComponentType -->
<complexType name="NameComponentType">
    <simpleContent>
        <extension base="mpeg7:TextualBaseType">
            <attribute name="initial" type="string" use="optional"/>
            <attribute name="abbrev" type="string" use="optional"/>
        </extension>
    </simpleContent>
</complexType>
<!-- ElectronicAddressType -->
```

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```
    <complexType name="ElectronicAddressType">
        <sequence>
            <element name="Telephone" type="string" minOccurs="0" maxOccurs="unbounded"/>
            <element name="Fax" type="string" minOccurs="0" maxOccurs="unbounded"/>
            <element name="Email" type="string" minOccurs="0" maxOccurs="unbounded"/>
            <element name="Url" type="anyURI" minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <!-- PlaceType -->
    <complexType name="PlaceType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="Name" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="NameTerm" type="mpeg7:ControlledTermUseType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="Role" type="mpeg7:TermUseType" minOccurs="0"/>
                    <element name="GeographicPosition" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="Point" type="mpeg7:GeographicPointType"/>
                            </sequence>
                            <attribute name="datum" type="string" use="optional"/>
                        </complexType>
                    </element>
                    <element name="AstronomicalBody" type="mpeg7:TermUseType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="Region" type="mpeg7:regionCode" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="AdministrativeUnit" minOccurs="0"
maxOccurs="unbounded">
                        <complexType>
                            <simpleContent>
                                <extension base="string">
                                    <attribute name="type" type="string" use="optional"/>
                                </extension>
                            </simpleContent>
                        </complexType>
                    </element>
                    <element name="PostalAddress" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="AddressLine" type="mpeg7:TextualType"
maxOccurs="unbounded"/>
                                <element name="PostingIdentifier" type="mpeg7:TextualType"
minOccurs="0"/>
                            </sequence>
                            <attribute ref="xml:lang" use="optional"/>
                        </complexType>
                    </element>
                    <element name="InternalCoordinates" type="string" minOccurs="0"/>
                </sequence>
                <attribute ref="xml:lang" use="optional"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- GeographicPointType -->
    <complexType name="GeographicPointType">
        <attribute name="longitude" use="required">
            <simpleType>
                <restriction base="double">
                    <minInclusive value="-180.0"/>
                    <maxInclusive value="180.0"/>
                </restriction>
            </simpleType>
        </attribute>
        <attribute name="latitude" use="required">
            <simpleType>
                <restriction base="double">
                    <minInclusive value="-90.0"/>
```

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```
                <maxInclusive value="90.0"/>
            </restriction>
        </simpleType>
    </attribute>
    <attribute name="altitude" type="double" use="optional"/>
</complexType>
<!-- GraphType -->
<complexType name="GraphType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <choice minOccurs="0" maxOccurs="unbounded">
                <element name="Node">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:ReferenceType">
                                <sequence>
                                    <element name="Name" type="mpeg7:TermUseType"
minOccurs="0"/>
                                </sequence>
                                <attribute name="id" type="ID" use="optional"/>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="Relation" type="mpeg7:RelationType"/>
            </choice>
        </extension>
    </complexContent>
</complexType>
<!-- RelationType -->
<complexType name="RelationType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <attribute name="type" type="mpeg7:termReferenceType" use="optional"/>
            <attribute name="source" use="optional">
                <simpleType>
                    <list itemType="anyURI"/>
                </simpleType>
            </attribute>
            <attribute name="target">
                <simpleType>
                    <list itemType="anyURI"/>
                </simpleType>
            </attribute>
            <attribute name="directed" type="boolean" use="optional" default="true"/>
            <attribute name="strength" type="mpeg7:zeroToOneType" use="optional"
default="1.0"/>
        </extension>
    </complexContent>
</complexType>
<!-- OrderingKeyType -->
<complexType name="OrderingKeyType">
    <complexContent>
        <extension base="mpeg7:HeaderType">
            <sequence>
                <element name="Selector">
                    <complexType>
                        <attribute name="xpath" type="mpeg7:xPathSelectorType"/>
                    </complexType>
                </element>
                <element name="Field" maxOccurs="unbounded">
                    <complexType>
                        <attribute name="xpath" type="mpeg7:xPathFieldType"/>
                    </complexType>
                </element>
            </sequence>
            <attribute name="name" type="string" use="optional"/>
            <attribute name="semantics" type="string" use="optional"/>
            <attribute name="direction" use="optional" default="descending">
                <simpleType>
                    <restriction base="NMTOKEN">
```

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```
                        <enumeration value="descending"/>
                        <enumeration value="ascending"/>
                    </restriction>
                </simpleType>
            </attribute>
        </extension>
    </complexContent>
</complexType>
<!-- AffectiveType -->
<complexType name="AffectiveType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="Type" type="mpeg7:TermUseType"/>
                <element name="Score" minOccurs="2" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="mpeg7:minusOneToOneType">
                                <attributeGroup ref="mpeg7:referenceGrp"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- MediaInformationType -->
<complexType name="MediaInformationType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="MediaIdentification"
type="mpeg7:MediaIdentificationType" minOccurs="0"/>
                <element name="MediaProfile" type="mpeg7:MediaProfileType"
maxOccurs="unbounded"/>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- MediaIdentificationType -->
<complexType name="MediaIdentificationType">
    <complexContent>
        <extension base="mpeg7:DType">
            <sequence>
                <element name="EntityIdentifier" type="mpeg7:UniqueIDType"/>
                <element name="AudioDomain" type="mpeg7:ControlledTermUseType"
minOccurs="0" maxOccurs="unbounded"/>
                <element name="VideoDomain" type="mpeg7:ControlledTermUseType"
minOccurs="0" maxOccurs="unbounded"/>
                <element name="ImageDomain" type="mpeg7:ControlledTermUseType"
minOccurs="0" maxOccurs="unbounded"/>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- MediaProfileType -->
<complexType name="MediaProfileType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="ComponentMediaProfile" type="mpeg7:MediaProfileType"
minOccurs="0" maxOccurs="unbounded"/>
                <element name="MediaFormat" type="mpeg7:MediaFormatType"
minOccurs="0"/>
                <element name="MediaTranscodingHints"
type="mpeg7:MediaTranscodingHintsType" minOccurs="0"/>
                <element name="MediaQuality" type="mpeg7:MediaQualityType"
minOccurs="0"/>
                <element name="MediaInstance" type="mpeg7:MediaInstanceType"
minOccurs="0" maxOccurs="unbounded"/>
```

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```
                </sequence>
                <attribute name="master" type="boolean" use="optional" default="false"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- MediaFormatType -->
    <complexType name="MediaFormatType">
        <complexContent>
            <extension base="mpeg7:DType">
                <sequence>
                    <element name="Content" type="mpeg7:ControlledTermUseType"/>
                    <element name="Medium" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                    <element name="FileFormat" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                    <element name="FileSize" type="nonNegativeInteger" minOccurs="0"/>
                    <element name="System" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                    <element name="Bandwidth" type="float" minOccurs="0"/>
                    <element name="BitRate" minOccurs="0">
                        <complexType>
                            <simpleContent>
                                <extension base="nonNegativeInteger">
                                    <attribute name="variable" type="boolean" use="optional"
default="false"/>
                                    <attribute name="minimum" type="nonNegativeInteger"
use="optional"/>
                                    <attribute name="average" type="nonNegativeInteger"
use="optional"/>
                                    <attribute name="maximum" type="nonNegativeInteger"
use="optional"/>
                                </extension>
                            </simpleContent>
                        </complexType>
                    </element>
                    <element name="TargetChannelBitRate" type="nonNegativeInteger"
minOccurs="0"/>
                    <element name="ScalableCoding" minOccurs="0">
                        <simpleType>
                            <union>
                                <simpleType>
                                    <restriction base="NMTOKEN">
                                        <enumeration value="spatial"/>
                                        <enumeration value="temporal"/>
                                        <enumeration value="snr"/>
                                        <enumeration value="fgs"/>
                                    </restriction>
                                </simpleType>
                                <simpleType>
                                    <restriction base="mpeg7:termReferenceType"/>
                                </simpleType>
                            </union>
                        </simpleType>
                    </element>
                    <element name="VisualCoding" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="Format" minOccurs="0">
                                    <complexType>
                                        <complexContent>
                                            <extension base="mpeg7:ControlledTermUseType">
                                                <attribute name="colorDomain" use="optional"
default="color">
                                                    <simpleType>
                                                        <union>
                                                            <simpleType>
                                                                <restriction base="NMTOKEN">
                                                                    <enumeration
value="binary"/>
                                                                    <enumeration
value="color"/>
```


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```
                                                                    <enumeration
value="graylevel"/>
                                                                    <enumeration
value="colorized"/>
                                                                </restriction>
                                                            </simpleType>
                                                            <simpleType>
                                                                <restriction
base="mpeg7:termReferenceType"/>
                                                            </simpleType>
                                                        </union>
                                                    </simpleType>
                                                </attribute>
                                            </extension>
                                        </complexContent>
                                    </complexType>
                                </element>
                                <element name="Pixel" minOccurs="0">
                                    <complexType>
                                        <attribute name="resolution"
type="nonNegativeInteger" use="optional"/>
                                        <attribute name="aspectRatio"
type="mpeg7:nonNegativeReal" use="optional"/>
                                        <attribute name="bitsPer" type="nonNegativeInteger"
use="optional"/>
                                    </complexType>
                                </element>
                                <element name="Frame" minOccurs="0">
                                    <complexType>
                                        <attribute name="height" type="nonNegativeInteger"
use="optional"/>
                                        <attribute name="width" type="nonNegativeInteger"
use="optional"/>
                                        <attribute name="aspectRatio"
type="mpeg7:nonNegativeReal" use="optional"/>
                                        <attribute name="rate" type="mpeg7:nonNegativeReal"
use="optional"/>
                                        <attribute name="structure" use="optional">
                                            <simpleType>
                                                <restriction base="NMTOKEN">
                                                    <enumeration value="progressive"/>
                                                    <enumeration value="interlaced"/>
                                                </restriction>
                                            </simpleType>
                                        </attribute>
                                    </complexType>
                                </element>
                                <element name="ColorSampling" type="mpeg7:ColorSamplingType"
minOccurs="0"/>
                            </sequence>
                        </complexType>
                    </element>
                    <element name="AudioCoding" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="Format" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                                <element name="AudioChannels" minOccurs="0">
                                    <complexType>
                                        <simpleContent>
                                            <extension base="nonNegativeInteger">
                                                <attribute name="front"
type="nonNegativeInteger" use="optional"/>
                                                <attribute name="side"
type="nonNegativeInteger" use="optional"/>
                                                <attribute name="rear"
type="nonNegativeInteger" use="optional"/>
                                                <attribute name="lfe"
type="nonNegativeInteger" use="optional"/>
                                                <attribute name="track"
type="nonNegativeInteger" use="optional"/>
```

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```
                                    </extension>
                                </simpleContent>
                            </complexType>
                        </element>
                        <element name="Sample" minOccurs="0">
                            <complexType>
                                <attribute name="rate" type="mpeg7:nonNegativeReal"
use="optional"/>
                                <attribute name="bitsPer" type="nonNegativeInteger"
use="optional"/>
                            </complexType>
                        </element>
                        <element name="Emphasis" minOccurs="0">
                            <simpleType>
                                <union>
                                    <simpleType>
                                        <restriction base="NMTOKEN">
                                            <enumeration value="none"/>
                                            <enumeration
value="50over15Microseconds"/>
                                            <enumeration value="ccittJ17"/>
                                        </restriction>
                                    </simpleType>
                                    <simpleType>
                                        <restriction base="mpeg7:termReferenceType"/>
                                    </simpleType>
                                </union>
                            </simpleType>
                        </element>
                        <element name="Presentation"
type="mpeg7:ControlledTermUseType" minOccurs="0"/>
                    </sequence>
                </complexType>
            </element>
            <element name="SceneCodingFormat" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
            <element name="GraphicsCodingFormat"
type="mpeg7:ControlledTermUseType" minOccurs="0"/>
            <element name="OtherCodingFormat" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
        </sequence>
    </extension>
</complexContent>
</complexType>
<!-- ColorSamplingType -->
<complexType name="ColorSamplingType">
    <complexContent>
        <extension base="mpeg7:DType">
            <sequence>
                <element name="Lattice" minOccurs="0">
                    <complexType>
                        <attribute name="width" type="positiveInteger" use="required"/>
                        <attribute name="height" type="positiveInteger"
use="required"/>
                    </complexType>
                </element>
                <element name="Field" maxOccurs="unbounded">
                    <complexType>
                        <sequence>
                            <element name="Component" maxOccurs="unbounded">
                                <complexType>
                                    <complexContent>
                                        <extension base="mpeg7:TermUseType">
                                            <sequence>
                                                <element name="Offset" minOccurs="0">
                                                    <complexType>
                                                        <attribute name="horizontal"
type="mpeg7:nonNegativeReal" use="required"/>
                                                        <attribute name="vertical"
type="mpeg7:nonNegativeReal" use="required"/>
                                                    </complexType>
```


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```
                                                    </element>
                                                    <element name="Period" minOccurs="0">
                                                        <complexType>
                                                            <attribute name="horizontal"
type="mpeg7:nonNegativeReal" use="required"/>
                                                            <attribute name="vertical"
type="mpeg7:nonNegativeReal" use="required"/>
                                                        </complexType>
                                                    </element>
                                                </sequence>
                                            </extension>
                                        </complexContent>
                                    </complexType>
                                </element>
                            </sequence>
                            <attribute name="temporalOrder" type="nonNegativeInteger"
use="optional"/>
                            <attribute name="positionalOrder" type="nonNegativeInteger"
use="optional"/>
                        </complexType>
                    </element>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- MediaTranscodingHintsType -->
    <complexType name="MediaTranscodingHintsType">
        <complexContent>
            <extension base="mpeg7:DType">
                <sequence>
                    <element name="MotionHint" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="MotionRange" minOccurs="0">
                                    <complexType>
                                        <attribute name="xLeft" type="nonNegativeInteger"
use="required"/>
                                        <attribute name="xRight" type="nonNegativeInteger"
use="required"/>
                                        <attribute name="yDown" type="nonNegativeInteger"
use="required"/>
                                        <attribute name="yUp" type="nonNegativeInteger"
use="required"/>
                                    </complexType>
                                </element>
                            </sequence>
                            <attribute name="uncompensability" type="mpeg7:zeroToOneType"
use="optional"/>
                            <attribute name="intensity" type="mpeg7:zeroToOneType"
use="optional"/>
                        </complexType>
                    </element>
                    <element name="ShapeHint" minOccurs="0">
                        <complexType>
                            <attribute name="shapeChange" type="float" use="optional"/>
                            <attribute name="numOfNonTranspBlocks"
type="mpeg7:nonNegativeReal" use="optional"/>
                        </complexType>
                    </element>
                    <element name="CodingHints" minOccurs="0">
                        <complexType>
                            <attribute name="avgQuantScale" type="mpeg7:nonNegativeReal"
use="optional"/>
                            <attribute name="intraFrameDistance" type="nonNegativeInteger"
use="optional"/>
                            <attribute name="anchorFrameDistance" type="positiveInteger"
use="optional"/>
                        </complexType>
                    </element>
                </sequence>
                <attribute name="difficulty" type="mpeg7:zeroToOneType" use="optional"/>
```

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```
                <attribute name="importance" type="mpeg7:zeroToOneType" use="optional"/>
                <attribute name="spatialResolutionHint" type="mpeg7:zeroToOneType"
use="optional"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- MediaQualityType -->
    <complexType name="MediaQualityType">
        <complexContent>
            <extension base="mpeg7:DType">
                <sequence>
                    <element name="QualityRating" maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:RatingType">
                                    <attribute name="type" use="required">
                                        <simpleType>
                                            <restriction base="NMTOKEN">
                                                <enumeration value="subjective"/>
                                                <enumeration value="objective"/>
                                            </restriction>
                                        </simpleType>
                                    </attribute>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                    <element name="RatingSource" type="mpeg7:AgentType" minOccurs="0"/>
                    <element name="RatingInformationLocator" type="mpeg7:ReferenceType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="PerceptibleDefects" minOccurs="0">
                        <complexType>
                            <sequence>
                                <element name="VisualDefects"
type="mpeg7:ControlledTermUseType" minOccurs="0" maxOccurs="unbounded"/>
                                <element name="AudioDefects"
type="mpeg7:ControlledTermUseType" minOccurs="0" maxOccurs="unbounded"/>
                            </sequence>
                        </complexType>
                    </element>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- RatingType -->
    <complexType name="RatingType">
        <sequence>
            <element name="RatingValue" type="float"/>
            <element name="RatingScheme">
                <complexType>
                    <complexContent>
                        <extension base="mpeg7:TermUseType">
                            <attribute name="best" type="float" use="optional"/>
                            <attribute name="worst" type="float" use="optional"/>
                            <attribute name="style" use="required">
                                <simpleType>
                                    <restriction base="NMTOKEN">
                                        <enumeration value="higherBetter"/>
                                        <enumeration value="lowerBetter"/>
                                    </restriction>
                                </simpleType>
                            </attribute>
                        </extension>
                    </complexContent>
                </complexType>
            </element>
        </sequence>
    </complexType>
    <!-- MediaInstanceType -->
    <complexType name="MediaInstanceType">
        <complexContent>
```


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```
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="InstanceIdentifier" type="mpeg7:UniqueIDType"/>
                    <choice>
                        <element name="MediaLocator" type="mpeg7:MediaLocatorType"/>
                        <element name="LocationDescription" type="mpeg7:TextualType"/>
                    </choice>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- CreationInformationType -->
    <complexType name="CreationInformationType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="Creation" type="mpeg7:CreationType"/>
                    <element name="Classification" type="mpeg7:ClassificationType"
minOccurs="0"/>
                    <element name="RelatedMaterial" type="mpeg7:RelatedMaterialType"
minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- CreationType -->
    <complexType name="CreationType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="Title" type="mpeg7:TitleType" maxOccurs="unbounded"/>
                    <element name="TitleMedia" type="mpeg7:TitleMediaType" minOccurs="0"/>
                    <element name="Abstract" type="mpeg7:TextAnnotationType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="Creator" type="mpeg7:CreatorType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="CreationCoordinates" minOccurs="0"
maxOccurs="unbounded">
                        <complexType>
                            <sequence>
                                <element name="Location" type="mpeg7:PlaceType"
minOccurs="0"/>
                                <element name="Date" type="mpeg7:TimeType" minOccurs="0"/>
                            </sequence>
                        </complexType>
                    </element>
                    <element name="CreationTool" type="mpeg7:CreationToolType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="CopyrightString" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- TitleType -->
    <complexType name="TitleType">
        <simpleContent>
            <extension base="mpeg7:TextualBaseType">
                <attribute name="type" use="optional" default="main">
                    <simpleType>
                        <union>
                            <simpleType>
                                <restriction base="NMTOKEN">
                                    <enumeration value="main"/>
                                    <enumeration value="secondary"/>
                                    <enumeration value="alternative"/>
                                    <enumeration value="original"/>
                                    <enumeration value="popular"/>
                                    <enumeration value="opusNumber"/>
                                    <enumeration value="songTitle"/>
                                    <enumeration value="albumTitle"/>
```

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```
                                <enumeration value="seriesTitle"/>
                                <enumeration value="episodeTitle"/>
                            </restriction>
                        </simpleType>
                        <simpleType>
                            <restriction base="mpeg7:termReferenceType"/>
                        </simpleType>
                    </union>
                </simpleType>
            </attribute>
        </extension>
    </simpleContent>
</complexType>
<!-- TitleMediaType -->
<complexType name="TitleMediaType">
    <sequence>
        <element name="TitleImage" type="mpeg7:ImageLocatorType" minOccurs="0"/>
        <element name="TitleVideo" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
        <element name="TitleAudio" type="mpeg7:TemporalSegmentLocatorType"
minOccurs="0"/>
    </sequence>
</complexType>
<!-- CreatorType -->
<complexType name="CreatorType">
    <complexContent>
        <extension base="mpeg7:MediaAgentType">
            <sequence>
                <element name="Character" type="mpeg7:PersonNameType" minOccurs="0"
maxOccurs="unbounded"/>
                <element name="Instrument" type="mpeg7:CreationToolType" minOccurs="0"
maxOccurs="unbounded"/>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- MediaAgentType -->
<complexType name="MediaAgentType">
    <sequence>
        <element name="Role" type="mpeg7:ControlledTermUseType"/>
        <choice>
            <element name="Agent" type="mpeg7:AgentType"/>
            <element name="AgentRef" type="mpeg7:ReferenceType"/>
        </choice>
    </sequence>
</complexType>
<!-- CreationToolType -->
<complexType name="CreationToolType">
    <sequence>
        <element name="Tool" type="mpeg7:TermUseType"/>
        <element name="Setting" minOccurs="0" maxOccurs="unbounded">
            <complexType>
                <attribute name="name" type="string" use="required"/>
                <attribute name="value" type="string" use="required"/>
            </complexType>
        </element>
    </sequence>
</complexType>
<!-- ClassificationType -->
<complexType name="ClassificationType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="Form" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                <element name="Genre" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <complexContent>
                            <extension base="mpeg7:ControlledTermUseType">
                                <attribute name="type" use="optional" default="main">
                                    <simpleType>
```


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```
                                        <restriction base="NMTOKEN">
                                            <enumeration value="main"/>
                                            <enumeration value="secondary"/>
                                        </restriction>
                                    </simpleType>
                                </attribute>
                            </extension>
                        </complexContent>
                    </complexType>
                </element>
                <element name="Subject" type="mpeg7:TextAnnotationType"
minOccurs="0"/>
                <element name="Purpose" type="mpeg7:ControlledTermUseType"
minOccurs="0" maxOccurs="unbounded"/>
                <element name="Language" type="mpeg7:ExtendedLanguageType"
minOccurs="0" maxOccurs="unbounded"/>
                <element name="CaptionLanguage" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="language">
                                <attribute name="closed" type="boolean" use="optional"
default="true"/>
                                <attribute name="supplemental" type="boolean"
use="optional" default="false"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="SignLanguage" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <simpleContent>
                            <extension base="language">
                                <attribute name="primary" type="boolean"
use="optional"/>
                                <attribute name="translation" type="boolean"
use="optional"/>
                            </extension>
                        </simpleContent>
                    </complexType>
                </element>
                <element name="Release" minOccurs="0">
                    <complexType>
                        <sequence>
                            <element name="Region" type="mpeg7:regionCode" minOccurs="0"
maxOccurs="unbounded"/>
                        </sequence>
                        <attribute name="date" type="mpeg7:timePointType"
use="optional"/>
                    </complexType>
                </element>
                <element name="Target" minOccurs="0">
                    <complexType>
                        <sequence>
                            <element name="Market" type="mpeg7:ControlledTermUseType"
minOccurs="0" maxOccurs="unbounded"/>
                            <element name="Age" minOccurs="0">
                                <complexType>
                                    <attribute name="min" type="nonNegativeInteger"
use="optional"/>
                                    <attribute name="max" type="nonNegativeInteger"
use="optional"/>
                                </complexType>
                            </element>
                            <element name="Region" type="mpeg7:regionCode" minOccurs="0"
maxOccurs="unbounded"/>
                        </sequence>
                    </complexType>
                </element>
                <element name="ParentalGuidance" type="mpeg7:ParentalGuidanceType"
minOccurs="0" maxOccurs="unbounded"/>
```

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```
                    <element name="MediaReview" type="mpeg7:MediaReviewType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- ExtendedLanguageType -->
    <complexType name="ExtendedLanguageType">
        <simpleContent>
            <extension base="language">
                <attribute name="type" use="optional" default="original">
                    <simpleType>
                        <restriction base="NMTOKEN">
                            <enumeration value="original"/>
                            <enumeration value="dubbed"/>
                            <enumeration value="background"/>
                        </restriction>
                    </simpleType>
                </attribute>
                <attribute name="supplemental" type="boolean" use="optional"
default="false"/>
            </extension>
        </simpleContent>
    </complexType>
    <!-- ParentalGuidanceType -->
    <complexType name="ParentalGuidanceType">
        <sequence>
            <choice>
                <element name="ParentalRating" type="mpeg7:ControlledTermUseType"/>
                <element name="MinimumAge" type="nonNegativeInteger"/>
            </choice>
            <element name="Region" type="mpeg7:regionCode" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <!-- MediaReviewType -->
    <complexType name="MediaReviewType">
        <sequence>
            <element name="Rating" type="mpeg7:RatingType" minOccurs="0"/>
            <element name="FreeTextReview" type="mpeg7:TextualType" minOccurs="0"
maxOccurs="unbounded"/>
            <element name="ReviewReference" type="mpeg7:RelatedMaterialType"
minOccurs="0"/>
            <element name="Reviewer" type="mpeg7:AgentType" minOccurs="0"/>
        </sequence>
    </complexType>
    <!-- RelatedMaterialType -->
    <complexType name="RelatedMaterialType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="DisseminationFormat" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                    <element name="MaterialType" type="mpeg7:TermUseType" minOccurs="0"/>
                    <choice>
                        <element name="MediaLocator" type="mpeg7:MediaLocatorType"/>
                        <element name="MediaInformation" type="mpeg7:MediaInformationType"/>
                        <element name="MediaInformationRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <choice minOccurs="0">
                        <element name="CreationInformation" type="mpeg7:CreationInformationType"/>
                        <element name="CreationInformationRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <choice minOccurs="0">
                        <element name="UsageInformation" type="mpeg7:UsageInformationType"/>
                        <element name="UsageInformationRef" type="mpeg7:ReferenceType"/>
                    </choice>
                </sequence>
            </extension>
        </complexContent>
```


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```
    </complexType>
    <!-- UsageInformationType -->
    <complexType name="UsageInformationType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="Rights" type="mpeg7:RightsType" minOccurs="0"/>
                    <element name="FinancialResults" type="mpeg7:FinancialType"
minOccurs="0"/>
                    <element name="Availability" type="mpeg7:AvailabilityType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="UsageRecord" type="mpeg7:UsageRecordType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- RightsType -->
    <complexType name="RightsType">
        <sequence>
            <element name="RightsID" type="mpeg7:UniqueIDType" maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <!-- FinancialType -->
    <complexType name="FinancialType">
        <sequence>
            <element name="AccountItem" maxOccurs="unbounded">
                <complexType>
                    <sequence>
                        <element name="EffectiveDate" type="mpeg7:timePointType"
minOccurs="0"/>
                        <choice>
                            <element name="CostType" type="mpeg7:TermUseType"/>
                            <element name="IncomeType" type="mpeg7:TermUseType"/>
                        </choice>
                    </sequence>
                    <attribute name="currency" type="mpeg7:currencyCode" use="required"/>
                    <attribute name="value" type="decimal" use="required"/>
                </complexType>
            </element>
        </sequence>
    </complexType>
    <!-- AvailabilityType -->
    <complexType name="AvailabilityType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="InstanceRef" type="mpeg7:ReferenceType"/>
                    <element name="Dissemination" type="mpeg7:DisseminationType"
minOccurs="0"/>
                    <element name="Financial" type="mpeg7:FinancialType" minOccurs="0"/>
                    <element name="Rights" type="mpeg7:RightsType" minOccurs="0"/>
                    <element name="AvailabilityPeriod" minOccurs="0"
maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:TimeType">
                                    <attribute name="type" use="optional">
                                        <simpleType>
                                            <list>
                                                <simpleType>
                                                    <union>
                                                        <simpleType>
                                                            <restriction base="NMTOKEN">
                                                                <enumeration value="live"/>
                                                                <enumeration value="repeat"/>
                                                                <enumeration
value="firstShowing"/>
                                                                <enumeration
value="lastShowing"/>
```

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```
                                                        <enumeration
value="conditionalAccess"/>
                                                        <enumeration value="encrypted"/>
                                                        <enumeration value="payPerUse"/>
                                                    </restriction>
                                                </simpleType>
                                                <simpleType>
                                                    <restriction
base="mpeg7:termReferenceType"/>
                                                </simpleType>
                                            </union>
                                        </simpleType>
                                    </list>
                                </simpleType>
                            </attribute>
                        </extension>
                    </complexContent>
                </complexType>
            </element>
        </sequence>
    </extension>
</complexContent>
</complexType>
<!-- DisseminationType -->
<complexType name="DisseminationType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="Source" type="mpeg7:TextualType" minOccurs="0"/>
                <element name="Format" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                <element name="Disseminator" type="mpeg7:MediaAgentType"
minOccurs="0"/>
                <element name="Location" type="mpeg7:PlaceType" minOccurs="0"/>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- UsageRecordType -->
<complexType name="UsageRecordType">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <element name="AvailabilityRef" type="mpeg7:ReferenceType"/>
                <element name="Audience" type="nonNegativeInteger" minOccurs="0"/>
                <element name="Financial" type="mpeg7:FinancialType" minOccurs="0"/>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- SegmentType -->
<complexType name="SegmentType" abstract="true">
    <complexContent>
        <extension base="mpeg7:DSType">
            <sequence>
                <choice minOccurs="0">
                    <element name="MediaInformation" type="mpeg7:MediaInformationType"/>
                    <element name="MediaInformationRef" type="mpeg7:ReferenceType"/>
                    <element name="MediaLocator" type="mpeg7:MediaLocatorType"/>
                </choice>
                <element name="StructuralUnit" type="mpeg7:ControlledTermUseType"
minOccurs="0"/>
                <choice minOccurs="0">
                    <element name="CreationInformation"
type="mpeg7:CreationInformationType"/>
                    <element name="CreationInformationRef" type="mpeg7:ReferenceType"/>
                </choice>
                <choice minOccurs="0">
                    <element name="UsageInformation" type="mpeg7:UsageInformationType"/>
                    <element name="UsageInformationRef" type="mpeg7:ReferenceType"/>
                </choice>
```


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```
                    <element name="TextAnnotation" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <complexContent>
                                <extension base="mpeg7:TextAnnotationType">
                                    <attribute name="type" use="optional">
                                        <simpleType>
                                            <union memberTypes="mpeg7:termReferenceType
string"/>
                                        </simpleType>
                                    </attribute>
                                </extension>
                            </complexContent>
                        </complexType>
                    </element>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="Semantic" type="mpeg7:SemanticType"/>
                        <element name="SemanticRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <element name="PointOfView" type="mpeg7:PointOfViewType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="Relation" type="mpeg7:RelationType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- SegmentDecompositionType -->
    <complexType name="SegmentDecompositionType" abstract="true">
        <complexContent>
            <extension base="mpeg7:DSType">
                <attribute name="criteria" type="string" use="optional"/>
                <attribute name="overlap" type="boolean" use="optional" default="false"/>
                <attribute name="gap" type="boolean" use="optional" default="false"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- TemporalSegmentDecompositionType -->
    <complexType name="TemporalSegmentDecompositionType" abstract="true">
        <complexContent>
            <extension base="mpeg7:SegmentDecompositionType"/>
        </complexContent>
    </complexType>
    <!-- SpatioTemporalSegmentDecompositionType -->
    <complexType name="SpatioTemporalSegmentDecompositionType" abstract="true">
        <complexContent>
            <extension base="mpeg7:SegmentDecompositionType"/>
        </complexContent>
    </complexType>
    <!-- MediaSourceSegmentDecompositionType -->
    <complexType name="MediaSourceSegmentDecompositionType" abstract="true">
        <complexContent>
            <extension base="mpeg7:SegmentDecompositionType"/>
        </complexContent>
    </complexType>
    <!-- MaskType -->
    <complexType name="MaskType" abstract="true">
        <complexContent>
            <extension base="mpeg7:DType"/>
        </complexContent>
    </complexType>
    <!-- TemporalMaskType -->
    <complexType name="TemporalMaskType">
        <complexContent>
            <extension base="mpeg7:MaskType">
                <sequence>
                    <element name="SubInterval" type="mpeg7:MediaTimeType"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
```

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```
    <!-- PointOfViewType -->
    <complexType name="PointOfViewType">
        <complexContent>
            <extension base="mpeg7:DType">
                <sequence>
                    <element name="SupplementalInformation"
type="mpeg7:TextAnnotationType" minOccurs="0"/>
                    <element name="Importance" maxOccurs="unbounded">
                        <complexType>
                            <sequence>
                                <element name="Value" type="mpeg7:zeroToOneType"/>
                                <element name="SegmentRef" type="mpeg7:ReferenceType"
minOccurs="0"/>
                            </sequence>
                        </complexType>
                    </element>
                </sequence>
                <attribute name="viewpoint" type="string" use="required"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- StillRegionType -->
    <complexType name="StillRegionType">
        <complexContent>
            <extension base="mpeg7:SegmentType">
                <sequence>
                    <choice minOccurs="0">
                        <element name="MediaTimePoint" type="mpeg7:mediaTimePointType"/>
                        <element name="MediaRelTimePoint"
type="mpeg7:MediaRelTimePointType"/>
                        <element name="MediaRelIncrTimePoint"
type="mpeg7:MediaRelIncrTimePointType"/>
                    </choice>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- VideoSegmentType -->
    <complexType name="VideoSegmentType">
        <complexContent>
            <extension base="mpeg7:SegmentType">
                <sequence>
                    <choice minOccurs="0">
                        <element name="MediaTime" type="mpeg7:MediaTimeType"/>
                        <element name="TemporalMask" type="mpeg7:TemporalMaskType"/>
                    </choice>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="TemporalDecomposition"
type="mpeg7:VideoSegmentTemporalDecompositionType"/>
                        <element name="SpatioTemporalDecomposition"
type="mpeg7:VideoSegmentSpatioTemporalDecompositionType"/>
                        <element name="MediaSourceDecomposition"
type="mpeg7:VideoSegmentMediaSourceDecompositionType"/>
                    </choice>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- VideoSegmentTemporalDecompositionType -->
    <complexType name="VideoSegmentTemporalDecompositionType">
        <complexContent>
            <extension base="mpeg7:TemporalSegmentDecompositionType">
                <choice maxOccurs="unbounded">
                    <element name="VideoSegment" type="mpeg7:VideoSegmentType"/>
                    <element name="VideoSegmentRef" type="mpeg7:ReferenceType"/>
                    <element name="StillRegion" type="mpeg7:StillRegionType"/>
                    <element name="StillRegionRef" type="mpeg7:ReferenceType"/>
                </choice>
            </extension>
        </complexContent>
    </complexType>
```


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```
    <!-- VideoSegmentSpatioTemporalDecompositionType -->
    <complexType name="VideoSegmentSpatioTemporalDecompositionType">
        <complexContent>
            <extension base="mpeg7:SpatioTemporalSegmentDecompositionType">
                <choice maxOccurs="unbounded">
                    <element name="MovingRegion" type="mpeg7:MovingRegionType"/>
                    <element name="MovingRegionRef" type="mpeg7:ReferenceType"/>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- VideoSegmentMediaSourceDecompositionType -->
    <complexType name="VideoSegmentMediaSourceDecompositionType">
        <complexContent>
            <extension base="mpeg7:MediaSourceSegmentDecompositionType">
                <choice maxOccurs="unbounded">
                    <element name="VideoSegment" type="mpeg7:VideoSegmentType"/>
                    <element name="VideoSegmentRef" type="mpeg7:ReferenceType"/>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- MovingRegionType -->
    <complexType name="MovingRegionType">
        <complexContent>
            <extension base="mpeg7:SegmentType"/>
        </complexContent>
    </complexType>
    <!-- VideoTextType -->
    <complexType name="VideoTextType">
        <complexContent>
            <extension base="mpeg7:MovingRegionType">
                <sequence>
                    <element name="Text" type="mpeg7:TextualType" minOccurs="0"/>
                </sequence>
                <attribute name="textType" use="optional">
                    <simpleType>
                        <union>
                            <simpleType>
                                <restriction base="NMTOKEN">
                                    <enumeration value="superimposed"/>
                                    <enumeration value="scene"/>
                                </restriction>
                            </simpleType>
                            <simpleType>
                                <restriction base="mpeg7:termReferenceType"/>
                            </simpleType>
                        </union>
                    </simpleType>
                </attribute>
                <attribute name="fontSize" type="positiveInteger" use="optional"/>
                <attribute name="fontType" type="string" use="optional"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- AudioSegmentType -->
    <complexType name="AudioSegmentType">
        <complexContent>
            <extension base="mpeg7:SegmentType">
                <sequence>
                    <choice minOccurs="0">
                        <element name="MediaTime" type="mpeg7:MediaTimeType"/>
                        <element name="TemporalMask" type="mpeg7:TemporalMaskType"/>
                    </choice>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="TemporalDecomposition"
type="mpeg7:AudioSegmentTemporalDecompositionType"/>
                        <element name="MediaSourceDecomposition"
type="mpeg7:AudioSegmentMediaSourceDecompositionType"/>
                    </choice>
                </sequence>
```

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```
            </extension>
        </complexContent>
    </complexType>
    <!-- AudioSegmentTemporalDecompositionType -->
    <complexType name="AudioSegmentTemporalDecompositionType">
        <complexContent>
            <extension base="mpeg7:TemporalSegmentDecompositionType">
                <choice maxOccurs="unbounded">
                    <element name="AudioSegment" type="mpeg7:AudioSegmentType"/>
                    <element name="AudioSegmentRef" type="mpeg7:ReferenceType"/>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- AudioSegmentMediaSourceDecompositionType -->
    <complexType name="AudioSegmentMediaSourceDecompositionType">
        <complexContent>
            <extension base="mpeg7:MediaSourceSegmentDecompositionType">
                <choice maxOccurs="unbounded">
                    <element name="AudioSegment" type="mpeg7:AudioSegmentType"/>
                    <element name="AudioSegmentRef" type="mpeg7:ReferenceType"/>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- AudioVisualSegmentType -->
    <complexType name="AudioVisualSegmentType">
        <complexContent>
            <extension base="mpeg7:SegmentType">
                <sequence>
                    <choice minOccurs="0">
                        <element name="MediaTime" type="mpeg7:MediaTimeType"/>
                        <element name="TemporalMask" type="mpeg7:TemporalMaskType"/>
                    </choice>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="TemporalDecomposition"
type="mpeg7:AudioVisualSegmentTemporalDecompositionType"/>
                        <element name="MediaSourceDecomposition"
type="mpeg7:AudioVisualSegmentMediaSourceDecompositionType"/>
                    </choice>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- AudioVisualSegmentTemporalDecompositionType -->
    <complexType name="AudioVisualSegmentTemporalDecompositionType">
        <complexContent>
            <extension base="mpeg7:TemporalSegmentDecompositionType">
                <choice maxOccurs="unbounded">
                    <element name="AudioVisualSegment"
type="mpeg7:AudioVisualSegmentType"/>
                    <element name="AudioVisualSegmentRef" type="mpeg7:ReferenceType"/>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- AudioVisualSegmentMediaSourceDecompositionType -->
    <complexType name="AudioVisualSegmentMediaSourceDecompositionType">
        <complexContent>
            <extension base="mpeg7:MediaSourceSegmentDecompositionType">
                <choice maxOccurs="unbounded">
                    <element name="AudioVisualSegment"
type="mpeg7:AudioVisualSegmentType"/>
                    <element name="AudioVisualSegmentRef" type="mpeg7:ReferenceType"/>
                    <element name="VideoSegment" type="mpeg7:VideoSegmentType"/>
                    <element name="VideoSegmentRef" type="mpeg7:ReferenceType"/>
                    <element name="StillRegion" type="mpeg7:StillRegionType"/>
                    <element name="StillRegionRef" type="mpeg7:ReferenceType"/>
                    <element name="AudioSegment" type="mpeg7:AudioSegmentType"/>
                    <element name="AudioSegmentRef" type="mpeg7:ReferenceType"/>
                </choice>
```


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```
            </extension>
        </complexContent>
    </complexType>
    <!-- SemanticBaseType -->
    <complexType name="SemanticBaseType" abstract="true">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <element name="Label" type="mpeg7:TermUseType" maxOccurs="unbounded"/>
                    <element name="Definition" type="mpeg7:TextAnnotationType"
minOccurs="0"/>
                    <element name="Property" type="mpeg7:TermUseType" minOccurs="0"
maxOccurs="unbounded"/>
                    <element name="MediaOccurrence" minOccurs="0" maxOccurs="unbounded">
                        <complexType>
                            <sequence>
                                <choice minOccurs="0">
                                    <element name="MediaInformation"
type="mpeg7:MediaInformationType"/>
                                    <element name="MediaInformationRef"
type="mpeg7:ReferenceType"/>
                                    <element name="MediaLocator"
type="mpeg7:MediaLocatorType"/>
                                </choice>
                                <element name="Mask" type="mpeg7:MaskType" minOccurs="0"/>
                            </sequence>
                            <attribute name="type" use="optional" default="perceivable">
                                <simpleType>
                                    <union>
                                        <simpleType>
                                            <restriction base="NMTOKEN">
                                                <enumeration value="perceivable"/>
                                                <enumeration value="reference"/>
                                                <enumeration value="symbol"/>
                                            </restriction>
                                        </simpleType>
                                        <simpleType>
                                            <restriction base="mpeg7:termReferenceType"/>
                                        </simpleType>
                                    </union>
                                </simpleType>
                            </attribute>
                        </complexType>
                    </element>
                    <element name="Relation" type="mpeg7:RelationType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- SemanticBagType -->
    <complexType name="SemanticBagType" abstract="true">
        <complexContent>
            <extension base="mpeg7:SemanticBaseType">
                <sequence>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="SemanticBase" type="mpeg7:SemanticBaseType"/>
                        <element name="SemanticBaseRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <element name="Graph" type="mpeg7:GraphType" minOccurs="0"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- SemanticType -->
    <complexType name="SemanticType">
        <complexContent>
            <extension base="mpeg7:SemanticBagType"/>
        </complexContent>
    </complexType>
```

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```
    <!-- ObjectType -->
    <complexType name="ObjectType">
        <complexContent>
            <extension base="mpeg7:SemanticBaseType">
                <choice minOccurs="0" maxOccurs="unbounded">
                    <element name="Object" type="mpeg7:ObjectType"/>
                    <element name="ObjectRef" type="mpeg7:ReferenceType"/>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- AgentObjectType -->
    <complexType name="AgentObjectType">
        <complexContent>
            <extension base="mpeg7:ObjectType">
                <choice minOccurs="0">
                    <element name="Agent" type="mpeg7:AgentType"/>
                    <element name="AgentRef" type="mpeg7:ReferenceType"/>
                </choice>
            </extension>
        </complexContent>
    </complexType>
    <!-- EventType -->
    <complexType name="EventType">
        <complexContent>
            <extension base="mpeg7:SemanticBaseType">
                <sequence>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="Event" type="mpeg7:EventType"/>
                        <element name="EventRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <element name="SemanticPlace" type="mpeg7:SemanticPlaceType"
minOccurs="0" maxOccurs="unbounded"/>
                    <element name="SemanticTime" type="mpeg7:SemanticTimeType"
minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- ConceptType -->
    <complexType name="ConceptType">
        <complexContent>
            <extension base="mpeg7:SemanticBaseType"/>
        </complexContent>
    </complexType>
    <!-- SemanticStateType -->
    <complexType name="SemanticStateType">
        <complexContent>
            <extension base="mpeg7:SemanticBaseType">
                <sequence>
                    <element name="AttributeValuePair" maxOccurs="unbounded">
                        <complexType>
                            <sequence>
                                <element name="Attribute" type="mpeg7:TermUseType"/>
                                <element name="Unit" type="mpeg7:TermUseType"
minOccurs="0"/>
                                <choice maxOccurs="unbounded">
                                    <element name="BooleanValue" type="boolean"/>
                                    <element name="IntegerValue" type="integer"/>
                                    <element name="FloatValue" type="float"/>
                                    <element name="IntegerMatrixValue"
type="mpeg7:IntegerMatrixType"/>
                                    <element name="FloatMatrixValue"
type="mpeg7:FloatMatrixType"/>
                                    <element name="TextValue" type="mpeg7:TextualType"/>
                                    <element name="TextAnnotationValue"
type="mpeg7:TextAnnotationType"/>
                                    <element name="ControlledTermUseValue"
type="mpeg7:ControlledTermUseType"/>
                                    <element name="DescriptorValue" type="mpeg7:DType"/>
                                </choice>
```


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```
                        </sequence>
                    </complexType>
                </element>
                <element name="SemanticTime" type="mpeg7:SemanticTimeType"
minOccurs="0"/>
                <element name="SemanticPlace" type="mpeg7:SemanticPlaceType"
minOccurs="0"/>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- SemanticPlaceType -->
<complexType name="SemanticPlaceType">
    <complexContent>
        <extension base="mpeg7:SemanticBaseType">
            <sequence>
                <element name="Place" type="mpeg7:PlaceType" minOccurs="0"/>
                <element name="SemanticPlaceInterval" minOccurs="0"
maxOccurs="unbounded">
                    <complexType>
                        <sequence>
                            <element name="Position" type="mpeg7:PositionType"
minOccurs="0"/>
                            <element name="Extent" type="mpeg7:ExtentType"
minOccurs="0"/>
                        </sequence>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- SemanticTimeType -->
<complexType name="SemanticTimeType">
    <complexContent>
        <extension base="mpeg7:SemanticBaseType">
            <sequence>
                <element name="Time" type="mpeg7:TimeType" minOccurs="0"/>
                <element name="SemanticTimeInterval" minOccurs="0"
maxOccurs="unbounded">
                    <complexType>
                        <sequence>
                            <element name="TimePoint" type="mpeg7:PositionType"
minOccurs="0"/>
                            <element name="Duration" type="mpeg7:ExtentType"
minOccurs="0"/>
                        </sequence>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<!-- ExtentType -->
<complexType name="ExtentType">
    <attribute name="measurementType" type="string" use="required"/>
    <attribute name="unit" type="string" use="required"/>
    <attribute name="value" type="string" use="required"/>
</complexType>
<!-- PositionType -->
<complexType name="PositionType">
    <sequence>
        <element name="Displacement" type="mpeg7:ExtentType" minOccurs="0"/>
        <element name="Direction" type="mpeg7:ExtentType" minOccurs="0"/>
    </sequence>
    <attribute name="origin" type="string" use="optional"/>
</complexType>
<!-- CollectionType -->
<complexType name="CollectionType" abstract="true">
    <complexContent>
        <extension base="mpeg7:DSType">
```

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```
                <sequence>
                    <choice minOccurs="0">
                        <element name="CreationInformation"
type="mpeg7:CreationInformationType"/>
                        <element name="CreationInformationRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <choice minOccurs="0">
                        <element name="UsageInformation" type="mpeg7:UsageInformationType"/>
                        <element name="UsageInformationRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <element name="TextAnnotation" type="mpeg7:TextAnnotationType"
minOccurs="0" maxOccurs="unbounded"/>
                </sequence>
                <attribute name="name" type="string" use="optional"/>
            </extension>
        </complexContent>
    </complexType>
    <!-- ContentCollectionType -->
    <complexType name="ContentCollectionType">
        <complexContent>
            <extension base="mpeg7:CollectionType">
                <sequence>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="Content" type="mpeg7:MultimediaContentType"/>
                        <element name="ContentRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="ContentCollection"
type="mpeg7:ContentCollectionType"/>
                        <element name="ContentCollectionRef" type="mpeg7:ReferenceType"/>
                    </choice>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- StructuredCollectionType -->
    <complexType name="StructuredCollectionType">
        <complexContent>
            <extension base="mpeg7:DSType">
                <sequence>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="Collection" type="mpeg7:CollectionType"/>
                        <element name="CollectionRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="CollectionModelRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="ClusterModelRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element name="StructuredCollection"
type="mpeg7:StructuredCollectionType"/>
                        <element name="StructuredCollectionRef" type="mpeg7:ReferenceType"/>
                    </choice>
                    <element name="Relationships" type="mpeg7:GraphType"
maxOccurs="unbounded"/>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
    <!-- listOfPositiveIntegerForDim -->
    <simpleType name="listOfPositiveIntegerForDim">
        <list itemType="positiveInteger"/>
    </simpleType>
    <!-- dim -->
    <attribute name="dim">
        <simpleType>
            <restriction base="mpeg7:listOfPositiveIntegerForDim">
                <minLength value="1"/>
            </restriction>
```

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```
        </simpleType>
    </attribute>
    <!-- basicTimePointType -->
    <simpleType name="basicTimePointType">
        <restriction base="string">
            <pattern value="\-?(\d+(\-\d{2}(\-
\d{2})?)?)?(T\d{2}(:\d{2}(:\d{2}(:\d+(\.\d{2})?)?)?)?)?(F\d+)?((\-|\+)\d{2}:\d{2})?"/>
        </restriction>
    </simpleType>
    <!-- basicDurationType -->
    <simpleType name="basicDurationType">
        <restriction base="string">
            <pattern value="\-
?P(\d+D)?(T(\d+H)?(\d+M)?(\d+S)?(\d+N)?(\d{2}f)?)?(\d+F)?((\-|\+)\d{2}:\d{2}Z)?"/>
        </restriction>
    </simpleType>
</schema>
```

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